

★★ SPECIAL COLLECTOR'S ISSUE ★★

# Model Railroader®

Fresh look at  
signaling p.66

April 2017  
www.ModelRailroader.com



# 1000 ISSUES

**A look at the  
future of model  
railroading** p.52

**Readers' all-time  
favorite issues** p.22

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cover photos** p.102

**PLUS**

**Our layout  
revealed!**

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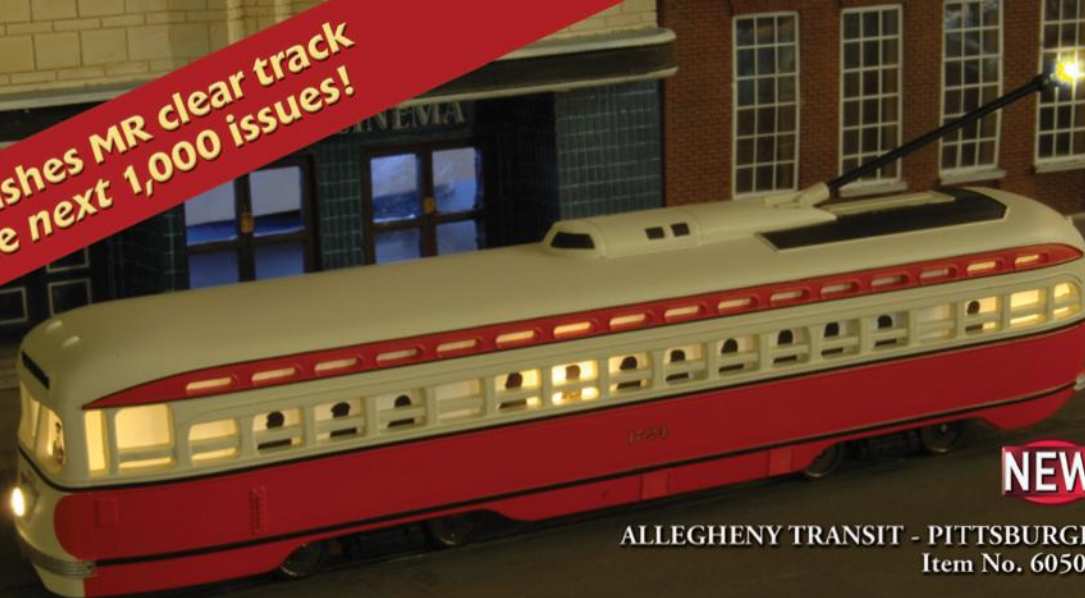
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2 famous layouts** p.58



Which is  
taller? 1,000  
issues or a Big  
Boy steamer?  
Answer on pg. 8

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CONTENT  
CODE PG. 4**

Bachmann wishes MR clear track  
ahead for the next 1,000 issues!



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Readers' all-time favorite issues

Gallery of best cover photos

PLUS

Our layout revealed!

After 28 years, we visit the Milwaukee, Racine & Troy

Tony Koester: 11 lessons from 2 famous layouts

**On the cover:** Eighty-three years worth of *Model Railroader* issues stack up to this month's 1,000th issue.

Bill Zuback photo



## Next issue

In May, Pelle Søborg introduces his new layout, Dana Kawala builds a viaduct, V.S. Roseman shows you how to upgrade passenger cars, and more!

**MREXTRA**

[www.ModelRailroader.com](http://www.ModelRailroader.com) subscriber extra

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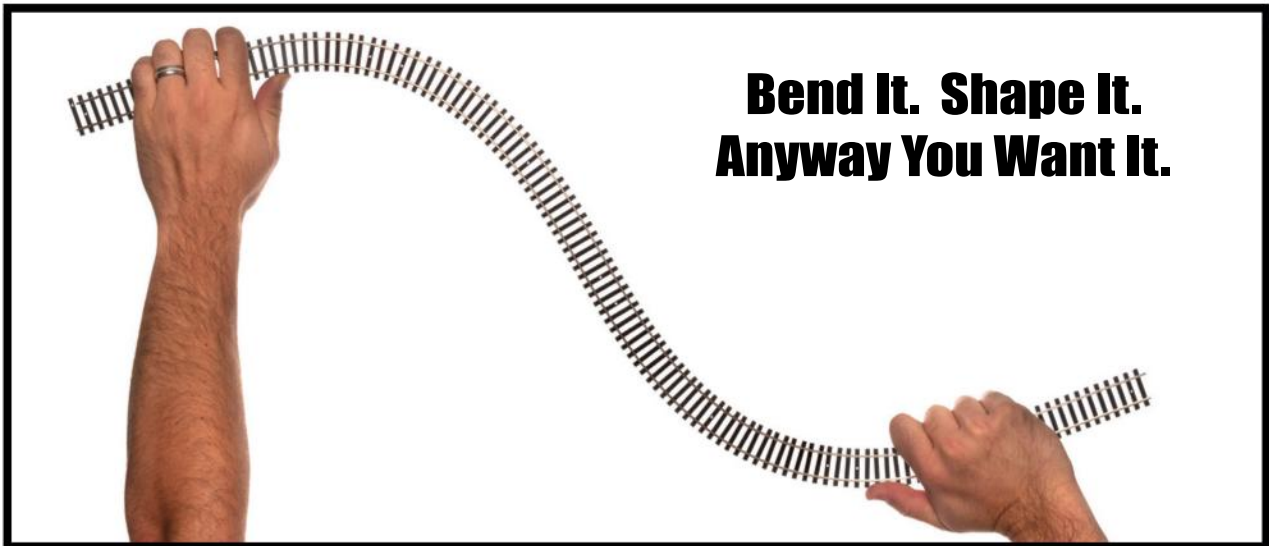
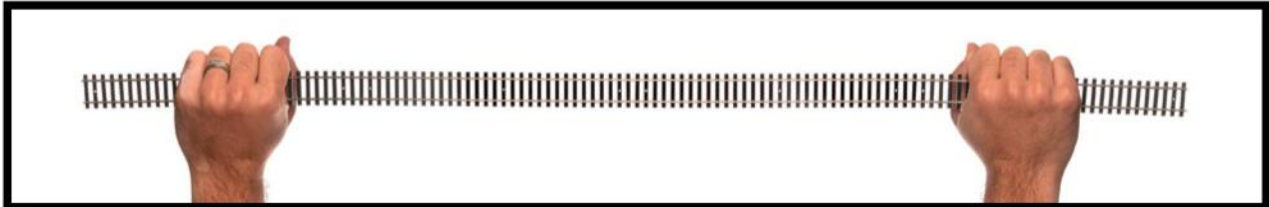
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## Get bonus video and a photo gallery

Turn to page 40 for a story on the *Model Railroader* staff's layout, the Milwaukee, Racine & Troy. We didn't have space to run all the photos we took, so we put together an online gallery. The photo above is also this month's free desktop wallpaper. Subscribers don't want to miss a video tour of the layout, as they follow a train along the MR&T. Find these and all the 1,000th issue online extras on the *Model Railroader* home page at [www.ModelRailroader.com](http://www.ModelRailroader.com).

## A LOOK BACK



### Model Railroader 1940

In celebration of our 1,000th issue we've posted this full version of a silent, short documentary showing how *The Model Railroader* magazine was made. Produced by MR staff members in 1940, this home movie shows how things were done in the "good old days," including footage of Linn Westcott, Frank Taylor, and A.C. Kalmbach.

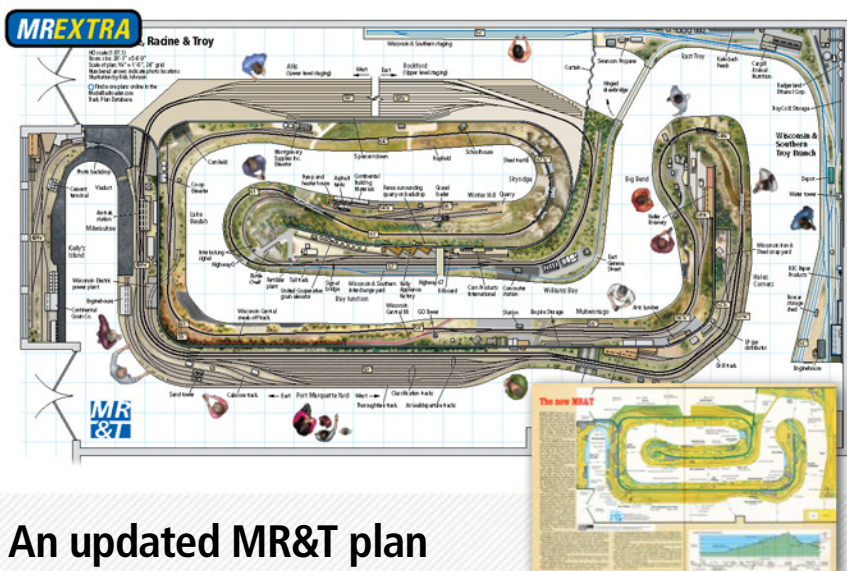


As an added bonus we've also posted a short audio interview with model railroading pioneer John Allen. Recorded in the early 1970s, he discusses the operation of his famed Gorre & Daphetid layout.



### Memorable moments with MR readers and staff

In this special video series, past and present staff members as well as your fellow readers discuss their favorite *Model Railroader* memories. Watch them all and share your memories on the Videos page at [www.ModelRailroader.com](http://www.ModelRailroader.com).



## An updated MR&T plan

Back when the original Milwaukee, Racine & Troy track plan appeared in *Model Railroader*, the layout was under construction. For the first time since 1989, we've updated the MR&T track plan, reflecting how it was actually built. The plan also incorporates recent step-by-step projects and major renovations, including Bay Junction, Winter Hill, and the Wisconsin & Southern Troy Branch.

Check out the MR&T, then and now, by clicking the Track Plan Database link on the MR home page. Subscribers have access to more than 500 downloadable track plans at [www.ModelRailroader.com](http://www.ModelRailroader.com).



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# Model railroading present, past, and future

**Welcome** to the 1,000th issue of *Model Railroader* magazine! Monthly publications rarely reach this mark (it takes 83-plus years), so clearly a big celebration is in order.

To kick things off, our staff-built layout, the Milwaukee, Racine & Troy RR, finally makes an appearance in *Model Railroader*. Readers have been asking us questions about the layout annually since construction began 28 years ago, and our 1,000th issue felt like the right time for a long-requested story.

The funny thing is, photos of the MR&T layout are in *Model Railroader* all the time. Associate editor Cody Grivno alone has written two dozen or more of our monthly Step by Step columns about scenery and structure projects on the HO scale MR&T.

But we've never strung the photos together into a feature

story about our layout, as it looks today, until now. Turn to page 40 for more.

Elsewhere in this special issue are stories about the future of model railroading and remembrances of its past.

Frequent author Lance Mindheim presents his version of the future on page 52. Lance's future vision may stir the pot, but that's the whole point of the story.

Looking to the past, we had asked each of you last summer to send us 250 words about your most memorable issue of *Model Railroader*.

Your response was overwhelming, and many of the letters are printed in an extended version of Railway Post Office on page 22.

Also this month, the staff has commandeered Tracksides Photos to present some of its favorite cover photos of the past 1,000 issues, free from the cropping restraints of a

magazine cover and minus those annoying cover words.

**We've taken** our 1,000th issue as an opportunity to refresh the design of our magazine. Don't fret, nothing has been added or removed.

Art director Tom Dannehan and his staff have brought our colors, graphics, and headline font up to date. While many of us model the 1950s and '60s on our railroads, magazine pages are supposed to look current and lively (yes, those handwritten words below are intentional).

Tom and senior graphic designers Scott Krall and Drew Halverson (yes, the same Drew on *Model Railroader* Video Plus) did a bang-up job, and since these guys seldom get credit in public, I'm name-dropping them right now.

Also, a special thanks goes to our printer Quad



Graphics for its suggestion to use the "Color Logic Special Effects for Print" process on the cover. Look closely, and you'll see a pearlescent effect – pretty cool!

**On this month's cover**, to the right of the stack of magazines, is a question: Which is taller, 1,000 issues of *Model Railroader* or a Union Pacific Big Boy locomotive? The steam engine, at 16½ feet, is taller – but not by much!

NEIL BESOUGLOFF

## Model Railroader.

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## Contributing to Model Railroader

**We welcome** contributions from readers, including articles, photographs, and drawings. For more information on submitting material, call us at 262-796-8776 and ask for an MR staff member or e-mail us at mrmag@mrmag.com. *Model Railroader* assumes no responsibility for the safe return of unsolicited material. We assume unsolicited material is intended for publication by Kalmbach Publishing Co. unless otherwise noted. We assume letters, questions, news releases, and club news items are contributed gratis.

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## HO scale



**Electro-Motive Division E7A diesel locomotive.** Bachmann's latest cab unit is decorated for Pennsylvania RR; Baltimore & Ohio; Chicago, Burlington & Quincy; New York Central; and Southern Ry., in one road number per scheme. The E7A (\$299)

has a die-cast metal frame, all-wheel drive, illuminated number boxes, and a SoundTraxx Sound Value diesel sound package. Bachmann Trains, 215-533-1600, [www.bachmanntrains.com](http://www.bachmanntrains.com)

## HO scale locomotives

- **General Electric AC4400CW diesel locomotive.** Burlington Northern (Heritage II), CSX (yellow, blue, and gray), Kansas City Southern, Norfolk Southern (blue-and-gray and black-and-red AC44C6M schemes, two numbers each), Cartier Mining, Southern Pacific, and Union Pacific (Southern Pacific patchout). Three numbers per scheme unless noted. Factory-installed wire grab irons, prototype-specific details, and Quick Plug with 8- and 9-pin connectors for Digital Command Control decoder. \$119.98. October 2017. Roundhouse line. Athearn Trains, 800-338-4639, [www.athearn.com](http://www.athearn.com)
- **Union Pacific class FEF 4-8-4 steam locomotive.** Nos. 827, 839, 844, and 8444. Oil tender, metal handrails, and boiler backhead with printed gauges. Direct-current model, \$519.98; with dual-mode ESU LokSound sound decoder in tender, \$619.98. October 2017. Athearn Trains, 800-338-4639, [www.athearn.com](http://www.athearn.com)
- **Electro-Motive Division GP40-2 diesel locomotive.** New paint schemes: Alaska RR (two road numbers), Canadian

Pacific, CSX (dark blue and yellow with "boxcar" herald), Guilford Rail System (Boston & Maine reporting marks), Seaboard System (two numbers), and Union Pacific. Three numbers per scheme unless noted; also available undecorated (with curved air conditioner and Southern Pacific version). Die-cast metal underframe, detailed cab interior with painted crew figures, and Accumate couplers. Direct-current model, \$159.95; with dual-mode ESU LokSound Select sound decoder, \$269.95. Second quarter 2017. Master Line. Atlas Model Railroad Co., 908-687-0880, [www.atlasrr.com](http://www.atlasrr.com)

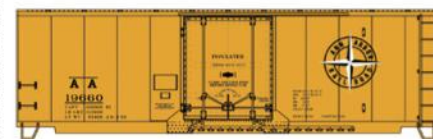
## HO scale streetcars



- **Presidents Conference Committee streetcar.** San Diego, Allegheny Transit, Chicago, NJ Transit, Pacific Electric, and

Philadelphia Transit Co. One road number each. Upgraded model with lower ride height, wheel and truck detail, and simulated spark at end of trolley pole. Features SoundTraxx Sound Value streetcar sound package. \$225. Bachmann Trains, 215-533-1600, [www.bachmanntrains.com](http://www.bachmanntrains.com)

## HO scale freight cars



- **Assorted freight cars.** Ann Arbor 40-foot insulated boxcar, \$17.98. Berwind, Interstate, and Montour United States Railroad Administration two-bay hoppers (\$16.98 each; three-pack, \$49.98). New York Central 36-foot double-sheathed wood boxcar with steel ends, \$17.98. Norfolk & Western Pullman-Standard 4,750-cubic-foot-capacity covered hopper, \$19.98. Santa Fe Refrigerator Despatch 40-foot steel refrigerator car, \$18.98. Wisconsin Central 50-foot double-plug-door



boxcar, \$17.98. Injection-molded plastic kits with plastic wheelsets and Accumate couplers. Accurail, 630-365-6400, [www accurail.com](http://www accurail.com)

- **40-foot pulpwood flatcar.** Atlantic Coast Line; Chicago, Burlington & Quincy; CSX; Great Northern; Missouri Pacific; Northern Pacific; and Union Pacific. Three road numbers per scheme. 50-ton Bettendorf or 70-ton roller-bearing trucks as appropriate, 33" metal wheels, and body-mounted McHenry scale couplers. \$24.98. October 2017. Roundhouse line. Athearn Trains, 800-338-4639, [www.athearn.com](http://www.athearn.com)

- **33,900-gallon liquefied petroleum gas tank car.** ConocoPhillips Co. (late body), Exxon Mobil Corp. (early body), Procor (early body), and Union Tank Car Co. (flat panel body in two paint schemes, late body in one scheme). Three road numbers per scheme. Injection-molded plastic body, uncoupling levers, and 100-ton roller-bearing trucks with rotating bearing caps. \$49.98. October 2017. Athearn Trains, 800-338-4639, [www.athearn.com](http://www.athearn.com)

- **American Car & Foundry 5,250-cubic-foot-capacity four-bay Center Flow covered hopper.** Continental Polymers Inc., Denver & Rio Grande Western, Honeycomb, Hostess Cakes/Wonder Bread (American Revolution Bicentennial scheme), Union Carbide Plastics, Union Pacific ("Building America" slogan with St. Louis Southwestern reporting marks), and Wisconsin Central. Three road numbers per scheme. Round hatch covers, separately applied brake wheel, and McHenry scale couplers. \$23.98. November 2017. Roundhouse line. Athearn Trains, 800-338-4639, [www.athearn.com](http://www.athearn.com)

- **Trinity 5,660-cubic-foot-capacity Pressure Differential covered hopper.** Archer Daniels Midland (leaf logo), ConAgra ("Feeding America" slogan, six road numbers), First Union (SCYX reporting marks), and Norfolk Southern. Twelve numbers per scheme unless noted; also available undecorated. Injection-molded plastic model with separately applied grab irons and uncoupling levers and etched-metal crossover platforms. \$52.95 (undecorated, \$47.95). A donation for every ConAgra "Feeding America" car will be made to the Community Food Bank of New Jersey. Atlas Model Railroad Co., 908-687-0880, [www.atlasrr.com](http://www.atlasrr.com)

## N scale



**National Park Centennial Tour train.** This five-car set from the Lowell Smith Signature Series features heavyweight sleepers *John Muir*, *Stephen Mather*, and *Horace Albright*; heavyweight "mural car" with artwork by Philip Smith; and heavyweight observation car *Theodore Roosevelt*. The set, priced at \$249, includes a foam-lined gift box and National Park Service centennial pin. A portion of each sale goes to the National Park Foundation. Lowell Smith Signature Series, [www.lowellsmith.net](http://www.lowellsmith.net)

- **Two-bay offset side hopper.** New road numbers: Canadian Pacific (script lettering), Delaware & Hudson (Oxide Red), Lehigh & New England (black with "LNE" billboard lettering), Louisville & Nashville ("The Old Reliable" slogan), and Northern Pacific (black). Five road numbers per scheme (two single cars and one three-pack); also available undecorated (single car only). Body-mounted Accumate couplers, 50-ton trucks, and brake gear detail. \$21.95; three-pack, \$65.85. Trainman line. Atlas Model Railroad Co., 908-687-0880, [www.atlasrr.com](http://www.atlasrr.com)



- **Assorted freight cars.** Northern Pacific 40-foot double-door boxcar, Burlington Northern and Denver & Rio Grande Western 70-ton covered hopper, Great Northern 40-foot boxcar (Glacier Green with standing Rocky), Pennsylvania RR class K11 stockcar, and PRR class X31 boxcar (shadow keystone). Three road numbers each. Injection-molded plastic kits with metal wheels and separate brake appliances. \$17.95. Bowser Manufacturing Co. Inc., 570-368-2379, [www.bowser-trains.com](http://www.bowser-trains.com)

- **Pullman-Standard PS-1 40-foot Mini-Hy Cube boxcar.** New paint

schemes: Burlington Northern (1982 Cascade Green, two road numbers); Chicago, Burlington & Quincy (November 1967 Chinese Red, four numbers); Milwaukee Road (original 1968 DFB, three numbers); and Northern Pacific (original 1967 Loewy Green, three numbers). Undecorated kits also available, \$36.95. Barber S-2-A 70-ton roller-bearing trucks, 33" metal wheelsets, and Kadee couplers. \$44.95. Tangent Scale Models, 828-279-6106, [www.tangentscalemodels.com](http://www.tangentscalemodels.com)



- **Union Pacific class S-40-1 pressed steel underframe stockcar.** Original (1905-1913), safety appliance (1913-1925), rebuilt (1925-1939), and modern (1939-1951) versions. Cast-urethane kit with integral one-piece roof casting with

## CORRECTION

The CSX layout photos shown on the cover of the March 2017 issue and on page 28 were incorrectly credited to Lance Mindheim. Paul Dolkos took the photos.

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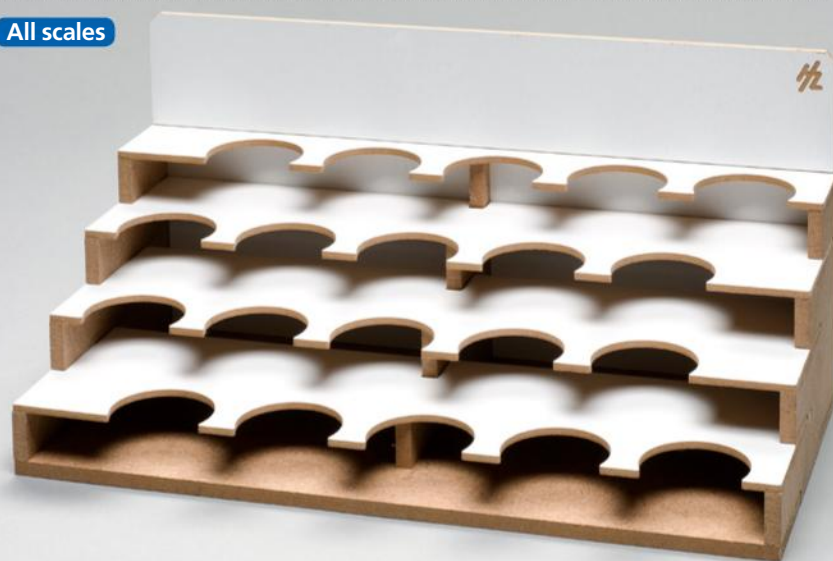
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## News & Products

### All scales



**Modular paint shelf.** This machine cut medium-density fiberboard kit features 20 cutouts for Tamiya 23ml paint bottles. The kit, priced at **\$16.95**, includes magnets for connecting to other HobbyZone USA Modular Workshop System components. The module measures 11.8" x 5.9" x 5.9". HobbyZone USA, [www.hobbyzone.biz](http://www.hobbyzone.biz)

board-by-board wood grain detail, Yarmouth Model Works etched bronze Carmer uncoupling levers, and decals with lettering for UP and subsidiaries San Pedro, Los Angeles & Salt Lake; Oregon Short Line; and Los Angeles & Salt Lake. Single-deck car, \$39; double-deck car, \$40; with Tahoe Model Works American Car & Foundry archbar trucks and InterMountain code 110 wheels, \$45; and Tahoe Model Works trucks and InterMountain code 88 wheels, \$46. Westerfield Models LLC, 303-658-9343, [www.westerfieldmodels.com](http://www.westerfieldmodels.com)

### HO scale structures



• **Delancey Street.** Features six buildings including an Art Deco-style theater, an aluminum diner, and a beauty salon. Includes Woodland Scenics figures and Chooch Industries retaining wall and street products. Diorama shown measures 27" x 12". \$345 plus shipping. Available only from manufacturer. Bar Mills Scale Models, 207-929-3400, [www.barmillsscalemodels.com](http://www.barmillsscalemodels.com)

• **Aggregate bins.** Injection-molded plastic kit. \$14.98. Cornerstone series. Wm. K. Walther's Inc., 414-527-0770, [www.walthers.com](http://www.walthers.com)

• **Brick church.** Injection-molded plastic kit with two front door styles, printed paper stained-glass windows, and belfry with steeple. Measures 8" x 4 7/16". \$44.98. Cornerstone series. Wm. K. Walther's Inc., 414-527-0770, [www.walthers.com](http://www.walthers.com)

### HO scale details and accessories

• **Ford C cab-over-engine tractor with beverage trailer.** Country Club Malt Liquor, Double Line Soda, Penguin Ginger Ale, Jo-Jo Chocolate-Flavored Drink, and U.B. Schuiggenpeuken Premium Pilsner. Tractor features molded cab interior with separate steering wheel and clear window glazing. Tractor and trailer have rolling vinyl tires. \$33.98. November 2017. Athearn Trains, 800-338-4639, [www.athearn.com](http://www.athearn.com)

• **1973 Ford F-100 pickup.** New colors. Single-body color (\$19.95): Maintenance-of-Way Yellow, Raven Black, Sequoia Brown, and Wimbledon White. Two-tone body color (\$22.95): Candy Apple Red/Wimbledon White and Wimbledon White/Winter Green. Also available undecorated (\$16.95). Side-view mirrors, headlight glazing, and detailed cab

interior. Second quarter 2017. Atlas Model Railroad Co., 908-687-0880, [www.atlasrr.com](http://www.atlasrr.com)



• **New Look Bus.** BC Transit, Boston/Massachusetts Bay Transportation Authority, Connecticut Transit, DC Transit, Detroit Department of Street Railways, Los Angeles (Los Angeles Metropolitan Transportation Authority), Edmonton Transit, Ottawa OC Transpo, Pittsburgh (Port Authority), St. Louis (Bi-State), and Toronto Transit Commission (maroon). Standard and deluxe versions. Both versions have etched-metal interior stanchions, stamped-metal handrail, positionable front wheels, and grooved flooring. Deluxe version features interior lighting, working headlights and taillights, illuminated front destination sign, painted seatback handrails, and two-tone seats (where appropriate). Lighting requires 12V power supply (not included). Standard version, \$49.95 (kit, \$29.95); deluxe version, \$69.95. Fall 2017. Rapido Trains, 905-474-3314, [www.rapidotrains.com](http://www.rapidotrains.com)



• **Assorted United States Army vehicles.** Halftrack (\$37.51), Sherman M4 (\$37.51), M12 155mm gun motor carriage (\$35.86), M8 Stuart light tank (\$35.86), M38 Jeep with 106mm AT gun (\$34.09), and M48A2 (\$37.51). Hand-assembled and painted cast-resin vehicles and etched-metal models. Produced by Artitec, available from Roman & Co. USA Inc., 640-365-6340, [www.roco.com](http://www.roco.com)

• **Stone piers and abutments for railroad bridges.** Double-track: Stone abutment, \$17.98. Stone pier, \$19.98. Single-track: Stone abutment (low), \$9.98. Stone abutment (high), \$11.98. Deck bridge stone pier, \$11.98. Stone pier, \$14.98. Railroad bridge stone wing walls, \$11.98.

## In Memoriam

Donald Reschenberg, 1931-2017

**Donald "Don" Reschenberg**, an associate editor with *Model Railroader* magazine from 1956 to 1963, died on Jan. 7. He was 85.

Don wrote scratchbuilding articles and provided prototype drawings for MR. He also worked on the Portage Hill & Communitipaw project railroad in 1962.

After Don left MR in 1963, he went to work at the Jos. Schlitz Brewing Co. in Milwaukee, where he retired as the employee services director.

Resin castings with textured stone surfaces. Cornerstone Engineered Bridge System. Wm. K. Walther Inc., 414-527-0770, [www.walthers.com](http://www.walthers.com)

## N scale locomotives

• **Electro-Motive Division F45 diesel locomotive.** Atchison, Topeka & Santa Fe (pinstripe scheme); New York, Susquehanna & Western (two road numbers); Utah Ry. (gray-and-yellow scheme in one number and Burlington Northern patchout); and Wisconsin & Southern (two numbers). Die-cast metal frame, full cab interior, and McHenry scale couplers. Direct-current model, \$116.98; with dual-mode SoundTraxx Tsunami 2 sound decoder, \$216.98. November 2017. Athearn Trains, 800-338-4639, [www.athearn.com](http://www.athearn.com)

• **Electro-Motive Division GP7 and GP9 diesel locomotives.** New paint schemes. GP7: Chicago, Burlington & Quincy (Chinese Red); Denver & Rio Grande Western (black and Aspen Gold); Lackawanna (black and gold); and Southern Ry. (black, silver, and gold). GP9: Chessie System (Baltimore & Ohio, Chesapeake & Ohio, and Western Maryland reporting marks), Pennsylvania RR (Dark Locomotive Enamel Green and gold), and Union Pacific ("Road of the Streamliners" slogan). Two road numbers per scheme; both body styles also available undecorated. Low-friction drive with dual brass flywheels, directional golden-white light-emitting-diode headlights, and Accumate couplers. Direct-current model, \$119.95; with NCE

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## News & Products

### HO scale



**Assorted die-cast metal construction equipment.** Menards has added vehicles to its HO scale product line, including an articulated quarry-style dump truck (\$19.99), a tower cable excavator (\$29.99), and an excavator with a hammer attachment (\$24.99). The models have cab interiors, window glazing, and positionable parts. Shipping charges apply for home delivery, or models can be shipped free to your local Menards store. Menards, [www.menards.com](http://www.menards.com)

motor-only decoder, \$154.95. Master Line. Atlas Model Railroad Co., 908-687-0880, [www.atlasrr.com](http://www.atlasrr.com)



• **Siemens ACS-64 Cities Sprinter locomotive.** New road numbers: Amtrak. Three numbers. Positionable pantographs, directional headlights, and flywheel-equipped motor. \$150. Kato USA Inc., 847-781-9500, [www.katousa.com](http://www.katousa.com)

### N scale freight cars

• **Bethlehem Steel Co. 89-foot class F89F flatcar.** Trailer Train (brown and yellow schemes, six road numbers each). Injection-molded plastic body, 70-ton roller-bearing trucks with 33" metal wheels, and two trailer hitches. \$32.98. October 2017. AthearnN. Athearn Trains, 800-338-4639, [www.athearn.com](http://www.athearn.com)

• **FMC 50-foot boxcar with Superior plug doors.** Atchison, Topeka & Santa Fe ("Shock Control" lettering); BNSF Ry. (post-2005 herald); Canadian National (wet noodle herald and [www.cn.ca](http://www.cn.ca)); Minnesota, Dakota & Western; New Orleans Public Belt; and Norfolk Southern (Southern Ry. reporting marks).

Three road numbers per scheme. Screw-mounted trucks, metal wheels, and McHenry couplers. \$21.98. November 2017. Athearn Trains, 800-338-4639, [www.athearn.com](http://www.athearn.com)

• **NE-5 caboose.** Boston & Maine; Chicago Great Western; Conrail; New York, New Haven & Hartford; and Penn Central. Three road numbers per scheme; also available undecorated. Prototype-specific trucks, brake line detail, and Accumate couplers. \$29.95 (undecorated, \$19.95). Atlas Model Railroad Co., 908-687-0880, [www.atlasrr.com](http://www.atlasrr.com)

### N scale passenger cars



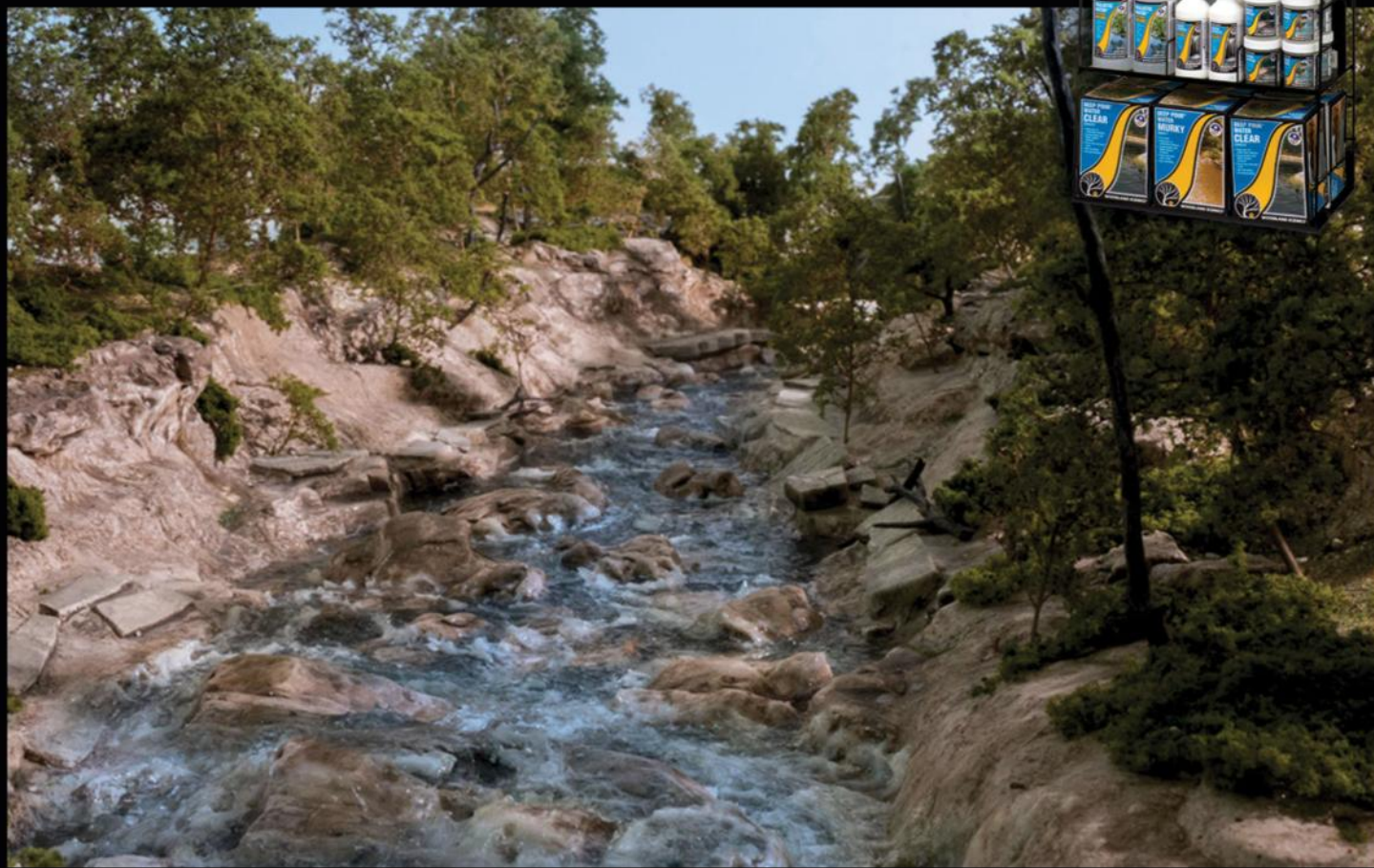
• **28-seat, 1-drawing-room heavy-weight parlor car.** New paint scheme: New York, New Haven & Hartford. Detailed interior, clear window glazing, and Magne-Matic couplers. \$29.95. Micro-Trains Line Co., 541-535-1755, [www.micro-trainsline.com](http://www.micro-trainsline.com)

### O scale freight cars

• **52'-6" 70-ton war-emergency gondola.** New paint schemes: Atchison, Topeka & Santa Fe; Grand Trunk Western; Indiana Harbor Belt; Norfolk & Western; and Pennsylvania RR. Four

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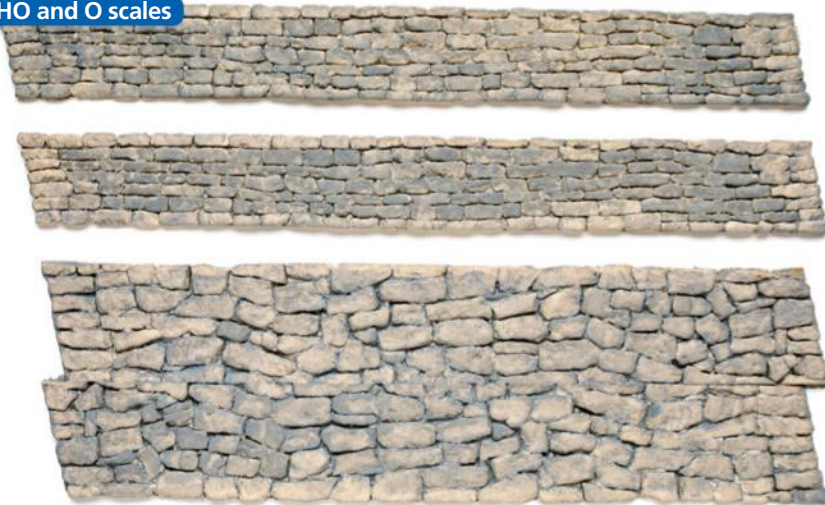
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HO and O scales



**Seawalls.** Chooch Enterprises has released these factory-weathered flexible vinyl sheets. The seawalls feature interconnecting ends and can be cut with scissors. The sheets can be installed with hot glue or Chooch Enterprises Adhesive Transfer Tape (no. 8249, sold separately). Chooch offers the seawalls in medium (HO scale, 11¾" x 1¼" and large (HO and O scales, 11½" x 1¾"). A two-pack retails for **\$12.99**. Chooch Enterprises Inc., 425-273-4794, [www.choochenterprises.com](http://www.choochenterprises.com)

road numbers per scheme; also available undecorated. Ajax brake system, separately applied brake wheel, and positionable drop ends. \$59.95. Trainman line.

Atlas O, 908-687-9590, [www.atlaso.com](http://www.atlaso.com)

• **Gunderson Maxi-IV three-unit articulated well car.** New paint schemes: III Transportation (Arkansas-Oklahoma RR reporting marks), BNSF Ry. (post-2005 herald), and TTX (Pacer Stacktrain patchout and current logo). Two road numbers per scheme. Die-cast metal construction with etched-metal platforms, separate brake detail, and roller-bearing trucks with rotating bearing caps. \$299.95. Atlas O, 908-687-9590, [www.atlaso.com](http://www.atlaso.com)

O scale details and accessories

• **53-foot CIMC and Jindo intermodal containers.** New road names. CIMC: Florida East Coast. Jindo: CSX ("How tomorrow moves" slogan) and North American Container System. New road numbers. CIMC: EMP, Hub Group (Norfolk Southern), and UMAX (Union

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1:87 SCALE [WWW.SCALETAINS.COM](http://WWW.SCALETAINS.COM)  
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**1 Metal lamps.** Woodland Scenics offers this three-pack (\$24.99) of street lights in HO scale. Woodland Scenics, [www.woodlandscenics.com](http://www.woodlandscenics.com)



**2 Picture Windows.** Eighteen different photo interiors for HO scale buildings are available

from City Classics. Each kit (\$5.98; four-pack, \$19.98) includes a printed scene and cardstock strip. City Classics, [www.cityclassics.biz](http://www.cityclassics.biz)



**3 Electro-Motive Division SDP40F.** This BNSF Ry. diesel is available in N scale from Kato. The direct-current

version lists for \$125; with an ESU LokSound Digital Command Control and sound decoder it sells for \$250. Kato, [www.katousa.com](http://www.katousa.com)

**4 7-post boxcar.** New paint schemes on this Fox Valley Models N scale boxcar (\$19.95) include Montana Rail Link. Fox Valley Models, [www.foxvalleymodels.com](http://www.foxvalleymodels.com)



**5 40-foot hi-cube boxcar.** Micro-Trains has released this N scale appliance hauler (\$35.90) in Union Pacific paint. Micro-Trains Line Co., [www.micro-trains.com](http://www.micro-trains.com)

**6 17,360-gallon tank car.** Atlas sells this modern N scale model (\$29.95) lettered for General American in three new numbers. Atlas Model Railroad Co., [www.atlasrr.com](http://www.atlasrr.com)




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Pacific/CSX). Six container numbers per scheme; both containers also available undecorated. \$29.95. Atlas O, 908-687-9590, [www.atlaso.com](http://www.atlaso.com)

- **Ford F-250 XLT pickup trucks.** With Super Cab and 8-foot bed or Crew Cab and 6-foot bed. Both body styles available in black, dark blue, gray, red, and white. Plastic and die-cast metal construction with positionable front axle, doors, hood, and tailgate; sprung suspension; and engine and underbody detail. \$74.95 each; two-pack (white in each body style), \$169.95. Atlas O, 908-687-9590, [www.atlaso.com](http://www.atlaso.com)

## Z scale locomotives



- **Electro-Motive Division GP30 diesel locomotive.** New paint scheme: CSX. Three road numbers. Directional light-emitting-diode headlights, prototype-specific details, and AutoLatch couplers. American Z Line, 614-764-1703, [www.americanzline.com](http://www.americanzline.com)

## Z scale passenger cars



- **Amtrak Superliner coach, sleeper, diner, and lounge cars.** Phase 4b paint scheme. Coach and sleeper in three road numbers each, diner and lounge in one number each. Detailed interior, tinted window glazing, metal wheelsets, and AutoLatch couplers. American Z Line, 614-764-1703, [www.americanzline.com](http://www.americanzline.com)

## Electronics/controls

- **Siemens ACS-64 electric locomotive sound card.** For use with Kato Sound Box. \$29.99. Kato USA Inc., 847-781-9500, [www.katousa.com](http://www.katousa.com)

- **Pi-SPROG One.** Digital Command Control programmer and controller for Raspberry Pi computer. Compatible with Pi 2 and 3. Full programming track or command station operation. Runs with JMRI DecoderPro software. Add-on board with software and power supply,



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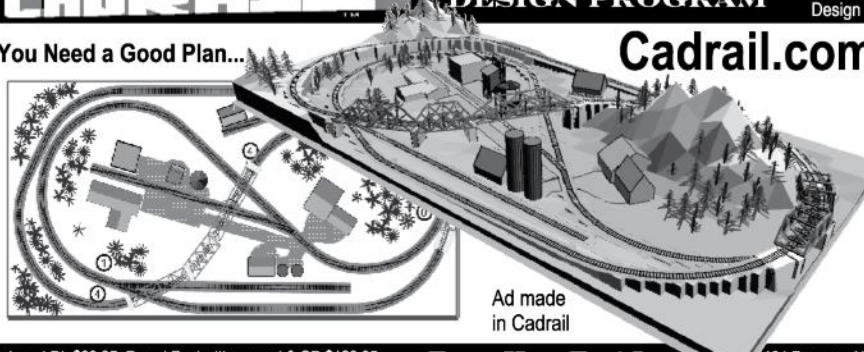
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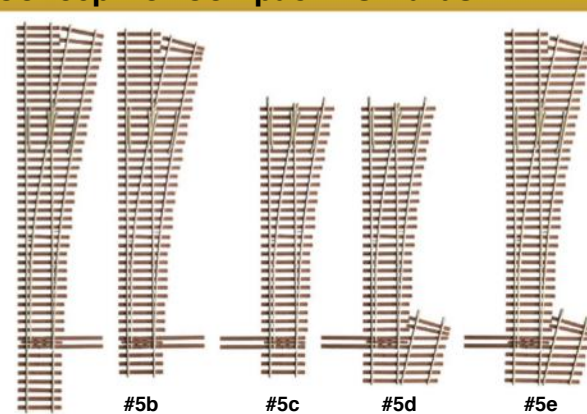
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## News & Products

### Club offerings



- **Penn Central (Toledo & Ohio Central reporting marks) 50-foot riveted-side boxcar.** Accurail HO scale kit. Two road numbers available. \$26 plus \$7 shipping for one or two cars. Ohio residents add 7.5 percent sales tax. Check or money order to COMRC, % Bill Alarie, 632 D'Lyn St., Columbus, OH 43228; [www.comrcinc.org](http://www.comrcinc.org)

\$89.95; add-on board, software, power supply, and Raspberry Pi 3, \$149.95. BBM Group LLC, [sprog.us.com](http://sprog.us.com)

### Decals



- **Milwaukee Road reweigh data.** Alps-printed water-slide decals. Black and white. Reweigh data covers the years 1959 to 1980. Each set contains more than 65 cars worth of lettering. \$10 each. Illinois Central Gulf Decals, [paducah.home.mindspring.com](http://paducah.home.mindspring.com)
- **Assorted decals.** Orient Overseas Container Line early 20- and 40-foot intermodal containers and modern graffiti (HO and N scales only). N scale, \$6.75; HO scale, \$8.25; and O scale, \$12.95. Microscale Industries, 714-593-1422, [www.microscale.com](http://www.microscale.com)

### Books

- **Arduino Model Railroad Animation.** By Paul and David Brandt. Covers how to use Arduino micro-controllers to power and control a variety of items, including a jib crane, water tank spout, and semaphore signa. Alternate control schemes are also covered. Soft cover, 135 pages. Published by CreateSpace Independent Publishing. Book (\$24.99) and Kindle version (\$6.99) both available through [www.amazon.com](http://www.amazon.com). **MR**



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# Railway Post Office

We asked you to tell us what your all-time favorite issue of *Model Railroader* is, and you responded. Here's a representative sample:



## March 1944

March 1944! That issue featured part one of an unforgettable six-part series by Frank C. Ellison, entitled "The Art of Model Railroading." Ellison had written dozens of articles during the 1930s and early 1940s for *Model Builder* and for *Model Railroader* about his O scale Delta Lines that had set the standard for realism during the unscenicked "Plywood Central" era of trains.

His enduring appeal was his conception of the railroad as a dynamic, romantic transportation system. He metaphorically saw a model railroad as a stage play that presents "the drama of railroading in which the tracks are the stage, the buildings and scenery are the setting, the trains are the actors, and the operating schedule is the plot."

Perhaps his greatest accomplishment was in improving our self-image (I was embarrassed as a teenager to admit that I still "played with toy trains.") In this series of articles Ellison assured adults that building a model railroad was a goal worthy of their best efforts.

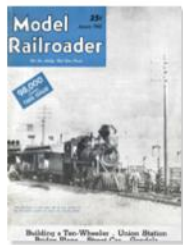
John L. Frank, Ann Arbor, Mich.

## October 1944

My all-time favorite is the October 1944 issue. I was 12 years old and visited the magazine-barber-smoke shop in the lobby of a hotel in Modesto, Calif., looking for the latest model airplane magazines or *Popular Mechanics*. One day I noticed the October 1944 issue with a photo on the cover of a hand holding a model of a Victorian signal tower. I bought it and eagerly read the magazine over and over.

What really caught my eye was page 437 [Pages were numbered consecutively throughout the issues in a year then. – Ed.] It had photos of old-time locomotives and cars in something called "Ridin' high! On the narrow gauge." Little did I know that page would lead me into a life of publishing magazines on narrow gauge and finescale modeling. I started *Finelines* in 1963, and merged it into *Narrow Gauge & Short Line Gazette* in 1975. Some 51 years later, my wife and I still edit and publish the *Gazette*.

Bob Brown, Los Altos, Calif.



## January 1948

The January 1948 issue had the article by John Allen about his first very small Gorre & Daphetid RR layout, which impressed me greatly.

I was interested in America and railroads, but at the time living in Britain with postwar austerity and no dollars. You were not allowed to buy American magazines, but a school friend had relations in the United States who sometimes sent him a copy of MR, and occasionally he lent it to me.

A few months later I sat my Scottish School Leaving Exams and the topic of the English essay was to explain the attraction of your favorite pastime, so I gave my effort the title "Model railways as an art form" and contrasted the urban congestion of the Scottish modeler Edward Beal, the rustic charm of English modeler John Ahern, and the Wild West of American John Allen.

When I was in America I visited, mainly by train, 38 of the then 48 states, partly because of a cover story in *Trains* magazine that you could go to and return from the West Coast by round

about routes for \$100. I later described my travels in *Roundhouse*, the magazine of the British Region of the National Model Railroad Association.

My previous almost-completed layout is a tourist railway built in the grounds of a German castle using the Gorre & Daphetid track plan – an overlapping oval with a branch off the high point. It is called the Blutigneiderlagebahn, which is my effort at translating Gorre & Daphetid into German!

Alistair Neill, Edinburgh, Scotland

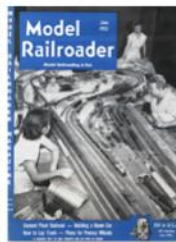
## April 1952

The April 1952 issue contained two April fool items that I've remembered over the years as stand-out tongue-in-cheek offerings.

The first was a description of a planned railroad (HO) that would run from New York to Chicago and then to the West Coast through the Rockies, all on a platform less than 4 x 8. Coo Coo Lines was the name of this proposed freelance effort. Wow!

The second article told of the efforts of a devout modeler to rid his home's basement of annoying support columns by sealing and pressurizing the space. Air pressure would hold up the overhead floor, allowing track and trains to go anywhere with no steel columns to avoid. The only drawback was wearing the diving suit necessary to occupy room. Hard to work in the suit's gloves.

Roger Thomas, West Windsor N.J.



## June 1952

My favorite is the June 1952 issue. I believe it's the first one that Varney had an ad on the back cover with a picture of John



**1934** – First issue. Founder Al Kalmbach thought a circulation of 272 readers, "was pretty good," as there were only about 1,000 known model railroaders in the country then.

**1934** – Linn Westcott enters the magazine's first track-planning contest. He wins first place and his drawing is published in June's issue. He was the only entrant.

**1935** – Al Kalmbach and others establish the National Model Railroad Association. The first convention is in Milwaukee; about 75 hobbyists attend.

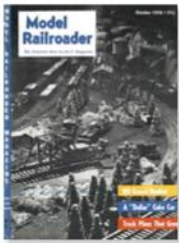
**1935** – Mantua Toy and Metal Products' first ad appears in *Model Railroader*, stating that Mantua had a complete machine shop and was interested in manufacturing model railroad parts in all scales.

**1936** – Gordon Varney forms the model train company that bears his name. The company's early success is attributed to its reliable 6-volt motor, small enough for HO trains.

Allen's Gorre & Daphetid RR. I was in high school, and looked forward to each copy from then on. His mastery of photography was outstanding.

That year I sold all the Lionel equipment that my dad had running under the Christmas tree since 1936 and started in HO scale. In 1952 I wrote a letter to John and asked if we could visit his Monterrey home. He said yes, and my folks and I drove down from San Jose. He even ran my dockside switcher around his layout. I've been building railroads ever since.

*Bud Feasel,  
Redding, Calif.*



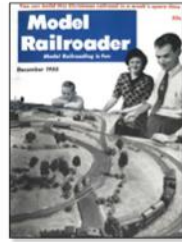
## October 1954

My all-time favorite issue is October 1954. That issue contains the winning article of MR's "You're an Author" contest; the first of a three-part article by H.C. Quick on building a very complicated rock products bunker.

At the time I was a junior in high school, and model railroading, it was not part of my life. However, that issue of *Model Railroader* was the deciding factor that made model railroading the hobby I would carry with me for life.

There was just something about that wonderful timber structure that called out to me, and indeed mining and timber structures are at the forefront of my On3 layout to this day. Using that issue as inspiration, I went on to become NMRA's Master Model Railroader no. 44, and was also inspired to write, to this day, some 70-plus articles on the mining industry and the hobby. Yes indeed, several of those articles have been published in *Model Railroader*.

*George Konrad, Beaumont, Calif.*



## December 1955

John Allen's "Aging and Weathering Cars" in the December 1955 issue showed us exactly how to transform shiny, unrealistic plastic into rolling stock that looks like the prototype. Those pages transformed my railroad and the hobby of model railroading.

John had studied photography professionally and MR illustrated each step of the way with clear photographs. I didn't even notice that they were all black-and-white. The article was that good.

A constant theme all along has been: "Don't tell us, show us." As MR and model railroading have evolved, professional graphics and color photos have helped show us the way forward, so we can get professional-looking results without being professionals.

*Harry Meislahn, Winnetka, Ill.*

## January 1956

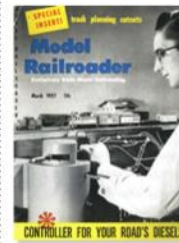
The January 1956 MR contained instructive articles by three of my favorite modeler/authors: Frank Ellison, John Allen, and John Armstrong.

Page 10 contained an opportunity for MR readers to subscribe for three years for \$9.00, and since I received my Air Force promotion from 2nd Lt. to 1st Lt. in December, I was able to send a check for 10 years (\$30 – no small sum: more than \$260 in today's dollars). Some weeks later, I received a letter returning my check, with what was a just-initiated offer for a life subscription, \$60 (More than \$520 today). Since my monthly pay at the time was \$259.23 a month, this required a bit of "deep thinking," especially when a new baby daughter had arrived February 1st. My wife said, "Go ahead,

we can scrimp in some areas." This same sweetheart financed my travel to Milwaukee in 1984 to celebrate MR's 50th. When I mentioned to MR editor Russ Larson that I felt I should back up to the mailbox to retrieve my magazine, he told me that Al Kalmbach in 1956 was raising money to expand the company, and your \$60 certainly assisted in making Kalmbach the powerhouse it is today.

Returning to my "three favorite guys," my Air Force career enabled me to meet some of them. While en route to the West Coast from Florida, Frank Ellison hosted our family at his home, with an "operational tour" of his Delta Lines! When stationed in the Washington, D.C. area, I was fortunate to tour John Armstrong's Canandaigua Southern RR. In 1976, I was assigned to Monterrey, Calif. – too late, however, with John Allen's death in 1973 and his home destroyed by fire several days later. However, he and his Gorre & Daphetid have remained an inspiration for me as well as generations of model railroaders.

*Bob Brubaker, Tucson, Ariz.*



## March 1957

The March 1957 issue of MR opened up a whole new world for a pre-teen model railroad enthusiast, a world that is still bright and shiny and new for this senior who is passing on the enthusiasm and practical hands-on building skills to a generation of grandchildren.

*John "Casey" Sterbenz,  
Eldersburg, Md.*

## October 1957

The October 1957 issue had the article on operations by Doug Smith, which

**1938** – British manufacturer Hornby introduces its OO scale trains under the name Hornby Dublo, a play on words for "double O." The 1:76 scale trains run on HO track.

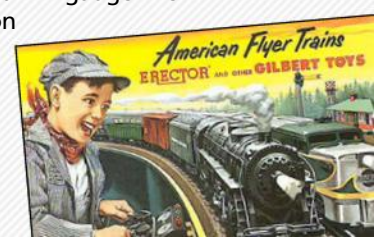
**1939** – Walthers, in business since 1932, brings operating layouts to the New York World's Fair, helping to popularize model railroading.

**1942** – The federal government effectively shuts down the model railroad industry by declaring that strategic materials such as steel, brass, and copper be used only for products essential to the war effort.

**1943** – Kalmbach Publishing Co. moves to 1027 N. Seventh Street in Milwaukee. *Trains* magazine editor David P. Morgan later fixates on locomotives numbered "1027."

**1945** – Wartime paper rationing forces restrictions on new subscriptions to *Model Railroader*. John Allen's first cover photo is on the December 1945 issue.

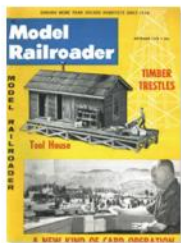
**1946** – American Flyer trains, produced by the A.C. Gilbert Co. in Connecticut, introduces its S gauge line.



changed my hobby life. I was only 11 and couldn't have put it into words, but the article hit exactly what interested me about railroading and outlined a way to make it come to life on a model railroad. I wore that issue out.

While in high school, I built a layout based on Doug Smith's Brook Valley and used his original card system to operate. My parents generously lent me the dining room for two years for that layout. That seemed only fair, since they had given me the subscription to MR that started it all! I've been working on my current railroad for over 30 years (it's the journey, not the destination) and it's all about operation. Doug Smith and Tony Koester are my two biggest influences, with that 1957 article still reread frequently.

*Laurence Irvin, Palatine, Ill.*



## September 1958

My favorite MR issue is the one that inspired me to end up becoming a lifelong model railroader like my father. That issue would be September

1958 because of the article on Jack Work's scratchbuilt HO model tool house. My father built it along with other models defined by Jack Work, such as the sanding tower, and I was fascinated by them.

Thank you *Model Railroader*.

*Glenn E. Bonney, Macungie, Pa.*

## July 1959

This is an easy choice. The July 1959 issue was my first. I was in junior high school and in bed with the mumps.

The issue pretty much set my course. I made a model of the MoPac switchman's shanty which resides on my cur-

rent layout, along with another dozen homemade creations in string and cardboard fashioned from plans and articles in subsequent issues.

Perhaps the authors, on seeing my model railroading work, would decide that the old saying "Imitation is the sincerest form of flattery," doesn't always apply. At any rate, the efforts have given me great satisfaction.

*Tom Chatton, Wauwatosa, Wis.*

## October 1959

My favorite issue is October 1959. I bought it at the hobby shop I biked to with my friends. The cover story is "Modeling the *Pioneer Zephyr*" by Jack Work. The cover photos enticed me to dig into the entire issue. Now, it's a treat to visit the original full-scale train in Chicago. Back then, it was just a dream for me.

The concept for making the train was to use existing extruded metal parts (unpunched Mantua car bodies), existing running gear, and then to finish up with formed sheet-metal parts we could make ourselves. It was the days before zooming and scaling plans was something we do at a copy center or on a computer. That meant the scale plans and drawings were especially helpful. The instructions were clear and there was a complete bill of materials.

In those days, scratchbuilding was an established part of model railroading. This article bridged the gap between pure scratchbuilding and kitbashing.

*William P. Porter  
Loxahatchee, Fla.*

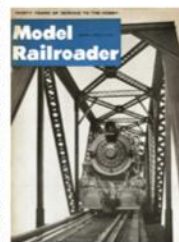
## March 1963

The March 1963 issue had it all. But it was the picture of the Gorre & Daphetid on page 26, "This could be your pike"

(using the dated term for layout) that got to me! There, a Revell figure, just like the ones I had on my layout, gazed at John Allen's magnificent modeling, and that picture convinced me of the worth of model railroading.

A few years later, I called John Allen and visited the G&D; my first layout visit! I was 16 years old. I cannot recall the second layout I visited but it was probably a severe disappointment.

*Charlie Getz,  
NMRA president, San Carlos, Calif.*



## April 1964

In April 1964, Bob Hawley wrote a fabulous and unique article called "A Civil War Layout." Looking back it was quite ambitious.

He wrote about "Basic planning ideas" to "The layout plan" and even some ideas under "Operation and rolling stock." His railroad required four 4 x 8 tables plus one 2 x 4.

This issue is so worn the cover pages disintegrated; I have since kept it in a plastic sleeve. To this day I will on occasion pull it out and do a nostalgic read. It was so inspiring that nearly 50 years later I have completed my dream layout, 36 x 24 feet, depicting the Western & Atlantic RR, summer of 1863.

This article also planted the seed which began a movement resulting in the Yahoo group, Civil War Railroads and Modeling, plus the American Civil War RR Historical Society, both of which I am a co-founder along with D.C. Cebula, who, among other contributors, have become very good friends. All due to one unsuspecting article in a model railroad magazine, 56 years ago. Oh my, am I getting old! But gracefully, I trust.

*Thom Radice, Long Branch, N.J.*

**1947** – Bachmann Bros., a manufacturing company with roots dating to 1833, sells a miniature plastic fence designed as a Christmas tree decoration. It is the start of Plasticville.

**1948** – Irv Athearn begins producing HO scale models and soon acquires the Globe Models product line.

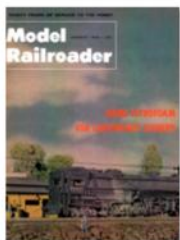


**1949** – Atlas Tool Co. (now Atlas Model Railroad Co.) opens for business based on the sales strength of its HO scale track.

**1951** – Kadee's first knuckle coupler, the "K series," is developed. It evolved into the knuckle couplers scale hobbyists use today.

**1952** – *Model Railroader's* first "project railroad" series, The Pine Tree Central, is published starting in the December 1952 issue.

**1952** – The NMRA seeks compatibility in HO couplers, ultimately developing the X2F "horn hook" model. The NMRA never adopts it as a standard, but nearly all manufacturers use it anyway.



## January 1965

I've picked out January 1965 as having a few favorites for me, including "The most-est track in the least-est space." The issue has Linn Westcott as the editor and there is an article on the Ma & Pa, one of my favorite project layouts and one I studied intensely.

Other highlights include the conclusion of "The art of model railroading" by Frank Ellison with an operating scheme involving car cards, an excellent article on motor control by Westcott and an article on building a pulse-power throttle. Cutting-edge stuff for the time. Also of note in relation to cutting edge was that MR was predicting the future (now the present) by having a weathered locomotive on the cover and an article on using Styrofoam for scenery. Those two topics are hot right now, 50 years later.

*Rev. Greg Williams, Canterbury, N.B.*

## December 1965

There have been many great issues of MR over the years. Thank you Bruce Chubb, John Armstrong, and many others. But the one issue that I come back to for inspiration is December 1965, which started the Sierra Pintada Project. This little line just is a great basis for a small project or can be expanded to be part of a much larger project. It's also the junction between a short line and a main line.

Someday my larger empire in the basement may have to go (Southern Pacific over Donner Pass) and I will use the Sierra Pintada as the blueprint for keeping me occupied til whenever. By the way, the cover price back then was \$0.50.

*Patrick Stanley,  
West Chester, Ohio*

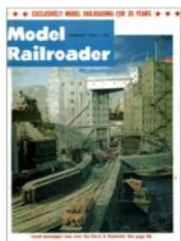
## December 1967

My favorite issue of MR is December 1967. I was 11 years old when it came out, and it was probably only the second or third issue of the magazine that my dad bought for me.

It's Bill Baron's beautifully illustrated "Track plan for a first layout" that continues to inspire me even all these years later. I don't know how many variations of his Pigeon Creek & Thawville I have drawn over many years of armchair model railroading; I might even build a version one these years!

I've thumbed through my original copy so many times that it was in danger of falling apart, so about 10 years ago I bought a copy in pristine condition. I keep it handy with my other frequently-used model railroading references.

*Tom Marsh, Houston, Texas*



## January 1969

My favorite MR was January 1969. I was a 16-year-old subscriber who had not seen many real model railroad layouts in person at that point, and

was completely blown away by John Allen's pictures of his Gorre & Daphetid. I remember studying the pictures and their captions several times. It was another era, and I was also impressed and glad that the magazine devoted that many color pictures to that one layout.

The G&D was a lot different than my American Flyer layout in the basement and that article helped convince me to go down a more "scale" path. I've stayed with S scale, but now model mostly in Sn3 and have a S/Sn3/Sn2 layout under construction in the basement.

*David Heine, Easton, Pa.*



## January 1970

There have been many favorite articles, authors and pictures in MR. But by far, my favorite issue is January 1970. The cover shows a nice color photo of a wharf scene from John Allen's Gorre & Daphetid RR with an article on the car ferry *Anabel*, and I studied the layout illustration by Bob Wegner on page 60 for hours.

So, why is this my favorite issue? My parents gave me a subscription as a 12th birthday gift in October 1969. This issue was the first and I must have read it a thousand times before I received the February issue. I still have it, as well as every issue since.

*Mark R. Taylor, Cypress, Texas*

## February 1970

I can easily claim my all-time favorite cover photo was on the February 1970 issue, picturing Ben King's Timber City station. This was just before I started my regular subscription, and I bought this issue while hanging out at the hobby shop while my mother shopped at the department store nearby.

I still can't explain what captivated me so, but I stared at that photo and read and reread the article inside on how to scratchbuild it the whole way home, and for countless hours in subsequent years, to the point where the cover was worn out and had to be taped back to the magazine. My first attempt to build a copy in HO scale was never finished, but about 20 years later I did complete one in S scale, which remains my favorite scratch-building project.

*Eric Hundertmark,  
Collegeville, Pa.*

**1953** – Lionel Trains hits its zenith as the largest toy maker in the world.



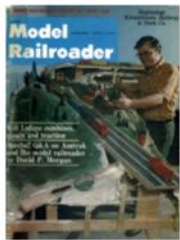
**1954** – Lifoam Industries produces extruded foam ice chests. To offset its primarily warm-weather sales, it produces extruded-foam model railroad tunnels under the name Life-Like.

**1957** – The name Tyco (Tyler Manufacturing Co.), is used for Mantua ready-to-run train sets, and would for several decades supersede the name Mantua.



**1958** – Company founder Bill Walthers retires, handing the reins to his son Bruce, who would do the same for his son Phil in time.

**1961** – Linn Westcott, who had been with Kalmbach Publishing Co. since the 1930s, is named editor of *Model Railroader*. His hobby innovations still resonate with readers today.



## January 1972

When I saw your editorial asking readers which issue was their favorite, I immediately thought of January 1972. This featured the first part of Russ Larson's HO project railroad, The Kinnickinnick Ry. & Dock Co.

Around 1971 when I had my first teaching job, I had an apartment with enough space for a layout. Then, when I saw the cover of that issue, I knew exactly what I wanted. It was the first project layout I can remember that didn't have a loop for continuous running and instead focused on switching. I used the article to build a very nice layout.

I believe there was some criticism concerning Russ's choice of 1/4-inch plywood instead of 1/2-inch for the sub-base. I used the 1/4-inch and had no problems with it.

I stapled together all of the magazine parts covering this project and I referred to them when I built later layouts. That issue of MR introduced me to good layout construction, more realistic track, and more realistic operation.

*William DeBuvitz,  
Mendham, N.J.*

## July 1973

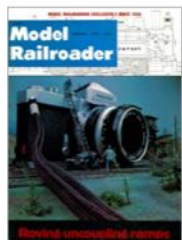
Wow! I was stunned to see the thumbnail of the July 1973 issue in Neil's column, because that is my favorite issue as well.

That was the first issue I ever purchased and I still have it. Bruce Chubb's cabooses really captured me, and I pathetically tried to emulate some of what he did on my Tyco caboose – I was 12 years old. Little did I know that one day I would live across the street

from Bruce and help build and operate his Sunset Valley!

I still love operating with one of those venerable cabooses even though he has many more current ones available. Here's to Bruce Chubb, one of the MR greats and a fantastic mentor!

*Dirk Start, Grand Rapids, Mich.*



## August 1973

I was a kid and one summer I had been thumbing through a lot of different model building magazines at a local smoke shop, which usually ended with me getting chased out by the owner because I didn't actually buy any.

That all changed when I wandered in one day and saw the August 1973 issue. Ben King's cover photo leapt out and grabbed me. I scrounged up 60 cents and I'm sure I nearly gave the owner heart failure when I plopped my change on the check-out counter.

You might say I was attracted by the King, but stayed for E.L. Moore. I was completely captivated by his Bunn's feed and seed plant article. It was an interesting, low-cost project that I could build using stuff I either had at home or could easily – and cheaply – buy at nearby stores. That article began a model railroading obsession. I eagerly bought new issues and was glad to see new E.L. Moore articles.

Looking back on that issue after many years, I see it also contained many high-quality articles that the younger me didn't fully appreciate. Although I wasn't completely conscious of it at the time, I think the overall high quality and variety of that issue was what kept me coming back over the months and years.

*Jim Lowe, Ottawa, Ontario*

## June 1976

The June 1976 issue is my favorite.

The article about one of the largest home layouts in world (page 52) located in Curacao, set the benchmark for scenery modelling for me.

The details of Great Northern HO scale layout where amazing to me as a teenager. How could someone have the skill and patience to create such a detailed model railroad?

My goal after reading the article was to have a detailed layout like Mike Nixon's. The impression I got from reading Jim Hediger's article – scenery sometimes is more important than having track covering the layout – is what made it for me.

Over 40 years later, I can say I have such a layout.

*Ronald Adam, Toronto, Ont.*



## July 1976

How can you not like the old issues where Thornburgh scratchbuilt steamers, or the dollar car series got the juices flowing? Or project railroads

such as the one based on the Ma & Pa RR appeared?

But, the one I seem to go back to is the July 1976 Bicentennial issue. The cover is superb and of a subject not covered very much – early railroading.

Gordon Odegard's article "America's first common-carrier railroad – the Baltimore & Ohio" was outstanding. In addition, the article by Frank Ellison about the art of model railroading is simply timeless, perhaps even more relevant today with the rise of operations and use of electronics unheard of in his day.

*Jim Kehn,  
Pickerington, Ohio*

**1963** – Linn Westcott writes a story describing "L-girder" benchwork in the September 1963 issue. The method becomes a hobby standard.

**1964** – January's issue features a review of the Arnold Rapido line of 1:160 scale trains imported from Europe. The term "N scale" is not used in the review, but this is the start of today's N scale.

**1968** – Eberhard and Wolfgang Richter introduce large-scale LGB Trains, invigorating the hobby of garden railroading. The first LGB locomotive is a small Austrian 0-4-0 named "Stainz."

**1973** – Perhaps the most influential model railroader ever, John Allen, dies in January at age 59 from a heart attack. His famed Gorre & Daphetid RR is tragically destroyed by fire a few days later.



**1973** – Kalmbach reluctantly stops printing its own magazines in-house and turns to outside printing companies that can do the job more economically.

## October 1976

I'd joined the U.S. Air Force on Sept. 1, 1976. We'd progressed in our training and during our fifth week (six weeks in basic training), we donned our class A uniforms and were transported to downtown San Antonio, Texas, for our much-dreamed-of town pass.

I was missing my parents, my dog, my home, and yes, my 4 x 8 HO railroad I'd constructed from one of your books. I went to the first phone book I could find to look for a hobby store. I didn't know exactly where I was, didn't understand the transit system, and finally my time was *really* limited. Just as despair was setting in, I found a news store and there on a shelf was the last copy of the October 1976 issue. I bought it and headed for a park to sit under a tree and absorb every word and image while I waited for the bus to return.

Many of my fellow airmen went to the zoo, the space needle, or the Alamo. I stayed in the park and dreamed of being back at the throttle of my favorite Athearn Union Pacific GP9.

My next base was to be Chanute (Kans.) Air Force Base where they had a great model railroad in their rec center!

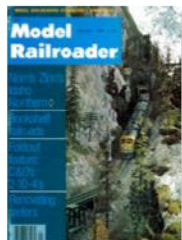
*Bill Kight,  
Smyrna, Del.*

## December 1976

My favorite is December 1976 because it contained the influential article "The NTrak story" by Jim Hediger. I switched to N in October 1975 on my own, but Jim's article confirmed the reasons why I did and a lot more. I looked at those big scenes with broad curves and figured everyone would switch to N, because how could anyone be happy with sharp curves on mainline trains? The revolution is still in process, but the article

mentioned the new NTrak Newsletter. I immediately signed up and over the years met many who read the article and subscribed because of it.

*Kirk Reddie, Editor, N Scale  
Railroading Magazine, Seattle*



## January 1977

Without a shadow of doubt, it has to be January 1977 for only one article: Robert J. Lutz's "Bookshelf Railroads."

My reason is simple: in one fell swoop it altered the discourse on what a model railroad is and can be. Thus:

1. It introduced to me the idea of a sectional railway, built one module at a time, as time, space, and resources allow. Suddenly, I didn't have to think empire. I could think about a framed picture on the wall with moving trains.

2. My shoe-stringing pocket wasn't a limitation any more. I was hard up, but now, that did not restrict my aesthetic appetite. I could fund this project 4 feet at a time!

3. It redrew the boundaries on where a model railroad can be located and how large it need to be. My little rented flat was suddenly not a limitation to my dreams anymore.

4. It ended the fear that you cannot be a model railroader till you have a semi-permanent home to house it. I changed homes every year or two, and suddenly now, my trains could travel with me.

*Ranjeev C. Dubey  
Gurgaon, Haryana, India*

## May 1978

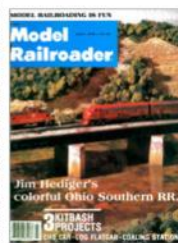
My favorite issue is, far and away, May 1978. The cover was nothing out-

standing, and inside was a typical mix of interesting articles. But what will always make it special is that it was my first subscription copy of MR I ever got in the mail. I was in my late 20s and had only discovered model railroading earlier that year, thanks to the book *Scale Model Railroading* by Leslie T. White I'd found in the "around the tree" train-set box my dad kept in the basement. The book mentioned the magazine and I immediately subscribed.

When that issue arrived, it was like magic: a whole, entire magazine dedicated to this cool new hobby! I just stared at the cover for a long time before opening it, trying to hold on to that thrill of anticipation. Then, each and every month for the next 39 years that same magic would appear on my doorstep.

Even though I've since read every issue back to the early 1950s, something about that May 1978 MR will always remain very, very special.

*Gerry Leone,  
Minnetonka, Minn.*



## July 1978

I have to say my favorite issue is July 1978. That was the first issue I'm aware of that featured Jim Hediger's Ohio Southern RR. Here was a freelanced model railroad that looked like it could be part of the Detroit, Toledo & Ironton RR. The layout itself looked like it was lifted right out of southern Ohio. A few years later Jim would raise the bar again, by building a bigger, double-deck version of the Ohio Southern, but it was July '78 issue that sold me on prototype freelancing.

*Richard Shirey,  
Baden, Pa.*

**1976** – Construction starts on the first Milwaukee, Racine & Troy RR, the staff's employee club layout, which serves as a test bed for model railroad products.

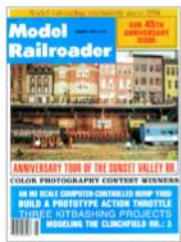
**1981** – *Model Railroader* founder Al Kalmbach dies of complications associated with Parkinson's disease at age 71.

**1984** – Märklin, with development help from Motorola, debuts a digital control system, among the first in a growing field of digital control components.

**1985** – Tony Koester's column, *Trains of Thought*, makes its first appearance in the November issue. Tony writes about his hobby buddy, the influential Allen McClelland.

**1986** – MR's first look at George Sellios' captivating Franklin & South Manchester RR is published in April's issue. Thousands of modelers are inspired by the look and feel of George's railroad.

**1989** – *Model Railroader* moves to 21027 Crossroads Circle, Waukesha, WI. As the first occupant of a new office park, the address 21027 perpetuates the tongue-in-cheek fixation with "1027."



## January 1979

My favorite edition remains one of the first I received way back in January 1979. *Model Railroader* celebrated its 45th anniversary that month,

and, as a 13-year old, I was taken with a full-color tour of Bruce Chubb's Sunset Valley and a kitbashed AHM dome coach. Chubb's narrative, complete with a marching band at a welcome ceremony, a trip on a local, standing lineside as a 4-8-4 rolled past with a passenger train, and visit to the division office underscored to me then, as now, that a well-executed model railroad is a venue for effective storytelling.

Decades later, I still look forward to MR arriving in my mailbox each month, because what was true in January 1934 or January 1979 remains true today: Model Railroading is Fun!

*John Perry, DeWitt, Mich.*

## March 1980

My favorite issue is March 1980 featuring passenger train operation on the Cat Mountain & Santa Fe. It means a lot to me as it was the first issue that I ever bought and I still have it, taped-on cover and all. I was 19 at the time and just getting into more serious scale modeling.

My current layout at home even has scenery and a backdrop painted by my wife and I based on the scenery depicted in that article on the CM&SF.

*Ken Mason, Kenner, La.*

## July 1980

My personal favorite is July 1980 issue featuring Bruce Goehmann's wonderful Midland Electric.

I had the pleasure of meeting Mr. Goehmann a few years ago at Trainfest. When I told him of what the issue and subsequent traction articles he authored had meant to me he smiled and said "Now don't blame me!" Oh no sir, it's all your fault and I mean that in the most sincere way.

*Dale Windhorst, Chicago, Ill.*

## February 1983

My choice is February 1983 for the "Industry comes to the Jerome & Southwestern" article. This was one of the first issues of MR I came across being a long-time reader of UK magazines. The J&S series of articles was so different to what I was used to, and over the years since, I've particularly enjoyed the project railroad-type articles, the more recent Virginian series running a close second.

*Ted Roylance, Backwell, England*

## January 1984

My favorite issue is the 50th Anniversary issue from January 1984. I loved the fantasy article of restoring a "lost" *Hiawatha* locomotive then taking it on a "tour" around the country. The various layouts visited were stunning to see.

*Dan Rawers, Sugar Grove, Ill.*

## February 1986

My favorite issue of MR is February 1986. In that issue you started a multi-part series on a Z scale Western Pacific-themed layout.

The layout disappeared for some years, then was for sale. I got to see it, I believe it was at the Z scale convention in Medford, Ore.

*Malcolm Cleaveland Fayetteville, Ark.*

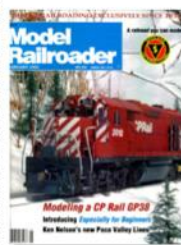
## January 1988

The January 1988 issue features part one of the Carbondale Central project railroad. It's a beautiful urban dockside layout designed to take up just 8 x 8 feet in the corner of a room, and detailed to perfection by Malcolm Furlow. It opened my eyes to what was possible in a small space, but there was something else a bit more personal.

The cover shot won me over as it depicts a father and son operating the layout together. At the time my wife and I were 14 months married and expecting any day, our first child (a boy, now 28). Though like many of my long term projects, he too went a bit over schedule, arriving at the end of February.

A lot of guys tell stories about the moment they found out they were going to be a father, some don't completely grasp what that means until they actually hold the child in their arms. But that cover shot? THAT was when the full sense of my fatherhood hit home.

*Jon Stokes, Holland Patent, N.Y.*



## January 1991

The Action Red CP Rail GP38 set in a snowy winter scene provided the perfect cover for the January 1991 issue of MR.

Inside that issue are some of the best articles MR has ever published, including my all time favorite on Ken Nelson's Poco Valley Lines. In the article, Ken gives a wonderful description of his design considerations, construction techniques, and operations.

On numerous occasions I have also revisited the article on the Spokane International RR by Jim B. Davis. Jim's study of a railroad's history, his gather-

**1993** – Tyco exits model railroading; its sibling company Mantua closes in 2001. The Mantua name is later revived by Model Power.

**1993** – MR publishes a story about the NMRA's proposed Digital Command Control standards, based on developments by Lenz Electronics of Germany and already in use in Europe.

**1994** – *Model Railroader* reviews its first Lenz Digital Command Control system in the November issue.

**1996** – SoundTraxx introduces DCC decoders with locomotive sound effects. Twenty years later, most DCC-equipped locomotives come with sound.

**1998** – Bachmann introduces an O scale steam train designed to run on HO track, kick-starting the interest in On30 (also known as On2½) gauge model railroading.

**2004** – Hobby distributor Horizon Hobby acquires Athearn, one of a number of changes in the hobby industry as first-generation entrepreneurs retire and sell their companies.



ing of prototype photos, and his drawing for a multilevel track plan have inspired my own similar efforts.

A couple of years ago I acquired a second copy, so now I can share it with friends without fearing that I will never see it again.

*Ted Black, Brantford Ont.*



## December 1993

I select the December 1993 issue, and here's why: It was the very first issue of MR (or any other model railroad related publication) that I ever

purchased. It was the very first time realizing that Märklin, Lima, or Tyco were not the only brands around. I was in awe reading the ads, articles, and looking over and over at the pictures, trying to absorb everything at once – so much information, so much to learn.

Several articles caught my attention but “Keep on truckin’” by Lucien Wiss and Bernard Frontanau got me started in building my very first module, a raw representation featuring a railroad bridge over a highway.

Twenty-three years and 276 issues later, it's always nice to go back to that very first issue, the one that started a long lasting relationship, not only with the hobby, but with *Model Railroader*.

*Pablo Moya, Cartago, Costa Rica*

## January 2000

The late Andy Sperandio was the editor of MR in January 2000. This issue boasted over 200 pages, filled with great articles and advertising. For me, it was a milestone, too. MR was publishing readers' opinions, and it was flattering that

the staff chose my article as my initiation in the world of model railroading publications. This led to subsequent articles and even a Trackside Photo in MR, various National Model Railroading Association publications, and the Thousand Lakes Region quarterly newsletter, *The Fusee*, which I edited for three years.

I appreciate everything I've learned in MR up until now and continue to gain.

*Alan Saatkamp, Shawnee, Kan.*



## April 2001

My all-time favorite issue of MR is April 2001. The feature article was the first place winner of the “Small Layout Contest.” To my

amazement, it was ME! I'd been modeling in HO scale since the early 1960s and had long dreamt of being published in MR. But I never had anything noteworthy to write about.

Then, in March 2000, MR announced their contest. A light came on. I figured I'd become fairly proficient in creating credible model railroads in small spaces. Living in Southern California where basements are a rarity, my train rooms were never larger than 11 x 11 feet. I was then modeling the freelanced “Georgia Southern,” an 8 x 8 layout based on the Georgia RR. I decided to give it a shot and began a building and photographing frenzy, finishing and sending the article with only one day to spare.

A few months later I received an envelope from MR containing a letter from editor Andy Sperandio saying that I had won the contest. Well, I let out a “Whoop” heard in the next county. Finally, in April 2001, there it was ... me and my layout in *Model Railroader* and on the cover, no less. Wow! What a

thrill! Since then I have had other articles published, including another MR contest winner. But nothing, absolutely nothing, could match the sheer joy and excitement of seeing that first article in *Model Railroader*.

*Steve Flanigan, La Quinta, Calif.*

## January 2009

For me it's the January 2009, 75th Anniversary issue. Let's start with the cover, an atypical MR cover shot of the Beer Line project railroad taken from above with a solid black backdrop.

There's a lot of super articles and photography (Trackside Photos was excellent) in this issue, but the “kicker” for me was the outstanding coverage of Allen McClelland's second Virginian & Ohio layout with photos by Paul Dolkos and articles by Tony Koester and Allen McClelland himself.

*Walt Herrick, Huntley, Ill.*



## September 2014

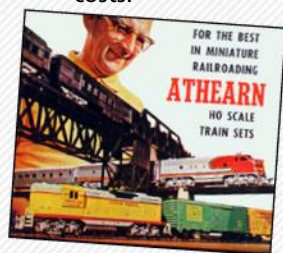
Over the years I've had four layouts, with none of them ever becoming close to being finished and some being started over.

My latest layout is only two years in, but it has steadily progressed further and at a quicker pace than any previous, much to the credit of the September 2014 issue, which contained the article “12 Tips on building your layout faster.”

I've read articles in that issue over many times, and the 12 steps it listed not only helped me set a plan, but also to stay on that plan, and progress faster and further with my layout than I'd ever done in the past.

*Jim Evans, Bridgewater, Nova Scotia*

**2009** – Athearn discontinues its Blue Box kits citing increased costs.



**2013** – Model Railroader Video Plus is created to meet the needs of contemporary hobbyists who look to videos on the Internet for information.

**2014** – *Model Railroader's* All-Time Archive, the first on-line magazine archive in the hobby, opens for business with issues from today back to 1934.

**2016** – ScaleTrains.com joins newer manufacturers such as ExactRail, Tangent, Rapido, and others as model railroading firmly moves forward into the 21st century.

**2017** – MR publishes its 1,000th issue in April. MR and MR Video Plus now reach tens of thousands of enthusiasts. Al Kalmbach would probably still think that's “pretty good.”



## How do I read a scale rule?

**Q** Has MR ever written a detailed explanation of how to use an HO scale rule? If so, where would I find it? If not, I would like to see one.

*Alan Jenkins, Frisco, Texas*

**A** Though you may have a scale rule that's exclusively HO, mine has multiple scales on it – HO, O, and S on one side (with the O and S scales combined), N scale and regular, full-scale inches and millimeters on the other. And no matter which scale you're measuring in, all scale rules work the same way.

You'll see in the photo at right that there are more tick-marks and numbers to the left of the zero mark on the HO scale. That's because to put all those fine marks between each foot on the ruler would make it really hard to read. Instead, each scale foot is divided in quarters (that's 3"). For anything that doesn't fall on those precise intervals, put one end of the item being measured on the nearest 1-foot mark and read the inches to the left of the zero. For example, in the photo, our HO scale boxcar door is 6 feet, 5 inches wide.



To make the tiny markings easier to read, this scale rule has the inch marks on the far end of the zero mark. This HO scale boxcar door is 6'-5" wide. *Steven Otte photo*

For more on how, when, where, and why to use a train horn on your layout, check out Andy Sperandio's "The Operators" column for June 2007. And if you're a *Trains* magazine subscriber, you can watch BNSF Ry. and Union Pacific trains in Rochelle, Ill., by signing on at <http://trn.trains.com/videos/webcams/2014/09/bnsf-and-union-pacific-in-rochelle-il>.

**Q** What is the difference in Peco Electrofrog and Insulfrog turnouts, and when would you use one or the other? I'm planning an HO industrial switching railroad and would like to know which turnouts would be best.

*Rich Hindy, Jonesboro, Ga.*

**A** Though the two kinds of turnouts may look similar from the top, they can be identified by looking closely at the frogs (the place where the rails cross). Insulfrog turnouts have a short, plastic-filled gap in the rails where they cross; Electrofrogs have an open air gap in the closure rails, farther down toward the points. (These gaps are bridged by wires on the bottom of the turnout.)

The main difference between the two types is in how the closure rails and wing rails are powered. On an Electrofrog, the frog is electrically connected to both closure and point rails, and gets its power from whichever stock rail the point is touching. An electrical short can occur if an out-of-gauge wheel bridges the gap between the open point rail and the adjacent stock rail.

On an Insulfrog, the points and closure rails are powered from their adjacent stock rails. This makes shorts between point and stock rails impossible; some say this makes Insulfrog turnouts more "DCC-friendly." However, shorts can still occur if a wheel bridges the spot where the rails meet at the frog. And engines with short wheelbases or poor electrical pickup may have trouble crossing the unpowered frog.

The best way to avoid short circuits at turnouts is to use an Electrofrog (or a similarly configured turnout of another brand), cut the jumper wires on the bottom of the turnout to isolate the frog and closure rails, wire the points to get power from their adjacent stock rails, and wire both closure rails to the frog. Then power the frog and closure rails from a device that will change polarity to match the route chosen, like a Tam Valley Frog Juicer. Associate editor Eric White

**Q** My brother-in-law has a permanent train display on a shelf that runs along three walls of his living room. It's a small G scale train that runs from one end to the other (total travel distance about 40 feet) and then reverses automatically. When it reaches the other end, it reverses again. There are no loops. What product do I need to support this on an HO scale? Everything I've found regarding auto reversing involves a loop.

*Robert Fuller*

**A** What you're looking for is called an auto-reversing circuit. Miniaturics, Circuitron, Dalle Electronics, and Azatrax make them, among others. The circuits you've been finding in your search are, confusingly, also called reversing circuits, but those are made to prevent polarity conflicts in reversing sections on Digital Command Control layouts. The kind you want works on direct current. It includes sensors (whether optical or some other kind) that are installed at either end of the train's route. When the train reaches a sensor, the polarity of the voltage to the track is reversed.

You can do the same thing under Digital Command Control, but since you can't just flip the polarity to reverse the locomotive, it's a bit more complicated. Some DCC-equipped locomotives come with a decoder that supports macros. A macro is a set of recorded instructions that a decoder can be programmed to perform in sequence. With such a decoder, much more complicated automatic operations can be programmed than simply going from one end of the layout to the other and back.

**Q** Why do trains going in and out of Rochelle, Ill., not blow their horns in the webcam area?

*Richard Arseneault, Maine*

**A** Unlike motorists, locomotive engineers follow a strict set of rules about when and where they can blow their horns. In addition to the rules in each railroad's employee handbook, local ordinances can designate areas as "quiet zones," where train horns can be used only in emergencies. According to Brian Schmidt of *Trains* magazine, Rochelle was designated a quiet zone in late 2016.

showed how to do that in the March 2016 Step By Step.

But that might be too much time and expense if you have a lot of turnouts. If your engines have a long enough wheel-base, use Insulfrogs; if they don't, use Electrofrogs. Either way, keep your wheels in gauge to avoid shorts.

**Q** In the August 2016 edition of Ask MR, there was a question on end-of-train devices. The photo with the answer was a ballast car photographed by Cody Grivno. What is the purpose of the small solar panels seen on top of each car in that photo?

*Terry Vogel*

**A** That is indeed a solar panel on the end of HZGX 9552 (page 18 of our August 2016 issue). The solar panel is used to recharge the system that opens and closes the discharge gates.

That's a Herzog ballast hopper in the August 2016 issue. The photo above shows a BNSF Ry. hopper equipped with the similar Solaris system, manufactured



The solar panels on the side of this BNSF Ry. ballast hopper charge batteries that power the hydraulic discharge gates.

*Cody Grivno photo*

by GREX. Either allows one employee, via remote control, to spread ballast while the train is running.

If you want to add solar panels to your HO scale ballast cars, head over to 3-D modeling site [www.Shapeways.com](http://www.Shapeways.com). Boxcar Models produces solar panels appropriate for cars operated by Herzog, CSX, and BNSF Ry., among others. Solar panel decals are available in HO scale from Microscale (set no. 87-1407). – *Cody Grivno*

**Q** I'm building a large HO scale layout that has hidden staging tracks. I would like to place a series of cameras to take live video of several spots of the staging tracks. Do you have recommendations for manufacturers and/or suppliers of such equipment that can be easily installed and displayed on a TV or computer monitor? Are any of the systems wireless? I've already purchased equipment to mount a camera on my locomotive, but this is insufficient for monitoring my staging areas.

*Ben Bruno, Midlothian, Va.*

**A** Most railroaders who use video to keep an eye on their hidden tracks do so with an inexpensive, out-of-the-box security camera solution. Such products, made by many manufacturers, either come with their own monitor or output a video signal that can be watched on any television. These systems can be set up to display input from multiple cameras on one screen at once, or rotate between multiple cameras every few

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Years after the manufacturer discontinued the Floquil and Polly Scale lines of hobby paints, many modelers are still searching for suitable replacements. Bill Zuback photo

seconds. Wireless cameras, high-definition output, and cameras with their own lights are available. There are too many products and manufacturers to fairly list only a few. Just do an Internet search for "security camera system" to bring up a few options.

**Q** I enjoy building structures, but I have a problem finding brush-on paint that will cover well. I used to use Floquil with great results, but I can't get it anymore. [Floquil was discontinued by its manufacturer, The Testor Corp. – Ed.] Water-based paints are either too thick or don't cover very well. Any ideas?

*John Rousch, Sebring, Fla.*

**A** Floquil was a solvent-based paint. Maybe another solvent-based enamel would give you better results. Two such brands are Scalecoat and Tru-Color. Check out our Hobby Paint Roundup in the March 2014 MR for more options.

**Q** I'm using Digital Command Control on my N scale railroad. I have engines with Digitrax decoders and use DecoderPro to speed-match them to each other. I can match the engines' speeds with the max speed set to 75 scale mph when running separately. But when I consist the engines together, their top speed drops to approximately 25 mph. When I take

them out of the consist, their top speed goes back up to 75 mph. If I return the engines to factory defaults and consist the engines together, there's no drop in top speed, but then they're no longer speed-matched. I've turned off back-electromotive-force (BEMF) control, but that doesn't change anything. Do you know what's going on?

*Matthew Baumann, Chula Vista, Calif.*

**A** Are you using advanced consist? With Digitrax decoders, as soon as you enter an advanced consist address into CV19, BEMF is disabled, and that causes the speed to drop considerably. The fix is pretty easy; just enter a value in CV57 that keeps BEMF turned on in advanced mode. In the Digitrax decoder technical manual, there's a table giving values for CV57 that will provide varying degrees of BEMF. The other option is to use old-style consist. – *Larry Puckett, contributing editor*

Send questions and tips to associate editor Steven Otte at [AskMR@MRmag.com](mailto:AskMR@MRmag.com).



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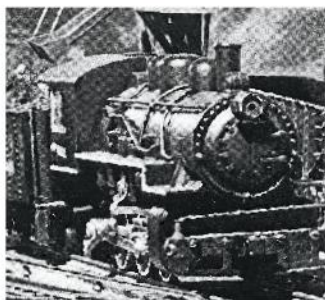
# Finding ghosts in old layout photos

**An interesting thing** about old layout photos is noting once popular models, now long gone. They've become ghosts, except in collections, and are no longer operated.

I belonged to a small Montreal club involving several home layouts, one of which was Walter Grayson's HO Valois Central. Begun in the mid-1950s, it had classic locomotives: Mantua, Varney, Roundhouse, and others, plus a wide assortment of freight and passenger cars. In a sense, it was an operating collection when it was dismantled in the early 1990s.

**Frank Ellison's Delta Lines** articles in *Model Builder*, the Lionel-produced magazine published from 1937 to 1949, reveal similar classic O scale locomotives, part of our 1930s to early 1940s experience. Ellison was a creative force inspiring many to emulate him, envisioning a miniature reality with prototype operation and switching.

These were heady ideas when many layouts were little more than a few steps beyond tinplate thinking. A ground-breaker, Ellison set standards for future hobbyists, whatever their interests. He was my



An American Flyer 0-6-0 pauses near a coal tipple in a story from the April 1940 *Model Railroader*. Ellison's models ranged from low-cost Flyer semi-scale models to expensive locomotives from Scale-Craft.

boyhood hero and godfather to all who were to follow, including John Allen, Bruce Chubb, and more.

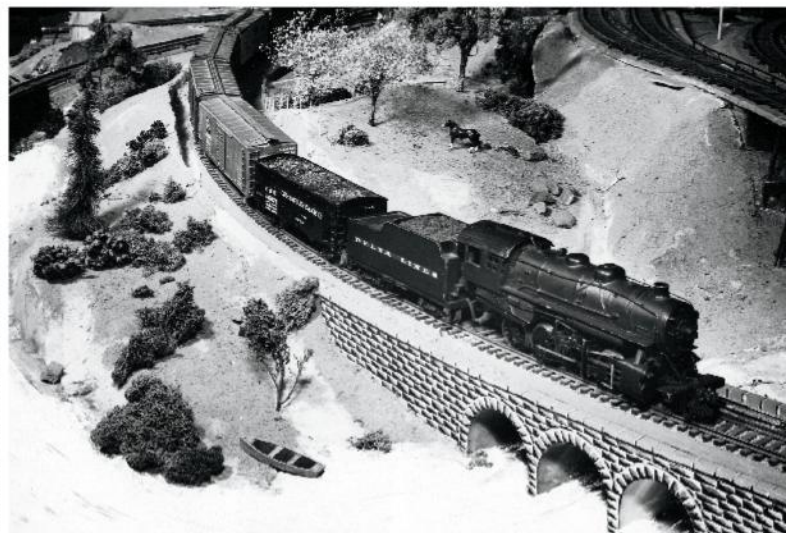
In the 1920s, Ed Alexander, who later founded American Model Railroad Co., crafted his O scale models to a slightly larger 1:45 scale rather than 1:48, a barely perceptible difference. Another was Scale-Craft. [The 1¼" gauge of O scale track is a scale 3½" too wide in 1:48 proportion. 1:45 proportion comes closer to a scale 4'-8½" between the rails. - Ed.]

Lionel made its first scale-tinplate UP M-10000 and *Hiawatha* in 1:45 scale, accepting 1:48 National Model Railroad Association (NMRA) O scale standards in 1937 with a New York Central 4-6-4 Hudson, Pennsylvania RR class B6 0-6-0, and four freight cars.

Photos reveal Ellison's mix of locomotives: Lionel's M-10000 in Delta Lines livery, three Hudsons and B6s, plus American Flyer's 1938 semi-scale tinplate 0-6-0, influenced by growing hi-rail interest in O scale. Ellison revealed it in an April 1940 coaling tower construction article in *Model Railroader*.

He ran Scale-Craft's Southern Pacific P-13 Pacific and Mountain along with a Hines Lines Santa Fe Mikado. One locomotive in different photos was Scale Model Railways' New York Central Consolidation. What's evident is Ellison operated a range of steam locomotives, from expensive Scale-Craft, to mid-priced Lionel and Scale Model Railways, to inexpensive American Flyer.

It was easier for manufacturers to produce better-looking O scale steam locomotives. They had boiler bands, rivets, appliances, and other details we now take for



A Scale Model Railways New York Central Consolidation leads a freight on Frank Ellison's O scale Delta Lines layout. Photos of his layout in the 1940s are filled with models popular at the time but barely remembered now.

granted in HO, though perhaps not as refined as what we're accustomed to.

For example, Mantua's HO scale bare prewar brass locomotives left much to be desired, but the company improved its postwar die-cast metal models. In contrast, Varney's HO scale die-cast metal locomotives had good cast-on and applied details.

O scale manufacturers needn't have compromised, though some offered semi-detailed versions to alleviate a modeler's tight budget during the Great Depression of the 1930s.

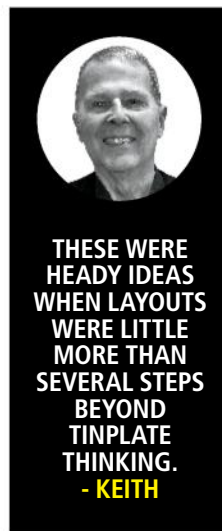
**Postwar, Ellison entered** the modern world with two Lionel F3s – one in Delta Lines livery, the other Santa Fe – adapted with scale wheels, drawbars, couplers, and outside pickups, presaging decades-later Rivarossi and Atlas plastic O scale

locomotives. Both Lionel locomotives hauled Kasiner extruded aluminum streamline consists, one in Delta Lines livery.

A General Models Corp. Electro-Motive Division NW2 switcher was another of Ellison's diesels, along with a scratchbuilt Budd Rail Diesel Car. Ellison's layout remained outside third rail, never converted to two-rail. In his many articles, one doesn't notice outside third rails and pickup shoes, so caught up

are we in his superb artistry.

**His locomotives recall** a time when there was little other than prototype steam and electric motive power, and the 1930s companies were prepared to model it. To a modern viewer, they are "ghosts," appreciated in photos of a great, groundbreaking layout. **MR**



THESE WERE  
HEADY IDEAS  
WHEN LAYOUTS  
WERE LITTLE  
MORE THAN  
SEVERAL STEPS  
BEYOND  
TINPLATE  
THINKING.  
- KEITH



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# SHOWS YOU HOW



“

After watching the spectacular scenery on the CP's Thompson and Fraser River Canyons from Drew's Trackside Adventures, I can't wait to see this project railroad come together. This looks like it's going to be one unique (maybe even spectacular itself?) model railroad!

– WALT HERRICK

”

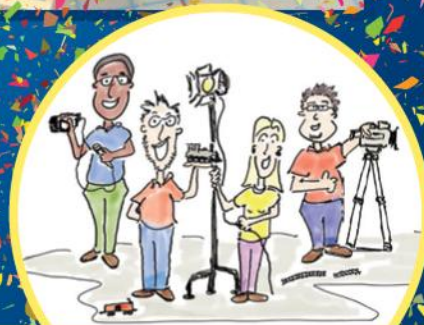
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The crew of the Tar Branch local has just spotted a gondola loaded with pipe at the Atlas Supply Co. on our HO scale Winston-Salem Southbound layout. You can make this easy 1950s freight car load in an evening. Bill Zuback photos

## Make a pipe load from plastic and stripwood

### The Model Railroader Video Plus

Winston-Salem Southbound project railroad includes the Atlas Supply Co. This set of large brick buildings in Salem, N.C., is a rail-served wholesaler of plumbing and heating supplies.

During operating sessions, the Atlas plant regularly receives plumbing fixtures, radiators, and other items delivered in boxcars. Recently, however, I stumbled across a series of photos showing the delivery of a gondola loaded with various sizes of pipe to the Atlas warehouse. Always on the lookout for different types of cars and loads to add to an operating session, I decided to model the pipe load for one of the layout's fleet of very empty gondolas.

The load, shown in the prototype photo, featured stacks of pipe in assorted small diameters laid into a wood cradle set into the bottom of a gon. Based upon the known dimensions of the car, the pipes measured in lengths ranging from 10 to 20 feet and have diameters of 4" and smaller.

From the photo, it's apparent the cradle lacked bulkheads, something that wouldn't be allowed by today's railroads.

A sudden start or stop of the train could have caused the load to shift during transit, potentially launching lengths of pipe all over the place! Still, the load was appropriate for our mid-1950s railroad, so I set out to model it.

At first I thought the project would be pretty straightforward; knock together a stripwood cradle, cut up some scale-sized pipe, and glue it in place. The pipe, however, proved to be the problem. You don't realize how small of a diameter household plumbing pipe is until you try to model it in HO scale – a trip to the hobby shop proved that. While I could find some very thin steel tubing, its diameter still measured larger than 6" in HO scale. Most of my options in brass were even larger.

In the end, I resorted to modeling the pipe by using  $\frac{1}{16}$ " and  $\frac{3}{64}$ " styrene rod, which scale out to 3" and 5" diameter respectively. Although the styrene rod isn't open at the ends like pipe, once the load is painted and installed in the car, it's hard to notice that fact.

Building the load was easy – the most difficult part was the patience required to cut, stack, and glue all the rods



Winston-Salem Southbound 2-8-0 no. 716 prepares to spot a gondola of pipe at Atlas Supply Co., the series of tall brick buildings behind the locomotive.

Photo courtesy of Forsyth County Public Library photograph collection, Winston-Salem, N.C.

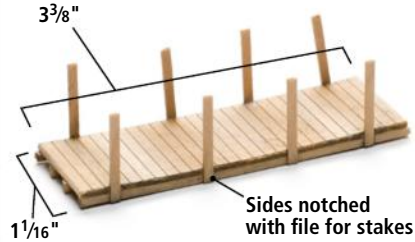
together – and the load needs a lot of them. And if you want to convert the project for a modern freight car, simply add wood bulkheads to your cradle. Following are the steps I used to make the pipe load. It's a good one-evening project, and if you're an MR Video Plus subscriber, you can watch the detailed video about it in the Winston-Salem Southbound series.

## STEP 1 BUILDING THE CRADLE

6 x 6s –  $3\frac{3}{8}$ "



2 x 10  
stakes –  $\frac{7}{8}$ "



**The load rests** in the gondola in a wood cradle. I built the cradle from pieces of Northeastern Scale Lumber, including HO scale 6 x 6s, 2 x 10s, and a piece of  $\frac{3}{32}$ " scribed sheathing. I cut the sheathing to  $1\frac{1}{16}$ " x  $3\frac{3}{8}$ ", which fits inside most HO scale model gondolas. The base is supported by four  $3\frac{3}{8}$ "-long 6 x 6s running lengthwise. I mortised the  $\frac{7}{8}$ "-long 2 x 10 stakes into the cradle's base by cutting notches for them with a file. Yellow carpenter's glue holds it all together.

## Materials list

### Evergreen Scale Models styrene

221  $\frac{3}{64}$ " rod  
222  $\frac{1}{16}$ " rod (2)  
351  $\frac{3}{8}$ " strip  
9040 .040" sheet

### Northeastern Scale Lumber

3015 HO scale 2 x 10 stripwood  
3040 HO scale 6 x 6 stripwood  
70355  $\frac{3}{32}$ " scribed sheathing

### Polly Scale acrylic paint (discontinued)

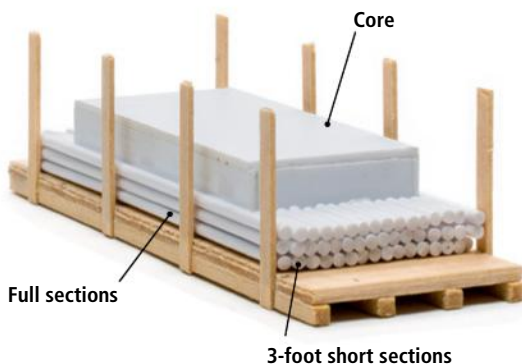
F414332 New Gravel Gray  
F414412 Piston Silver

## STEP 2 THE CORE BOX

**It would take much** more than two packages of styrene rod to fill the cradle. However, except for the ends, most of the rod doesn't show, so I built a styrene box as the load's core. The box is made from .060" x  $\frac{3}{8}$ " styrene strip and covered with .040" sheet styrene. The box's dimensions measure  $\frac{7}{8}$ " x  $1\frac{15}{16}$ ". The size allows the box to slip in between the cradle stakes with room for one layer of  $\frac{1}{16}$ " styrene rods on each side.

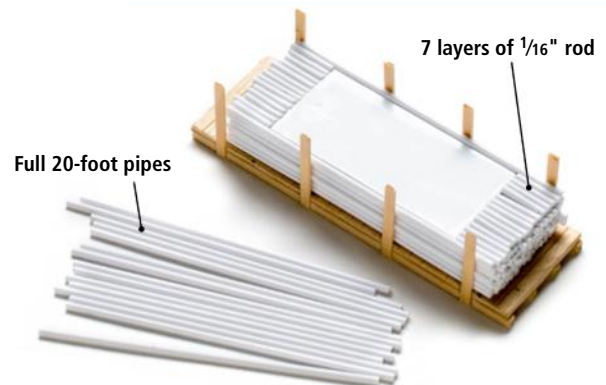


## STEP 3 FIRST LAYERS OF PIPE



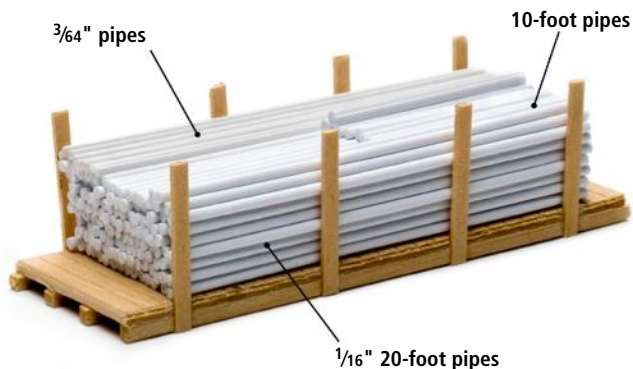
**I cut most of the pipe** before starting assembly. The full-length pipes are 20 scale feet. The short pipes at the ends of the core box are 3 feet long. I used a NorthWest Short Line Chopper to quickly cut the pipes to length. To assemble the load, I set the box in the center of the cradle, then added the first layer of pipe, starting with the two outside long pieces, then filling the ends with the short pieces. I glued the pipes to the core and to each other with liquid plastic cement, working my way up in layers.

## STEP 4 FILLING OVER THE TOP



**It took seven layers** of the  $\frac{1}{16}$ " styrene rod to reach the top of the core. I then covered the core completely with an additional layer of  $\frac{1}{16}$ " rod, using full 20-foot pieces. After those were in place, I carefully removed the assembly from the cradle. The liquid plastic cement had melted some of the styrene parts so that they stuck to the wood. It's best to carefully slide the load out of the cradle while the styrene is still soft from the glue.

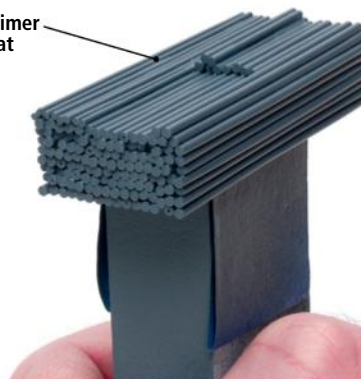
## STEP 5 FINAL PIPES




The prototype photo clearly shows the stack of pipe is uneven and that there are also stacks of shorter length pipes on top. To model these features, I added a few more full-length  $\frac{1}{16}$ " rods to the top, but just on one side. I then cut about a dozen 10-foot lengths of  $\frac{1}{16}$ " rod and cemented those in a stack at one end of the load. Finally, I added a stack of 20-foot  $\frac{3}{64}$ " pipes to the other side of the load, representing smaller-diameter pipes included in the order.

## STEP 6 PAINTING PIPE

Gray primer  
basecoat



I painted the load to represent galvanized pipe. I started by applying a gray primer coat, letting it dry for an hour. Then using colors on hand, I mixed 50 percent Polly Scale Piston Silver with 50 percent New Gravel Gray to make my own custom galvanized color. (You can do the same with any cold-tone gray and silver paints.) Using an airbrush, I applied two coats of paint. To add definition, I applied a coat of Hunterline Creosote Black Weathering Mix. Once the load was dry, it was ready for service. 

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# Chasing the

# MR

An old friend revisits the  
*Model Railroader* staff's  
HO scale Milwaukee,  
Racine & Troy

**By John "Boomer" Pete Jr.**

Photos by Bill Zuback



**My name may ring a bell** with you.

My dad was Boomer Pete, whose name showed up often in *Model Railroader* long, long ago, back in the early years of the magazine's history. Boomer, whose proper name was John, was a train buddy of one Albert C. Kalmbach, who founded *Model Railroader*.

Boomer was a homespun model railroad nut like many of you all, and as a traveling man doing odd jobs, he got to meet lots of other railroad nuts. He wrote a semi-regular column in MR.

Boomer wrote about everything; from fixing voltage drops, to visits to model railroad clubs, to identifying steam locomotive parts. Mr. Kalmbach even gave Dad's column a snappy logo that looked like a railroad emblem with "Boomer Pete" in cursive style.

After more than 15 years of writing, Boomer ran out of steam just as the hobby was bursting at the seams in the 1950s. The last time Boomer wrote anything for *Model Railroader* was in the January 1984 issue – the magazine's 50th anniversary issue – when he drove north from his Missouri home to re-acquaint himself with his old stomping grounds at Kalmbach Publishing Co.

What Boomer never wrote in print was that, as a young rascal, I tagged along with my dad on many of his trips. I visited enough places that I earned the name "Lil' Boomer." I'm an old man myself now, and Dad passed on in 1981.

I still remember the boyhood visits to the *Model Railroader* offices, and later as a grown man, a visit in the 1980s when I set eyes on the HO scale Milwaukee,

Racine & Troy RR, built by the magazine staff and its buddies. Not the layout here in these colorful photos, but the first layout, back when *Model Railroader* was at 1027 N. Seventh St. in downtown Milwaukee, before the company needed more elbow room and moved out to the suburbs. (That's why one of the diesels in these photos is numbered 1027).

But that's plenty enough about yours truly. I was extended an invitation to visit the current layout a few months ago,

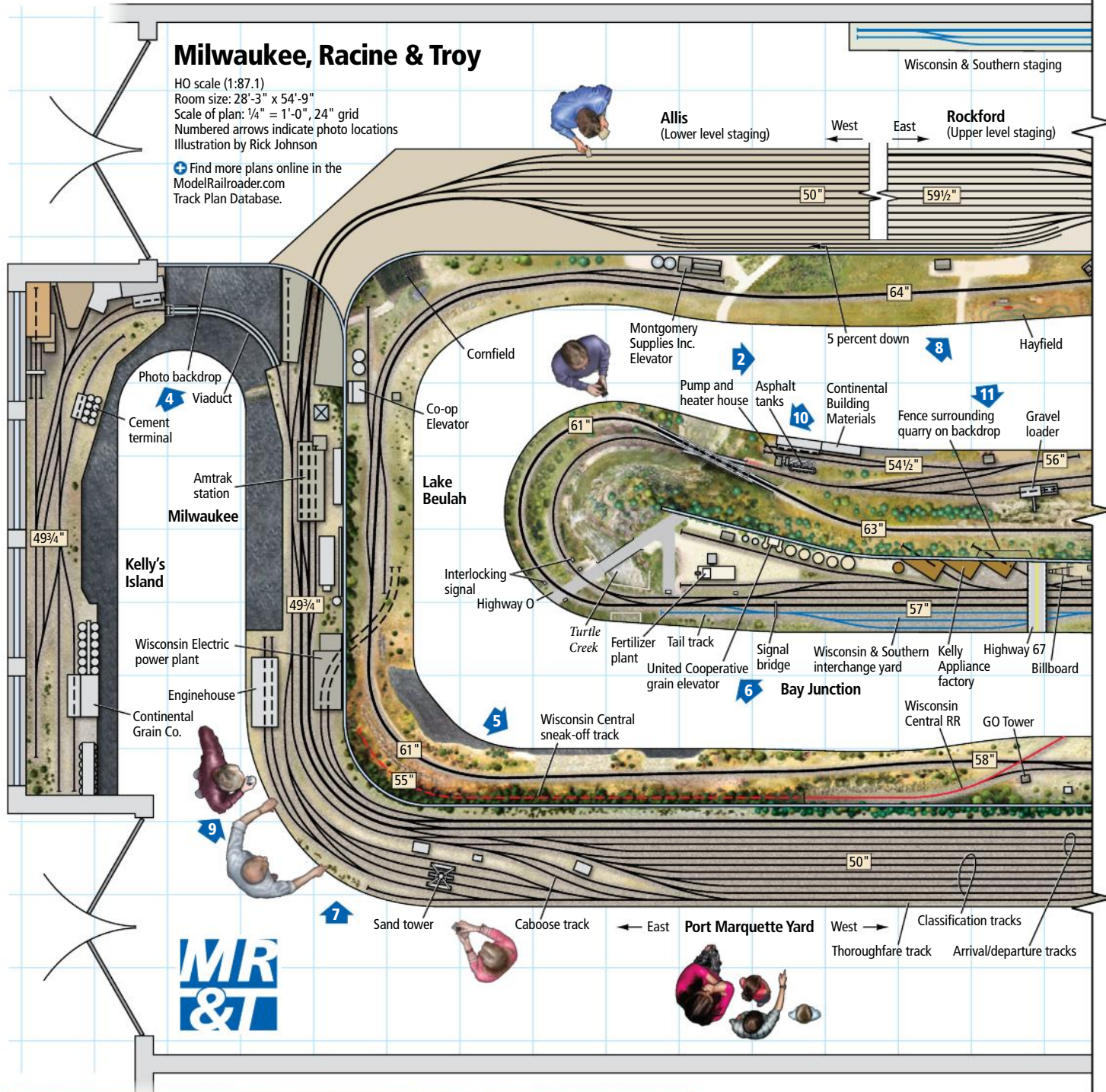
① A General Electric Dash 8-40B and two veteran Electro-Motive diesels lead an auto-rack train toward Mukwonago on the Milwaukee, Racine & Troy. John "Boomer" Pete, Jr. looks at the past and present on the *Model Railroader* staff's HO scale layout.



## Milwaukee, Racine & Troy

HO scale (1:87.1)  
Room size: 28'-3" x 54'-9"  
Scale of plan: 1/4" = 1'-0", 24" grid  
Numbered arrows indicate photo locations  
Illustration by Rick Johnson

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

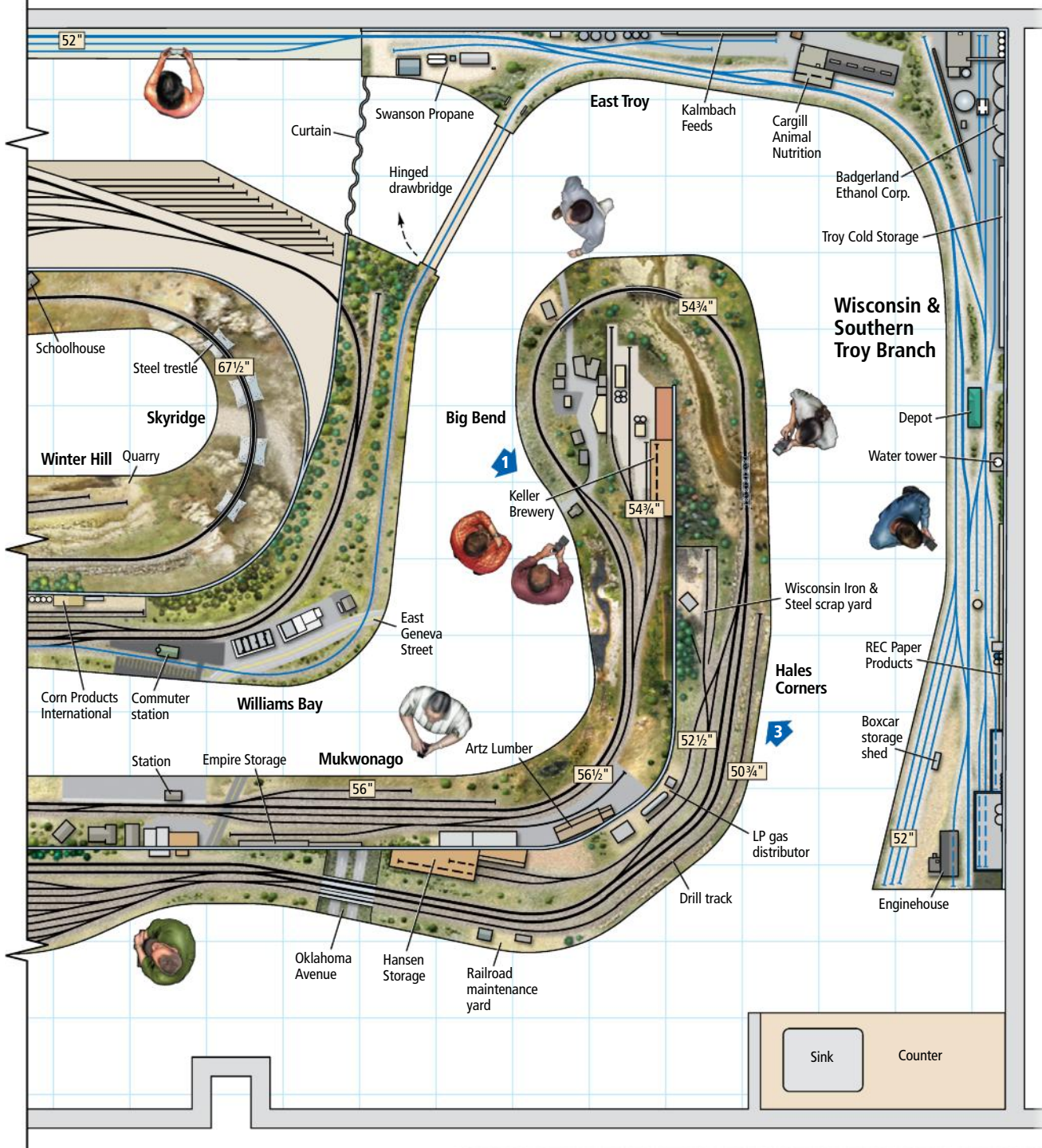


2 Looking down the aisle toward Skyridge, it's easy to see the dramatic effect of the grades on the Milwaukee, Racine & Troy. The main line track above the quarry on the right climbs a 3 percent grade – the toughest on the railroad.

so my son-in-law drove me up from Jeff City. And this here is what the young guns on the *Model Railroader* staff told me about the layout that they, and the fellows who came before them, built.

### The "Myrt" then and now

First things first. The Milwaukee, Racine & Troy, or the MR&T, is affectionately called "The Myrt" (just like a woman named Myrtle). The clever MR&T reporting mark also stands for *Model Railroader* and *Trains*, which were the first two of Kalmbach Publishing's magazines. The



railroad models a fictional Class 1 bridge line extending from Milwaukee to Fort Madison, Iowa.

When the original layout was designed in the mid-1970s, the line's primary function was interchange traffic between the Burlington Northern and the Santa Fe railroads. Naturally that doesn't make much sense if the layout is set in 2017, so the boys now say the present layout models the 1980s and 1990s. The portion modeled is in Wisconsin, reaching from Port Marquette terminal on the Milwaukee waterfront to just beyond the town of Williams Bay, which

## The layout at a glance

**Name:** Milwaukee, Racine & Troy RR

**Scale:** HO (1:87.1)

**Size:** 28 x 54 feet

**Prototype:** freelanced bridge line

**Locale:** Southeastern Wisconsin

**Era:** 1980s and 1990s

**Style:** walk-in

**Mainline run:** approx. 200 feet

**Minimum radius:** 36" (main)

**Minimum turnout:** no. 6 (main), no. 4 spurs

**Maximum grade:** 3 percent eastbound,

1.5 percent westbound (5.5 percent downgrade on staging ramp)

**Benchwork:** 1 x 4 open grid

**Height:** 49 $\frac{3}{4}$ " to 67 $\frac{1}{2}$ "

**Roadbed:** cork on  $\frac{3}{4}$ " plywood

**Track:** code 83 flextrack

**Scenery:** plaster over cardboard webbing and Sculptamold over foam

**Backdrop:** painted hardboard, photo at Milwaukee Harbor and Port Marquette Yard

**Control:** CVP and NCE DCC (MRC on WSOR)



③ Working a local freight out of Port Marquette Yard, GP38-2 no. 835 shoves a cut of gondolas into the spur at Wisconsin Iron & Steel. Associate editor Cody Grivno describes how he built the scene in the February 2011 issue.

is on the shoreline of swanky Lake Geneva, Wis., where rich Chicago folks would summer back in the old days. As you would expect on a pike modeling Wisconsin, there's a brewery on the layout and a herd of dairy cows. However, I couldn't find any cheese factories.

## The first layout

Back in the 1970s, former editor and publisher Russ Larson encouraged the staff to build the layout in Kalmbach's downtown Milwaukee building. The boys built a layout during lunch hours and on evenings and weekends. It was a Y-shaped job roughly 30 x 45 feet. It reminded me of a giant slingshot with a peninsula in the middle of the sweet spot.

For a time, the layout was an actual bonafide club layout, with two monthly operating groups – one for employees and the other for guests, once even a suspected hobo showed up. You'll need to read the October 1985 magazine for more about the hobo; it's all right there on page 149. The fellows used a tab-on-car operating system that then-associate editor Andy Sperandeo had learned from none other than famous model railroader John Allen himself.

The staff made a number of improvements to that old

layout over the years, including some serious surgery to build scenic dividers down the spine of the mostly finished layout. By the late 1980s, Kalmbach Publishing Co. had outgrown its Milwaukee building, and the whole company moved to a modern office park in the suburbs.

## The present layout

Andy, who had become the staff operations guru and the default brass hat, designed the new track plan using key points of the old layout. There are still track sketches drawn by Andy pinned up to a corkboard in the layout room. If you look at both track plans together at the same time, you'll see much of the old in the new. Not just town names, but the whole walk-in/walk-around thing, minus the slingshot shape.

Andy was deep into operations, and he designed a whale of a staging yard. It's two decks, each one is 25 feet long with 12 tracks. For showing off to visitors, the boys built a ramp track connecting the upper and lower decks for a continuous run. The ramp is a 5.5 percent grade, so trains that are running just for show only travel westbound, climbing through the layout counter-clockwise to the upper staging yard, down the ramp and around again.



The layout was constructed in a room designed for just this purpose in the back of the second floor of the Kalmbach office building. The room is a hair bigger than 28 x 54 feet with two entryways, a tile floor, and what they call a drop ceiling, with both fluorescent and track lighting. Typical office building stuff. There are no windows, oodles of wall outlets, and there's even a proper workshop sink in one corner. How about that!

Construction started ominously, in a way, with work sessions every other week. Retired managing editor Jim Kelly, who joined me for my visit to *Model Railroader*, recalled one of the early work sessions coincided with the start of the first night of the first Gulf War.

Linn Westcott, the late, well-admired editor of *Model Railroader*, would have expected nothing less than open-grid,



④ A pair of SD40-2s with “The 1027” on point pulls a cut of intermodal cars over the harbor viaduct. Kitbashing guru Art Curren built the Brallen Adley Co., while lead illustrator Rick Johnson added the photo backdrop of the Milwaukee waterfront.



⑤ A manifest freight led by a heritage unit that honors the old Troy & Northern RR rounds the curve along Lake Beulah. The broad curve is arguably the most picturesque scene on the railroad and a favorite for shooting product review videos.



6 Two MR&T Dash 8s barrel through Bay Junction with a unit coal train in tow, while the Williams Bay switcher works the United Co-op grain elevator. In the foreground a spartan WSOR caboose brings up the rear of a transfer run.

L-girder benchwork on the layout, and that's just what the boys built. Here and there the legs are bolted to the floor to give the snake-shaped layout stability.

The track is Shinohara brand code 83 flextrack laid on cork roadbed glued to 3/4" plywood subroadbed. Pretty typical for the day. Minimum radius is 36".

Turnouts, no. 6 on the main line, started out as Shinohara, but in recent times – as maintenance requires – the boys have been using Peco turnouts as replacements. Also, some of the flextrack has been replaced. Some of the turnouts operate using motors and the newer sprung Peco turnouts are moved with an easy flick of a finger.

Scenery is mostly cardboard webbing covered by paper towels soaked in plaster. Later on, as time and scenery materials got newer, the boys switched to sheets of pink foam (they insist on calling it extruded-foam insulation board) carved into pleasing Wisconsin landforms and covered with plaster gauze and something they call Sculptamold, which looks a lot like papier-mâché to me.



On top of that is ground green foam, and in recently rebuilt areas, static grass that stands on end. Boy, if my dad had only seen the realistic scenery materials these folks use today. Wow. Holy cow.

There are three rivers on the layout, all made out of resin, which is a fancy word for plastic. The boys told me that everyone who visits the layout feels compelled to touch the surface of the water to verify it's not real. I didn't let on that I did the same thing.

The layout has a pressed-board backdrop dividing all of the arms and peninsulas into two sides, making the layout seem twice as large. The backdrops are tall enough only a basketball player could see over the top. Some of the backdrop is painted plain sky blue, and in other areas the artistic types that worked at Kalmbach over the years have painted backdrop scenes or made up scenes printed from a computer. There are distant rolling hills with trees, farm fields, a far-off quarry, and even some angry thunderstorm clouds.

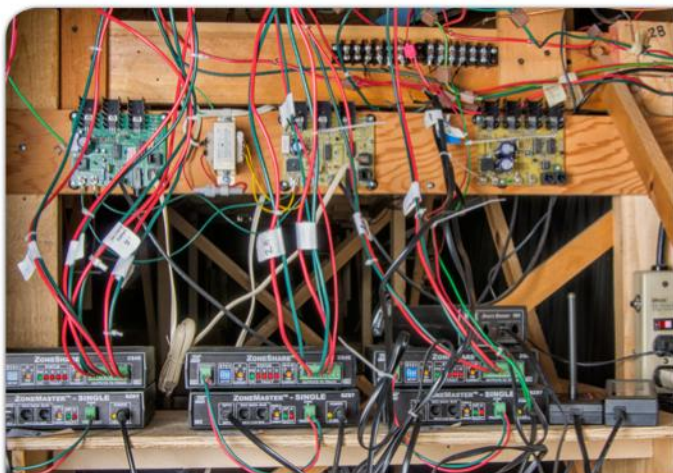
Andy was into railroad grades when he designed the layout. The main line climbs

from 49<sup>3</sup>/<sub>4</sub>" above the floor in Milwaukee to a summit of 67<sup>1</sup>/<sub>2</sub>" high, before trains head downgrade then slip through a discreet hole in the backdrop and into the upper staging yard. The effect is subtle until you walk into the very back aisle of the layout, where trains are at about eye level, depending on how tall you are. The grade tops out at 3 percent for eastbound trains departing Williams Bay.

The entire layout is edged with a green-painted fascia dotted with plug ports for this and that brand of throttle. Hanging below, almost to the floor, is dark skirting. I asked how much fabric it took, and was told the skirting was custom made by a theatrical supply company and is about 100 yards long in total, the length of a football field.

### Milwaukee's waterfront

The first thing you see in the train room is a model of the Milwaukee waterfront. There's a power plant, some old factories, an Amtrak station, an enginehouse with a cut-away roof showing a detailed interior, the Milwaukee River, and a grain elevator for Great Lakes boats. The boys said there was



7 A combination of CVP and NCE Digital Command Control components keep the MR&T running smoothly. The NCE throttle allows programming on the main, while before all programming had to be done at a fascia-mounted panel.

## A hybrid DCC system

Although the *Model Railroader* staff doesn't hold formal operating sessions on our Milwaukee, Racine & Troy layout, we do run the HO scale railroad frequently. As the Product Reviews editor, I regularly run trains on the MR&T for product testing and online video demos. As the frequency of the videos shot on the MR&T ramped up, it became clear that it was time for a change to the layout's Digital Command Control (DCC) system.

Since I started at MR 12 years ago, we've used CVP EasyDCC with the firm's wireless radio throttles. A few years later in 2009, editor Neil Besougloff and then-managing editor David Popp rewired the layout from 3 to 11 power districts using three CVP 7-amp ZoneMaster boosters connected to ZoneShare circuit-breaker modules. Each power district is electrically isolated with its own circuit breaker, ensuring that a derailment or short circuit on one section of the layout won't shut down the entire railroad. On a layout as large as the MR&T, the more power districts, the better. (If you'd like to learn more about this project, check out "How to wire a model train layout for Digital Command Control" on the Expert Tips video page at [www.ModelRailroader.com](http://www.ModelRailroader.com)).

The railroad ran smoothly and much more reliably, but I still had a problem. CVP makes excellent wireless throttles, but they're utility or operator cabs. That meant that I couldn't do any locomotive programming out on the railroad. If I was on the far end of the layout shooting a video and wanted to add a locomotive to a consist, tweak the momentum, or adjust any configuration variable (CV), I had to take the locomotive back to the yard where the fascia-mounted master EasyDCC control panel was located. The throttles also support only functions 0-13, which made it challenging to demonstrate new sound-equipped locomotives that can have up to 28 functions.

As much as we wanted new throttles, no one wanted to tear out the existing system, especially not Neil or David. If it ain't broke, don't fix it! Luckily the CVP components are designed to work with "foreign" or non-CVP DCC systems using an OPTO port on the back of the ZoneMaster.

The foreign system I installed was an NCE SB-5 Smart Booster with an RB-2 radio receiver. This system allows up

to 6 NCE wireless cabs to be used at the same time, which is more than enough capacity for product testing and video shoots. In addition to supporting programming on the main and 28 functions, the NCE ProCab has the same keyboard layout as the firm's PowerCab, which is familiar to all MR staff members.

Originally I thought I could just plug the output from the SB-5 into a ZoneMaster, then daisy-chain each ZoneMaster/ZoneShare combo together through the OPTO ports. It wasn't quite that simple, but a couple emails to CVP and NCE provided me with a straightforward solution.

I had to run the track output from the SB-5 to a terminal strip and then run a cable from each ZoneMaster's OPTO port up to a terminal strip to tap the DCC signal.

The ZoneMaster's OPTO port is made for a telephone-style connector and flat six-wire RJ-12 cable. For my hybrid DCC system to work I needed to make three six-wire to two-wire cables with phone jacks on one end and spade connectors for screw terminals on the other.

I found a few lengths of six-wire cable with jacks in our shop. Using a cable stripper, I cut off the jack on one end then stripped off the plastic sheathing exposing the six colored wires. I cut away all but the red (RS485+) and green (RS485-) wires that carry the DCC signal. I then crimped and soldered spade connectors to the ends of these wires.

I also tinned the ends of red and green 18AWG wires to fit into the push-in screw terminals of the SB-5. I attached spade connectors on the other ends that would attach to the terminal strips.

It's important to keep the polarity consistent between power districts, so I connected all the red wires to one terminal strip and all the green wires to the other. After plugging the phone jacks into the OPTO ports, I followed Neil and David's wise example and labeled each cable.

Then I plugged in the RB-2 to the SB-2, turned on the power, and grabbed an NCE throttle. Even though the wireless receiver is under the layout, our test trains ran flawlessly along the main line and all the branch lines.

After more than two years, the NCE and CVP components continue to keep trains running smoothly on the MR&T. — Dana Kawala, senior editor



once a model of a Great Lakes freighter in the harbor, and an employee – not directly on the magazine staff – took it home to work on it, later took another job, and never brought the Lake boat back. Such are the pitfalls of a group-built layout, I guess.

There's a bridge off the main line that crosses the Milwaukee River to a place called Kelly's Island, named after Jim Kelly, whom I mentioned a few paragraphs back. Jim's a humble guy, and hardly took credit for anything although I later learned that he built a lot of the structures and scenery on the layout.

Behind the bridge is one of the best model railroad backdrops I've seen. It's a photo looking along the real Milwaukee River with factories that have been turned into fancy condos lining the left riverbank. The photo is sized and angled perfectly to stretch the river from the foreground into the background. I was told that Rick Johnson, who makes track plans and other nifty drawings for the magazine, did the work – nice job, Rick!

On Kelly's Island are factory buildings that were kitbashed out of old Life-Like and Design Preservation Models kits by the late Art Curren. They have clever names like B. Fine Co. and Brallen Adley, a play on words for the Allen-Bradley Co., which is part of Rockwell Industries in Milwaukee these days. Art worked in Kalmbach's advertising department.

Stories about his kitbashing projects with funny names were in the magazine in the 1970s through the 1990s, and they always brought a smile to my face.

### Junction town

At the other end of the layout are Williams Bay and Bay Junction, which form a Y-shaped connection between the MR&T and the Wisconsin & Southern, sort of a fork in the road if you will. The Wisconsin & Southern (WSOR), which the boys call "The Wissor" (everything here seems to have a nickname), was a *Model Railroader* project layout in 2008. The staff built the WSOR on the remains of the old Troy & Northern RR, which was an add-on layout to the original MR&T and brought to this building when Kalmbach moved in 1989. It's across the aisle from the MR&T but in the same train room, connected by a lift-up bridge. The span is spring loaded but nothing fancy and has remained in alignment for more than 25 years.

The WSOR feeds freight to the MR&T and vice versa in a small interchange yard at Bay Junction. A sharp-looking grain elevator that young Cody Grivno built models a modern-day prairie skyscraper. Other staff members built several other track-side structures.

At the east end of Bay Junction, another track peels off toward a quarry on the far side

of the backdrop. This area also was a project layout in the magazine, this time in 2013. The neat thing about the quarry is the way it's modeled. Visitors like me, standing in the aisle, are also in a pretend sense standing in the bottom of the quarry pit and looking out at the rim, where the tracks come down to a nifty rock crusher, which was built by now retired senior editor Jim Hediger.

Just beyond the quarry is the most dramatic scene on the layout, where the main line crosses a spindly steel trestle on a curve over a deep valley. The trestle is made of Micro-Engineering parts.

### Deja vu all over again

As young Cody, managing editor Hal Miller, and associate editor Eric White took me around the layout, I thought to myself, "this looks familiar," although I had never seen this version of the MR&T until that morning. Hal explained: "While *Model Railroader* has only published two stories about the Myrt, pictures of the railroad are in the magazine all the time. At least six times a year the staff writes a how-to story in which the action takes place on the Myrt.

Sure enough, Hal and Eric pointed to clear plastic sleeves, each about the size of a paperback book, affixed to the front edge of the layout, with miniature versions of magazine pages inside the sleeves. Next to a scrapyard scene was a plastic sleeve with a story about modeling a scrap yard; next to a passenger





8 The spotted cows barely notice the executive inspection train racing along the single track between Skyridge and Lake Beulah. Line poles paralleling the track, rural grade crossings, and an abandoned schoolhouse make this part of the layout a popular setting for *Model Railroader* video shoots.

station in the town of Mukwonago was a plastic sleeve about modeling the station scene; and at the town of Williams Bay and along the Wisconsin & Southern RR were several plastic sleeves, since the boys built both as projects that stretched out over several issues of their magazine.

A feed mill along the back of the layout also rang a bell. Its sign says Bob Montgomery Elevator. Cody said that it was a Campbell Scale Models wood kit built long ago for a product review, and was named after Bob Montgomery, who played ball for the Boston Red Sox in the 1970s. The story goes that Leo Campbell knew Montgomery, and Montgomery had a hankering for model railroading. Well, how about that!

Another spot on the layout that looks all too familiar is the town of Big Bend. I mean the whole darn town. It turns out that the town was built by Art Curren on a piece of ceiling tile. It was designed to drop into the staff's 1985 Seaboard Central project layout. When that layout met its maker, the town scene was saved and was worked into the first MR&T, Main Street and all. Today the town lives yet again as part of the second MR&T.

### Locomotives and rolling stock

I myself am partial to models of steam locomotives, but there were none to be had lettered for the MR&T. Well, I guess a railroad that doesn't have a history prior to the 1970s wouldn't normally have steam.



9 Like many of today's railroads, the MR&T has its own heritage fleet. These custom paint schemes pay homage to past MR&T liveries and staff project layouts.

But there's still a sense of history here. Cody painted up several undecorated Atlas locomotives in his own vision of the MR&T's heritage, sprinkled with that of past *Model Railroader* project layouts. There are locomotives painted in old MR&T liveries and others painted for the Seaboard Central RR, the Troy & Northern RR, the Turtle Creek RR, and the Kinnickinnic Ry. & Dock Co., all freelanced railroads that are part of the

magazine's history. This was all explained in the January 2014 issue.

For showing off, there's a blue MR&T bulldog F-unit set, an A and a B, apparently in waiting should the railroad president need a ride in his business train.

The newest MR&T locomotive on the layout is from Atlas, another MR&T blue job, but Cody didn't paint it. Atlas apparently asked the boys if it could use three of their paint schemes from that



10 With its shoving platform in the lead, an empty hopper train drifts down the quarry branch, while Dash 8 no. 1121 helps a unit coal train up the grade. Former Kalmbach librarian George Drury designed the livery that inspired this heritage unit.

January 2014 article on a new run of factory-built locomotives, and they did. It was touching to see one locomotive bearing the name “Andrew J. Sperandio” on the cab. Cody told me that shortly after Andy passed, Atlas was in final preparations for the MR&T locomotives and asked if they could add his name on one of the cabs, above the road number. The *Model Railroader* boys said sure, Andy would have liked that.

There also are plenty of home road freight cars on the layout. Some were brought over from the first MR&T and are rightful antiques if you count back 25 years, and others were made in a factory by Athearn and other companies as commemorative pieces during the various anniversaries the magazine has celebrated in its 80-odd year history. There’s also a modern unit coal train on the layout and quite a number of those large auto-rack

cars. There are even several MR&T cabooses. Seems that the time period the boys model waffles back and forth between caboose and no-caboose trains.

David Popp, who used to be managing editor for *Model Railroader* and now runs its video website Model Railroader Video Plus, modeled passenger operation on the layout with a timetable and all the fixings. He explained that in the December 2007 issue.

Today, there’s more than Amtrak service on the layout. Rapido Trains over in Canada made some handsome blue-and-gray MR&T passenger coaches the boys use for the executive train.



### Powering the layout

All the locomotives have Digital Command Control (or DCC) decoders inside, but not a lot of them have sound, which surprised me a bit. Editor Neil Besouglhoff mumbled

something about being lazy, but I didn’t hear the entire reasoning.

Lots of the locomotives on the layout don’t really belong there. They are test samples from Walthers, Bachmann, Atlas, Kato, Broadway Limited, Bowser, Hornby, Athearn, Fox Valley, and several others (phew, sure are a lot of choices!) that are sort of temporarily visiting the layout. Apparently testing goes on all the time year-round, and most of those Internet videos of locomotives being reviewed are recorded on this layout.

Dana Kawala, who is the magazine’s senior editor, explained the MR&T’s DCC system to me, and he gives the specs on the current setup on page 47. In a nutshell, this layout and the first MR&T have been test beds for digital control systems going way back to the Dynatrol system in the 1980s. Currently the MR&T has 11 power districts with CVP brand boosters and some of those top-flight NCE brand wireless throttles, with literally all the bells and whistles.



And to add to the mixture, the neighboring Wisconsin & Southern layout runs off a Model Rectifier Corp. DCC system. A double-throw switch at the Bay Junction yard keeps the two power systems separated, with one track in the yard being the transition track between the two systems.

There's even a gorgeous *Hiawatha* train from Fox Valley Models that uses another advanced control system. Dana put one of those BlueRail Trains Bluetooth receivers inside the locomotive that can be controlled off an Apple iPad. Bluetooth? I didn't understand until Dana explained to me that it's the same technology that lets people talk on their cell phones with a wireless plastic gizmo in their ears. Hmmm. Now I get it.

## Operation on the MR&T

When I asked the boys about op sessions, the room got quiet. It seems that they've been chasing an elusive target.

Neil explained. The old MR&T operated under a tab-on-car system. The new



11 Down in the quarry, MRT no. 1505, an ex-Milwaukee Road MP15, switches hoppers at the rock loader. High along the ridge, the rest of the quarry is depicted by a scene painted on the backdrop surrounded by an HO scale chain-link fence.

layout was going to be special, with visions of six or eight run-through trains, four or five locals, and even helper service up the grade. But first, the layout had to be built. That took years. There's a log book of the construction sessions starting in 1989 and running through early 1996, when the crew was still working about twice a month on scenery, plus finishing wiring and track.

At about that time, construction of other magazine project layouts such as the Turtle Creek, the Virginian, the Red Oak, and many others – practically one a year – all came and went. So the boys never got to set up the MR&T operating scheme before age and maintenance took over as the layout's chief concerns.

The Beer Line and the Winston-Salem Southbound RR layouts (that one was built special for Model Railroader Video Plus and is on the cover of the new *Model Railroad Planning 2017*) got schedules, car cards and waybills, and they're all set up and rarin' to go. But the poor MR&T still waits, like a jilted bride.

## Always remodeling

The fellas explained that the MR&T is always a layout in the progress, either by necessity or desire.

After 25 years, some of the turnouts have gone bad, something about corroded metal contacts, and they're being replaced one by one. It's a big job with no glory.

Some sections of scenery have grown dusty and gray and are being re-built. The tall

brewery in the town of Big Bend, built by Allen Keller, who used to make videos for Kalmbach years ago before striking off on his own, pretty much fell apart when the glue dried out. Cody went ahead and built a new brewery.

Neil and David crawled around under the layout on their hands and knees and re-did much of its wiring a few years ago. Being an old-timer, I found it to be no surprise that the maintenance list never quite ends and there's never enough time in the day to get everything done.

And, speaking of time, mine in Wisconsin was about up. As this old man said his good-byes, it occurred to me that the MR&T layout is a reflection of the hobby of model railroading. Always on the move toward the future, so to speak, what with new trains, new buildings, new control systems, and all. In the bigger picture, isn't that how model railroading goes – taking the past and moving it into the future?

So happy 1,000th issue to the *Model Railroader* staff, past and present. My dad, good old Boomer Sr., would be awestruck to have known that the little magazine Al Kalmbach founded on a shoestring 83 years ago, the magazine that Boomer had written for in its early days, had reached such an incredible milestone.

Keep the firebox hot! **MR**

*John Pete, Jr., as noted at the start of the story, is the son of the late Boomer Pete, who regularly wrote for Model Railroader magazine during its early years.*





High-fidelity, offboard, headphone sound and battery-powered locomotive control systems lead the list of advances that are easily attainable with current technology and would make the biggest impact on our hobby.

# THE FUTURE OF MODEL RAILROADING

Changes are up to the market,  
not manufacturers

By Lance Mindheim • Photos by the author

**L**ooking in the rear view mirror, it's astounding how far our hobby has come in the past few decades. Wireless Digital Command Control, onboard sound, and rolling stock bristling with fine scale details top the list. Looking forward, what exciting advances does the next decade or two hold for us?

What follows is somewhat of a blend between advances I think will happen in

the short term and advances I believe would be in the best interest of the hobby as a whole if they did occur. Just because I believe a system or technology would be in everybody's best interest doesn't mean the market will agree.

## BARRIERS

There are two barriers to advancement in our hobby. Technological and

manufacturing capability certainly is one, but it plays much less of a role than you might think. We already have the technology to produce some game-changing products and systems. I think the biggest thing holding the hobby back is complacency with the status quo. It's a lack of demand for superior products. This isn't my own gut opinion, but rather feedback I consistently hear from manufacturers and leaders in the hobby.

The astounding leap we've seen in rolling stock quality was largely driven by consumer demand. Manufacturers felt safe knowing that the market desired superior products, so these products would sell at a premium that would let them recover their costs. Unfortunately, this dynamic hasn't played out to the same extent with other product lines.

## GAME CHANGERS

With the passage of time, there will always be a steady influx of new products. There's a difference, however, between a new product and an entirely new way of interacting with our hobby. A game changer is something that impacts the entire model railroading population, makes a significant improvement in the overall hobby experience, and makes entry more attractive to a newcomer. Digital Command Control was a game changer; a new detail part is not. Sound decoders were a game changer; a new F unit release is not.

If I had to pick two advances that would make the biggest impact, have the broadest influence, and are within easy reach, it would be battery power control systems and offboard sound. Whether the model railroad population embraces this or not remains to be seen.

## LOCOMOTIVE POWER SYSTEMS

The foundation of our locomotive power systems now is electrons carried through the rails. This means yards of wire, the need to solder feeders to the rail, stalling if the rail is dirty, stalling on turnouts, shorts, ad nauseam. It's a Band-Aid approach owing its roots to the fact that until now we had nothing better. The complexity is daunting to newcomers and an impediment to encouraging them to join the hobby. Long term it's just not a system that's in the hobby's interest to maintain.

The future? Battery power controlled by essentially the same DCC system we're presently comfortable with. The technology has been there for some time, with proof-of-concept established by our comrades in the larger scales.

There are a few roadblocks to moving forward. Until now, the biggest roadblock has been scaling the battery size down so it could be used in the smaller scales. Opinions vary on where we are on the battery technology curve, but looking at how far we've come in the past 10 years leaves me very optimistic. We already have battery packs that will



The CONVRTR from CVP is a miniature radio receiver along with a DCC booster packed into a tiny 0.8" x 2.0" circuit board. The device allows battery power controlled by the same DCC wireless throttles that run a rail-powered system.



The key to making battery power viable is making the interface user-friendly. We can now produce batteries powerful enough to allow an hour or two of run time and yet fit in the fuel tank of an HO scale locomotive. A simple plug would allow recharging without removing the battery.

fit in an HO scale locomotive fuel tank and give an hour or two of run time. Longer life battery packs would easily fit in a dummy unit of a multi-unit consist.

It wouldn't be that hard to design a battery that could be recharged by a plug under the locomotive, thus negating the need to remove the battery to recharge.

Imagine how it would transform our hobby if this idea grew wings. Just plop the locomotive on the layout and run. No track cleaning. No dead spots on turnouts. No electrical shorts. No wiring! Battery power is a big deal.

## OFFBOARD SOUND

You might be surprised that I included this as the second of the two biggest game changers on the horizon. I'm doing so because of its impact on

how we experience the hobby, plus how simple it would be to implement. We have the technology now. Though I'm totally convinced it would be in the hobby's best interest to embrace this concept, I'm less confident that it will.

There's a natural and understandable tendency for us to experience the hobby in tactile and visual terms. Subconsciously, however, if we draw on our railfan experience, sound is only a half step behind. At the most basic level, we build models to capture an experience. In railroading, sound is an enormous part of that. The better we do at capturing such a prominent part of the experience, the more satisfying the hobby will be.

The first question we have to ask is, as a railfan, where are we physically positioned when we hear and feel a passing train? It's not in a helicopter and it's



Sound systems that aren't dependent upon locomotive speakers offer much higher sound fidelity and a path to the ear that is much closer to what we experience as railfans. The system above wasn't that hard to build and consists of Sennheiser wireless headphones with sound fed by a SoundTraxx Tsunami sound decoder mounted under the layout.



To set up wireless offboard sound, a sound decoder mounted under the layout is tapped into the main layout track bus. The speaker outputs are fed into an inexpensive audio amplifier and then to a wireless headphone transmitter.

rarely in the cab. It's the chest-thumping bass that gives us the adrenaline rush as we stand 10 or 20 yards from the track. We don't hear the trains in the next town, as we do with our current model sound systems. That's what we need to bottle. We need to channel the visceral experience of being trackside with the highest level of acoustic fidelity we can.

Now, we have onboard speakers of limited fidelity that transmit sound

through a plastic shell, into the air for all to hear, and eventually into the ear. The entire approach is very limiting. No matter how incredible the decoder, the links between the decoder and the ear doom the system. Plus, you're left with the experience of listening from above the layout. The sound isn't remotely convincing. Even surround sound doesn't solve the problem of sound being transmitted to the entire room.

Onboard sound can't and won't ever get us there. The pathway from decoder to ear with the current system is limited from the start. The good news is we have the technology already to create a sound platform that is far more realistic.

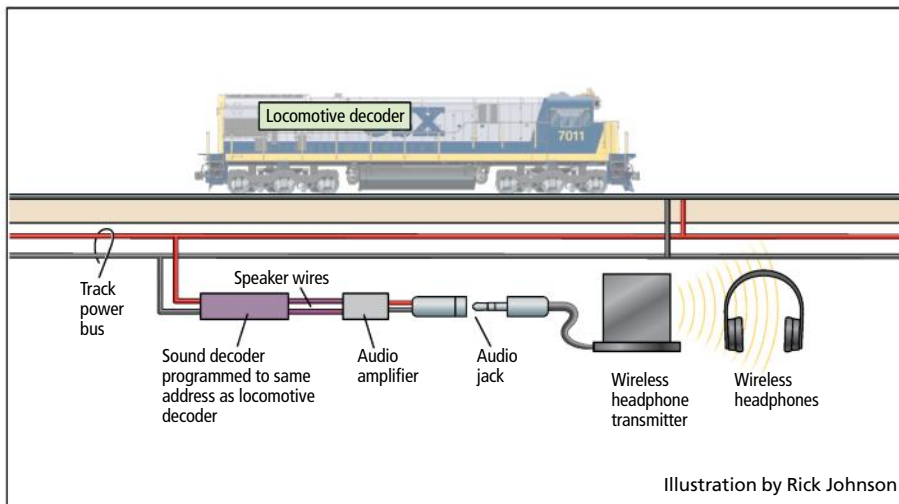
The solution? The same sound decoders we presently use, but rather than sending sound through locomotive speakers, send it to high-fidelity wireless headphones. Such an approach eliminates all of the bumps in the highway between decoder and ear that plagues onboard sound, efficiently channeling the sound waves into the ear canal. The headphones simultaneously block out the sound of surrounding trains. And headphone speakers' quality far exceeds what is available with a typical onboard locomotive speaker.

Headphones do a good job at blocking out surrounding sound, including voice communication between operators. There are mixers on the market that make it relatively easy to communicate via the same walkie-talkies already used on many layouts. In addition, mixers open up an entirely new sound experience, because in addition to locomotive sounds, you can add in other sounds, such as a brake wheel being tightened.

There's still work to be done if off-board speaker sound is to reach its full capability. As things stand now with onboard sound, a high-quality decoder's audio fidelity far outstrips that of the speakers. We aren't capturing anywhere near the full capability of the decoder. If, however, you turn the tables, and make the speakers the strong link in the chain, you'll notice two things.

First, you will be blown away by the audio depth and capability of the decoder. But after a few hours of listening, you'll realize that the decoder is now the weakest link. You'll hear what's called the "noise floor," which is a faint hissing sound. Audio experts I've consulted have stated the problem probably lies in the decoder's amplifier. This amplifier is integral to the board, and as such, we can't upgrade it. I experimented with expensive filters, but they didn't solve the problem.

The only solution is an upgraded amplifier integral to the decoder. If there's enough consumer demand, I believe manufacturers would be willing to upgrade the amplifier, creating an out-of-this-world sound experience. Without the demand, it makes no sense for them to do so. And there will be no demand if the sound will still be piped through that \$10 speaker.



## SCENERY

In the past several decades, we've seen dramatic improvements in the quality and types of scenery products available. Most notable is the introduction of fiber-based grass products that more accurately replicate actual grass. Static grass and fiber-based mats have made a dramatic impact in the appearance of our layouts. There's still work to be done, however, in the availability of tones that more accurately represent the colors we see in the United States. The fiber-based grass products are made in Europe, where the demand is for more vibrant greens. American distributors I've spoken with say that until there's a groundswell of demand for more accurate grass colors, the status quo will remain.

The lack of accurate grass hues is a demand problem, not a supply problem. I'm told by dealers that custom-mixed, accurately hued earth tones sit on shelves and don't sell. In terms of overall visual impact on our layouts, I'd put the need for accurate static grass colors as the largest need when it comes to the scenic aspect of our hobby.

We've also made advances in terms of more accurate tree armatures. Here I'm speaking of the SuperTrees product from Scenic Express. Although they represent a major advance, SuperTrees still aren't completely there yet. I've spoken with American scenery distributors as to whether we'll ever see a highly detailed and accurately shaped injection-molded tree armature with fine branch ends. The answer, unfortunately, seems to be that this is unlikely due to the technical challenges involved in mass producing something that complex.

## SMARTPHONE THROTTLES

As cool an idea as it is to use a smartphone as a throttle, I'm skeptical of the level of impact it will have on the hobby. A distinction should be made between technology that expands capability or makes life simpler vs. that which is merely interesting or just an ergonomic preference. Smartphone control, in my opinion, is more of an ergonomic preference as opposed to something that advances the hobby. Whether it's a smartphone or traditional wireless DCC



New scenery products, like Heki's fiber mats, allow even beginning modelers to easily and accurately capture the natural look of grass. The absence of more natural tones in this type of product is a void in the marketplace that, if filled, would greatly improve the appearance of layouts.

throttle, you're looking at a device of similar size that controls the action by pushing a button or a touchscreen. You may find one more intuitive than the other, but I'm not sure it's a game changer for the hobby as a whole.

## COLOR PLACEMENT

Until recently the only practical way to apply color to a model's surface was with paint. Technological advances in printing, photography, and photo editing technologies now make it possible to print or laminate actual photos of the prototype onto the desired surface. Want a perfectly weathered warehouse wall? Just laminate a photo of the prototype in place. Want a perfectly colored street? Print a photo of an actual street on vinyl, paper, or plastic sheet and get perfect



This model of a modern-era pharmacy manufactured by Summit Customcuts is an example of the trend toward greater availability of present-day structures. Summit Customcuts photo



Small shelf-style switching layouts encourage entry into the hobby while still allowing sophisticated operations for the more advanced modeler.



This hobby-sized laser cutter sold by Micro-Mark puts the ability to produce small production run parts within reach of the craftsman modeler. Micro-Mark photo



Lance's Black Cat electronic die cutting machine allows him to quickly cut highly accurate paint masks and structure veneers out of .020" styrene.

results. Not only do we get perfect color, but the digital process comes with an "Undo" button an airbrush doesn't have.

## ERA-APPROPRIATE STRUCTURES AND DETAILS

From my perch as a speaker, blogger, and active hobbyist, I have the luxury of interacting with hobbyists of all ages and degrees of involvement. Model railroad-ing is not dying. Young people continue to enter the hobby with passion. Retirees are entering the hobby with stuffed wal-lets. The future is bright.

Change is inevitable, however, and change isn't bad, just different. Over the next two decades we'll see a trend away from steam and steam-to-diesel transition era and toward the more modern prototypes that we see passing at the grade crossings today. The structure and detail market has been extremely slow in embracing this trend toward the modern era. At some point, the economic advantages and demand will become so obvious that the supply will have to catch up.

## LAYOUT DESIGN

Just as products evolve over time, so do preferences in layout size and design. These changing preferences are partly driven by experience as to what works and doesn't, technology, and overall changes in attitudes.

For many years the 4 x 8 oval was the standard. Then onto the scene came arguably the most influential railroad modeler of all time, Allen McClelland. His concepts, as well as *Model Railroader* contributing editor Tony Koester's articulation of the concepts, created a decades-long trend toward larger layouts that allowed longer mainline runs. If I had to guess, the future will see a trend toward smaller and simpler but operationally sophisticated shelf-style switching and branchline layouts, as well as modular ones.

This trend has the advantage of making entry easier for the beginning hobbyist. It also allows participation by the more sophisticated modeler who may not want to devote the time necessary to build a larger layout.

## ADVANCED TOOLS

A trend that has already started, and that I expect to continue, is the availability of computer-controlled tools at a size and cost that put them within reach of the hobbyist. I'm referring specifically to small laser cutters and high-quality, home-level die cutters. The nature of our hobby is such that often a specific part just doesn't have enough of a market base for it to be economically viable for even a small manufacturer to produce. Low cost, high-capability tools now put the ability to produce said parts within reach of the motivated hobbyist.

I'm including this section last because even though the advent of low cost, sophisticated tooling represents a major advance, I see it as appealing primarily to those more dedicated to the hobby, not hobbyists as a whole.

When asked what he felt was the biggest advancement in the hobby tool market, Tom Piccirillo, formerly of Micro-Mark, cited the tabletop-sized laser knife. "It will fabricate parts that absolutely can't be made with a traditional hobby knife, no matter how experienced the craftsman," he said.

"Machines are becoming available that are affordable, highly accurate, and user-friendly, with software that a novice can master in no time. The average model builder will be able to start laser cutting within an hour after opening the box."

Initial offerings include a machine with a 10 x 10-inch cutting area. The next production wave will include machines that cut areas up to 12 x 20 inches. They're capable of cutting wood, plastic (including styrene, acrylic foam, and Gatorboard), chipboard, cardstock, corrugated cardboard, cloth, and other soft, non-metallic materials. Even thick materials can be cut by making multiple passes. Productivity is very high, because the machine can be cutting while models are being assembled.

Laser-cut parts can be stacked in layers to replicate 3-D printed parts without the hassle of learning complicated software or the chore of smoothing the ridges formed by printed layers.

When asked about 3-D printers and the hobby, Tom's opinion was that the enormous amount of time and skill required to produce the drawings for a 3-D printer would probably limit their use to a handful of the most committed modelers. He didn't see 3-D modeling as a trend that would take off with the average modeler. Still, only time will tell what the future holds. **MR**

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That Allegheny Midland operations were closely coordinated with Allen McClelland's Virginian & Ohio was apparent when one saw a string of V&O Fs bringing a transfer run into the AM's yard at Sunrise, Va. The overall scope of the AM is also apparent.



# 11

# LESSONS LEARNED from building two model railroads

Sometimes, the more things change, the more changes you end up making

By **Tony Koester** • Photos by the author unless noted

**W**hen I contemplated replacing my Allegheny Midland RR with a new HO model railroad, I distinctly remember thinking it should be a relatively easy project. After all, I had essentially finished one basement-size railroad, so doing another should be a piece of cake.

How naïve of me on numerous counts!

You've heard that "the more things change, the more they stay the same." That adage has a very limited application to model railroading, I discovered. Over the quarter-century that the Allegheny Midland resided in my New Jersey basement, "things" changed a great deal. I thought I was keeping the AM up to date, but some seismic shifts in our options caused me to have to rethink almost everything I thought I understood to be a best practice.

What follows is a review of what I regarded as best practices when I built the AM in the 1970s and '80s vs. what I encountered when in the 2000s I built a new HO railroad based on the Nickel Plate Road's St. Louis line.

## ① What to model?

AM: I met Allen McClelland at a National Model Railroad Association (NMRA) regional convention in Pittsburgh, Pa., in 1970 and soon wangled an invitation to visit his HO scale Virginian & Ohio. It was an eye-opener in several important ways.

One huge lesson gleaned from even a cursory review of the V&O was to model the ordinary. It's all too easy to compile a list of eye-catching prototypes to model, and the inevitable result is

that everything competes to be the star of the show. The V&O's fleet of "dip-blue" hood units and covered wagons looked the part and didn't draw one's attention away from the Big Picture he was painting: coal railroading in central Appalachia.

By good fortune, I discovered Allen was looking for a northern connection, which pointed to building a railroad between the V&O in Virginia and personal favorite Nickel Plate Road's Wheeling District in southeastern Ohio.

Why not just model the NKP? As anyone who was a modeler in the late 1960s and early 1970s will recall, obtaining high-quality models of specific

prototypes was much more challenging than it is today. Fortunately, I understood it wouldn't be practical to spend lots of time upgrading individual models, especially locomotives, while also building a basement-size model railroad.

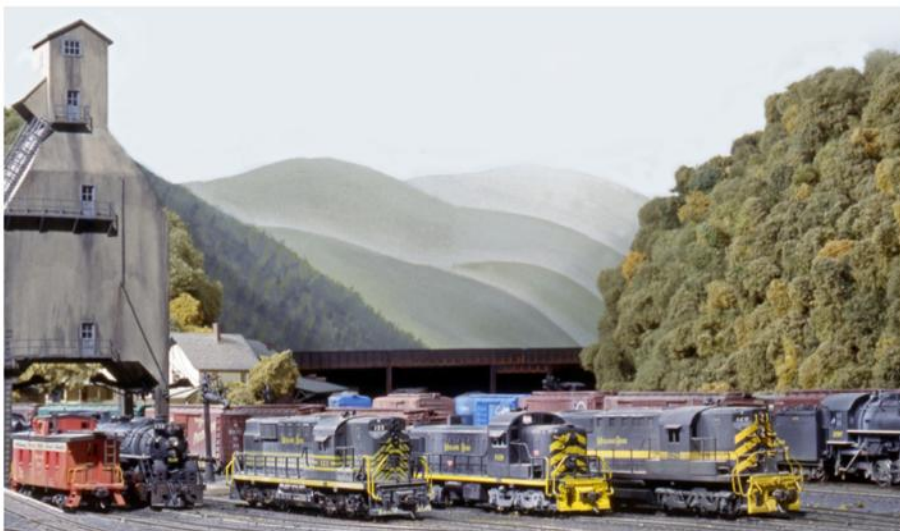
NKP: As I described in the December 2014 *Model Railroader*, my reasons for modeling the St. Louis Division of the NKP were straightforward: I grew up at the midpoint of the Third Subdivision, and it was an ideal candidate for single-track timetable and train-order operations. Seeing the railroad and era come back to life in my basement has been an extremely rewarding experience.



What part of the NKP to model was an easy choice: the St. Louis Division through Cayuga, Ind. – Tony's hometown in the 1950s. This was a busy single-track railroad dispatched by timetable and train-order rules. Charlotte Schwab Miller collection photo



Tony initially modeled the Allegheny Midland's diesel era, but shifted back to 1957 as better steam models became available (top). Steam and six-axle diesels operated together that year on the NKP, the AM's main connection to and from Midwestern markets. In 1954, the NKP took delivery of a fleet of one of Tony's favorite diesels, the Alco RS-3, but still operated steam on the St. Louis Division (bottom). That autumn was the division's last grain rush powered by steam.



The AM units at left and center reflect pre- and post-1959 NKP livery; the RSD-12 at right was one of two wearing a "custom" scheme that was "close but no cigar" – an experiment Tony never repeated as he sought to tie the AM closely to parent NKP.

## ② Choosing an era to model

Determining a plausible span of time for a model railroad to depict is a bit trickier than it first appears. Each era has well-known characteristics that affect everything from choice of locomotives and rolling stock to operating practices and the condition or even the very existence of lineside structures.

AM: Example – Since I was freelancing and love A-B-B-A sets of F units, why not have them on the AM roster? I almost did, but Electro-Motive Division (EMD) veteran and fellow model railroader Bill Darnaby pointed out that a railroad as small as the AM that dieselized in the F-unit era would have dropped steam long before my modeled 1957 date.

Why 1957? Because the NKP still used steam until that year on the former Wheeling & Lake Erie, to which the AM connected end-to-end in southeastern Ohio. Moreover, NKP took delivery of EMD SD9s and Alco RSD-12s in 1957, and I wanted to employ both steam and six-motor diesel hood units. Just because we're freelancing doesn't grant us carte blanche to do whatever we want unless we're willing to watch plausibility ride off into the sunset.

NKP: When it came time to build a new model railroad, I chose to model the NKP's St. Louis Division in the fall of 1954. That was the last fall grain rush on that division using steam, and a primary objective was to operate a fleet of the NKP's superb 2-8-4 Berkshires. I'm also a big fan of Alco RS-3s, and they were delivered in April 1954. Fortunately, they were assigned to the Frankfort, Ind.–Peoria, Ill., run, which meant they rubbed elbows with the Berkshires at the NKP's major hub at Frankfort.

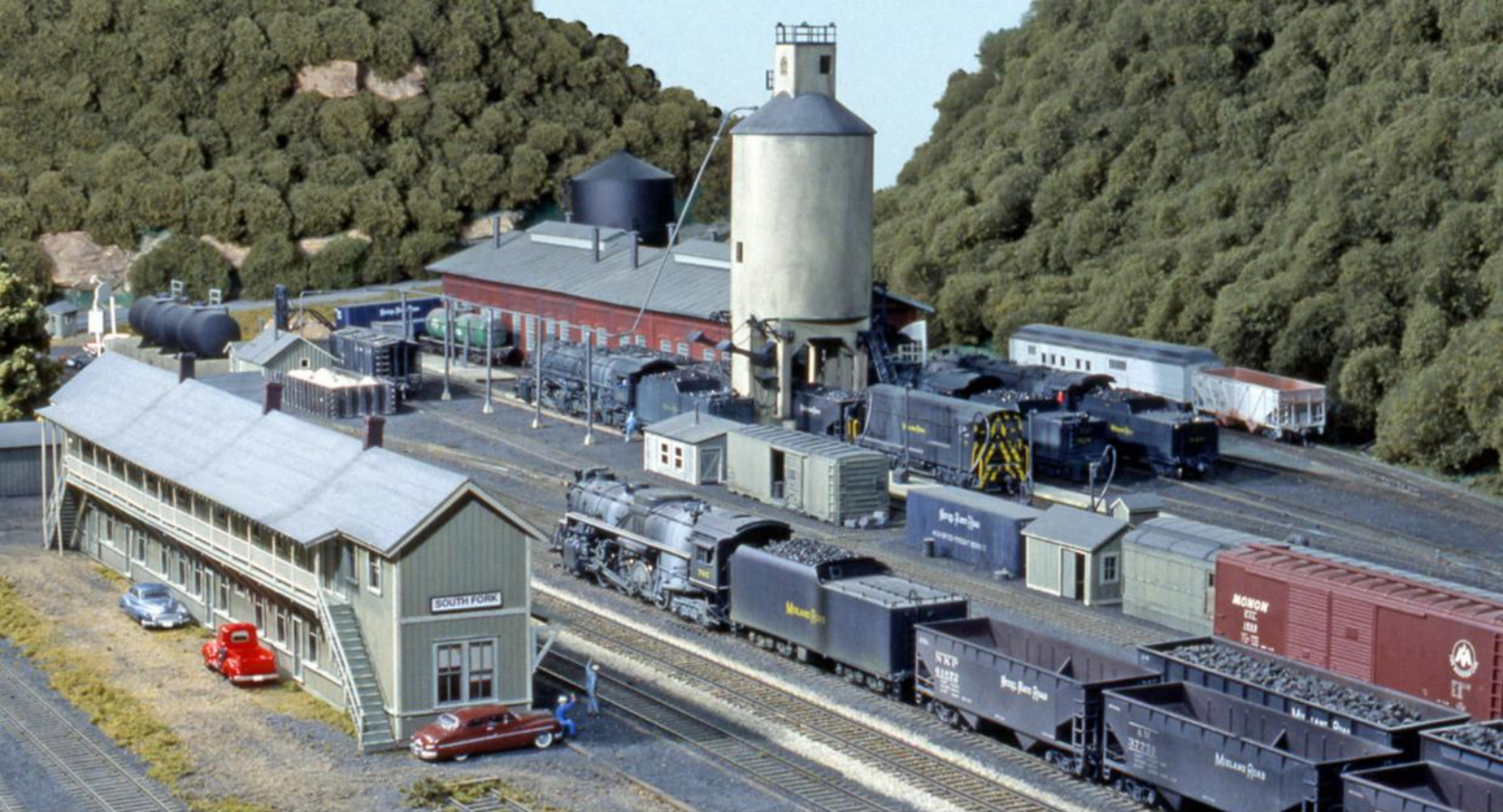
It pays to make a matrix showing the years key attributes of prototype railroading existed, focusing on the railroad(s) that most interests you over a span of a decade or two. You can then look for a narrow time frame where several key attributes coexisted.

## ③ Plausible paint schemes

AM: The old saying that "It's my railroad, so I can do anything I want!" ceases to apply the moment you try to explain it to someone else and expect them to buy into your reasoning.

That the Midland Road steam and diesel paint schemes were essentially copies of the NKP's was a plus, as the AM was supposed to have corporate ties to the





The lineside structures on the AM were all based on Chesapeake & Ohio prototypes, including the depot and division offices at South Fork, W.Va., above, which is a scratchbuilt model of the C&O structure still standing at Thurmond, W.Va. Modeling a specific railroad often requires scratchbuilding or kitbashing to ensure fidelity. As information is accumulated, however, stand-ins such as the depot at Oakland, Ill., at right, kitbashed from a Woodland Scenics (DPM) kit, add a sense of completeness to the railroad.



overly difficult. But I didn't do that: I created a mythical subsidiary of the NKP yet adopted structures from the C&O. That's akin to mixing apples and oranges.

QN at Quinimont, for example, was a highly distinctive structure that came to be quite well known. So what was it doing on a different railroad in another part of the Mountain State? Same for the depot and division offices at Thurmond, W.Va., now a National Historic Landmark, which I also modeled and located at mythical South Fork, W.Va. Not helping things was the fact that I retained the C&O's two-tone-gray structure paint scheme, although it did embody the nonsense look and feel of coal country.

To modelers who knew very little about prototype railroading, this wasn't a faux pas. To more knowledgeable modelers who are also railfans, it was probably confusing to some degree. The question one has to answer: Does following my example diminish the plausibility of your railroad and, if so, does this matter to you?

NKP: You'd think that by modeling a specific prototype, all your structure choices would be well understood. And,

with any luck at all, kits for the key structures would be available. As it turned out, there were more "AM" (that is, C&O) structures available than those for the NKP.

The reason is the part of the NKP I chose to model was originally a conglomeration of several narrow gauge short lines. Nickel Plate standard structure designs, for which there are laser kits, didn't apply. The good news was that the former Toledo, St. Louis & Western, which joined the NKP system around 1922, did have a standard wood depot. The bad news: Not one of them was built in the eight towns I modeled.

I enjoy scratchbuilding and kitbashing, so no harm done. But a couple of the NKP depots I still need to build will take a lot of time. So they will probably remain on the to-do list for a while. A mock-up and a stand-in will suffice for now.

## 7 Placeholders – a waste of time?

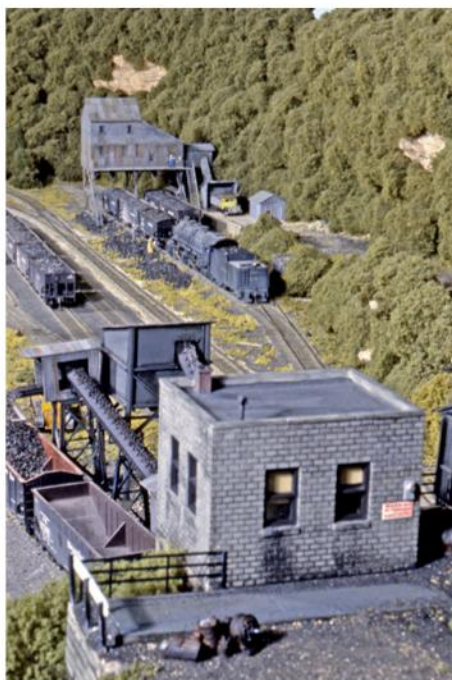
AM: Some see spending any time and money on stand-ins as a waste of both. My view is they add more realism to the railroad at the earliest possible date. A

stock kit-built grain elevator still looks like a grain elevator, and very few know what the prototype looked like anyway.

But on the AM (and now the NKP), I did take care not to use extremely familiar buildings without modifying them. Even repainting a wood-frame structure white helps to achieve a more common appearance. By painting buildings white, they blend in to the overall scene without attracting undue attention.

I was also careful not to use structures that didn't fit the locale and era. As architecturally appealing as many New England mills may be, for example, they seldom look right in an Appalachian or Midwestern setting. I also Americanized several European kits to look at home in the Midwest (see "Americanizing European Structures" in the October 2016 MR).

NKP: If you saw the photos of my model railroad in the December 2014 MR or the more recent Model Railroader Video Plus coverage of the railroad, I suspect your overall impression is that the railroad is close to being "finished," if that word has any real meaning with



Kitbashed or ready-built stand-ins do the job, left, but may develop permanent roots, as was the case with these two coal loaders at Big Springs Jct., W.Va., on the AM. But they looked a lot better than two empty spaces! Sanborn fire insurance maps hint at what structures once occupied downtown Metcalf, Ill., right, but no photos have turned up to fill in the details. So commercial kits will have to suffice.

regard to model railroads. Truth be told, there are a lot of stand-in structures. Some may grow permanent roots, as I may never discover what their prototypes actually looked like. Others – factory-built, kit-built, or mock-ups – will be replaced with more accurate models as time permits.

## 8 Scenery

We often draw a line between a model railroad built primarily as a scenic *tour de force* and one designed primarily for realistic operation. This is a rather arbitrary and unsupportable distinction, as railroads such as McClelland's V&O, Jack Ozanich's Atlantic Great Eastern, Darnaby's Maumee Route, the La Mesa, Calif., club's spectacular model of the line over Tehachapi Loop, David Stewart's Appalachian & Ohio – the list is practically endless – excel on both counts.

At either extreme, there are scenic spectacles that feature no operation beyond running trains in endless circles, and there are Plywood Pacifics that operate very realistically without a lick of scenery in sight. But there's no reason to draw a line between scenery and operation unless you really want to.

On both the AM and NKP, getting the railroad operational was Job One. Scenery could wait until I was sure the railroad ran well and operated realistically.

AM: At the urging of Lee Riley of Bachmann, in March 1981 I converted a big carton filled with poly fiber into the first puffball "trees." Don Cassler independently developed his own puffball trees at about the same time. Neither one of us got it quite right, but between us we figured it out in short order.

I put "trees" in quotes because puffballs are not meant to represent actual trees. Rather, they collectively simulate the forest canopy. In Appalachia, the foliage usually extends right down to trackside and to creeks and rivers with nary a trunk or branch to be seen. Puffballs did and still do cover that need nicely and economically.

The main scenic concerns on the AM were verdant ridges with some rock outcroppings plus rivers and streams. Samples of sedimentary rock brought home from West Virginia ensured that my plaster castings reflected local scenery.

The water in central Appalachian streams is often opaque and a pea-soup green color, so there was no reason to use a transparent resin. I simply poured in a ¼" layer of soupy plaster, painted it "US&S CTC machine green," applied several coats of gloss medium to the surface, and dry-brushed white streaks to represent foam downstream of bridge piers, rocks, and fallen logs.

NKP: On the NKP, I needed to model small groves of trees or even individual

Poly fiber puffball "trees" nicely represented the forest canopy on the AM. Using scale-size trees would have dramatically reduced the apparent height of the ridges.

trees. I thought I could get by with maybe a few dozen nice deciduous trees, but I've since used SuperTree armatures from Scenic Express to create hundreds of trees with more to come. In elbow country along the aisles, I use Woodland Scenics plastic-and-foam trees mounted on coil springs. They absorb a lot of hits without being damaged ("Trees that bend without breaking," August 2013 MR).

Because of the vast quantities of trees of either type that I needed, I allowed only a minute or less of construction time per tree, as I described in May 2014 MR ("Trees in 60 seconds").

For groundcover, the hobby's advance from dyed sawdust to ground foam was a dramatic change. But today we typically cover a light application of foam with electrostatic grass. It took me a while to get over my incorrect assumption that applying such grass looked a lot like work. It goes quickly once you get the hang of it. Waterways were made using the same techniques developed for the AM.

Modeling crops caught me by surprise. Many of the excellent German scenery products are intended for small garden plots, not 10-acre (or larger) Granger Belt fields. And as soon as I discovered, say, an ideal matting material for a mature wheat field, it was discontinued.



A GHQ John Deere tractor-mounted corn picker makes quick work of a field populated with JTT cornstalks. Modeling crops remains a challenge on flatlands layouts. Many of the scenery products are intended to model small garden plots.



A single-deck railroad such as the AM, top, has more vertical elbowroom to feature high mountain ridges or, in the larger scales, scale-height trees. For the NKP, a second deck was required to double the mainline run, thus ensuring enough passing track locations to support challenging timetable and train-order operation. (The dispatcher's office is inside the peninsula "blob" at left.)

We flatlands modelers are slowly but surely coming up with ways to model corn and soybean and wheat fields. Better yet, manufacturers are tumbling to the fact that more and more of us need large quantities of reasonably priced crops.

## 9 Multideck designs

AM: The Midland Road was a single-deck railroad that climbed from a river valley up and over the West Virginia-Virginia state line and twisted and turned its way down to another river

valley. It was therefore a "multi-level" railroad but had only one main deck.

NKP: The multideck initiative was just starting to gain traction while I designed the first edition of the NKP-to-be. That it resembled the footprint of the Allegheny Midland was to be expected – and a major handicap. It was a single-deck design, as I wasn't all that keen on the multideck approach. That meant I could at best model only the Indiana half (the part through my 1950s hometown) of the Third Subdivision of the NKP's St. Louis Division. The Illinois half would be staged.

As I documented in the December 2014 MR, I was saved by "a little help from my friends," especially Bill Darnaby (a multideck guru) and Frank Hodina, another NKP fan with a degree in railroad engineering. They moved me away from a plan that owed a lot of its heritage to the Allegheny Midland. Over several iterations, Frank created a superb multideck plan that broke new ground.

The lesson: Talk to folks who have been there and done that. I tried to distill a lot of what I learned in my Kalmbach book, *Designing & Building Multi-deck Model Railroads* (2008).

## 10 Operational requirements

AM: The Allegheny Midland, like the Virginian & Ohio in its several iterations, was dispatched using Centralized Train Control. The job of dispatcher was every bit as realistic as its professional equivalent, although no lives were at stake. Rod Loder designed and built a beautiful Union Switch & Signal CTC machine cabinet.

As time passed, I had the opportunity to operate under now-archaic timetable and train-order rules on the former Midwest Railroad Modelers HO club layout in Batavia, Ill., and later Bill Darnaby's Maumee Route and Jack Ozanich's Atlantic Great Eastern. While not as "colorful" as a railroad operated by signal indications, much of the burden for safe and efficient train movements shifted from the dispatcher to the engineers and conductors. Rather than waiting for a signal to change from red to green, train crews were busily studying timetable schedules and reading amendments to them in the form of train orders.

I'd instituted timetable and train-order rules on a long coal branch on the AM. Crews whined about it for a session or two, but they quickly caught on and had fun coping with the greater personal

challenges and responsibilities. I was therefore comfortable with the idea of building a railroad that operated solely under TT&TO rules.

NKP: The Nickel Plate has been fully operational since around 2005, and it has exceeded my ambitious expectations. Concerns that it would be difficult to find 20 fellow modelers who would share my interest in timetable and train-order operations proved groundless.

I know of at least 35 modelers within a 2-hour drive who comprise the regular crew and extra board. Some of them aren't veterans at TT&TO ops, but our practice of assigning two-person crews to all freight and passenger trains ensures at least one of the crew knows the railroad and has a decent grounding in this operating system. And mistakes generate laughs, not retribution.

One lesson I learned early on is that you shouldn't "dumb down" or otherwise modify the objectives of the railroad to accommodate the least experienced or less enthusiastic crew members. I've often heard someone say, "Model railroaders can't be expected to know or do all that." Yes, they can!

I made some accommodations on the Allegheny Midland and came to deeply regret them. If you base your operations on prototype practices and help newcomers learn the basics, there is literally nothing (other than railroad-Morse telegraphy, perhaps) that the average modeler can't come to understand, appreciate, and finally enjoy.

## 11 Think ahead ... but not too far

It's indeed good to plan ahead. But as any military officer will tell you, a plan is good only until the first shot is fired. So it is with a model railroad. Planning ensures you're moving toward a specific goal, but the details along that path may have to change, sometimes drastically.

AM: I had drawn a  $\frac{3}{4}$ "-scale track plan for the AM before our house was finished. The completed railroad stayed pretty close to the original plan, but several features fell by the wayside. For example, I'd planned to run a shortline railroad along and about halfway up the ridge behind South Fork Yard. But it dawned on me that would reduce the apparent height of the supposedly towering ridge by reintroducing HO scale at the midpoint. And I planned a coach yard for one corner of the benchwork at Sunrise, Va., only to have Jim Boyd point out that it would be more beneficial to build the aisle side of the ridgeline there



The AM was dispatched using an authentic Union Switch & Signal CTC machine, "kitbashed" from salvaged parts by Rod Loder. It was never fully operational but still provided a realistic job for the dispatcher.




Plans to locate the desks for the two operators alongside the interlocking plants they were to operate would have blocked both main aisles, so they were relocated out of the way. The Charleston operator's desk also serves as Tony's workbench.

to establish the sense of the AM following a deep river valley.

NKP: I'd envisioned the Linden and Cayuga, Ind., operators sitting at a desk near the Monon and Chicago & Eastern Illinois crossings, respectively. They could then also handle the interlocking plant machinery. But those desks would have juttied out into very busy aisles. I'm therefore automating the Cayuga interlocking using Iowa Scaled Engineering's new Interlocking in a Box (IIAB) kit.

I envisioned a telephone system with a phone at every town. But it soon became apparent that it was more realistic to have the two operators, who cover the four stations in each aisle, handle OSing (reporting the passage of) trains past their stations to the dispatcher. The

NMRA's new Layout Command Control (LCC) standard is designed to handle via a separate bus all digital commands not specifically involving locomotives, thus relieving the train-control bus of a lot of traffic that can slow down command signals. Among the projected uses is a plug-and-play telephone system, so we'll see whether that adds flexibility without compromising realism.

I'm very pleased with the aesthetics and operation of my second basement-size model railroad. Judy and I don't envision any future relocations. Should that happen, however, despite all my hard-won experience, I'm sure I'd have to start anew with a very clean slate. I'd have a lot to learn – which is, after all, what a hobby is all about! 

# A signal system to

Meet the Human Model Railroad Interface – paper signals allow prototypical operations without all the wiring and expense

**By Bruce Carpenter**

Photos by the author



Frankfort, Kan., is a typical intermediate signal location on the Kansas Subdivision. This view shows the key components of the system: the east and westbound signal locations, station sign, and spare signal holder.

# FIT ANY RAILROAD



**Fig. 1 Train order signals.** Bruce made these paper signals for his Milwaukee Road layout. The paper printouts are switched to show the proper indication.



**Fig. 2 Signal set.** This photo shows the signals required for West Sullivan on Phil Buck's Union Pacific Kansas Division layout. Since only one movement is possible at a time, some of the signals can be used for the main and the siding. Consult specific railroads' operating and signal rules for exact signal indications and definitions.

**O**n most operationally based model railroads, a working signal system seems to be on everyone's wish list, in one form or another. I fell into that category when I built my HO scale BNSF Ry. Chillicothe Subdivision and my HO scale Milwaukee Road Rocky Mountain Division.

There are lots of things to consider when thinking about signals, though. Do you install them with relays or use one of the many computer-based systems? Do you build a Centralized Traffic Control (CTC) machine or use a computer monitor? Regardless, it's a lot of design, research, wiring, programming, time, and especially, money.

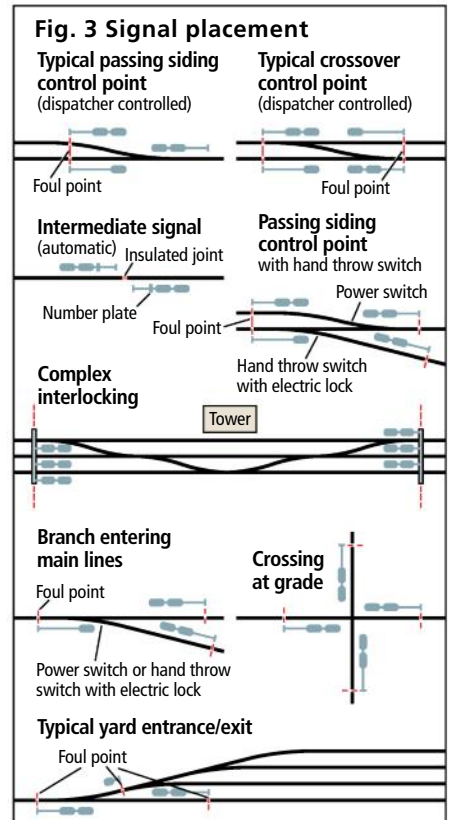
When my friend Phil Buck decided to build a modern-day version of Union Pacific's Kansas Division, signals were on his wish list, as well. Given the volume of traffic expected during each operating session – as many as 25 trains per session – the best way would've been to install a full-blown

CTC system with control logic and operating block signals. Although the railroad is wired with individual blocks for an eventual signal system, a CTC system didn't fit Phil's budget.










In the end, when it came time for the first operating session, we settled on Track Warrant Control (TWC), via Family Radio Service (FRS) radios. I put together an exact copy of a UP track warrant form, and Phil had several pads of forms printed for the crews to fill out in the field. We knew the dispatcher was going to have his hands full making the "paper fly" to keep trains moving.

The first few sessions went fairly well, but our worst fears came true: the dispatcher was overwhelmed at times, causing sessions to end prematurely. After about a year of this, it was hard to get a dispatcher to step up to the task, attendance started to suffer, and sessions were ending before the operating schedule was completed.

In most cases, you could cut your operating schedule



# Signal indications

-  **1. Clear**  
Proceed
-  **2. Advance Approach/Approach Medium**  
Prepare to stop at second signal
-  **3. Approach**  
Prepare to stop at next signal
-  **4. Diverging Clear/Medium Clear**  
Divert to or from main line (at reduced speed)
-  **5. Diverging Approach/Medium Approach**  
Divert to or from main line, prepare to stop at next signal
-  **6. Approach Diverging**  
Prepare to take diverging route at next signal
-  **7. Stop/Proceed (Signal has number plate)**  
Stop and proceed at restricted speed, stopping short of obstruction ahead (switch, locomotive, car, broken rail, etc.)
-  **8. Restricting**  
Proceed at restricted speed, stopping short of obstruction ahead (switch, locomotive, car, broken rail, etc.)
-  **9. Stop**  
Stop and stay

## Definitions

**Advance Approach:** Be prepared to stop at second signal.

**Approach:** Be prepared to stop at next signal. A train exceeding medium speed must at once reduce to that speed.

**Restricted Speed:** Proceed at a speed not exceeding 20 mph, prepared to stop within one half the distance of an obstruction, locomotive, standing car, switch, broken rail, or other obstruction.

## Signal progression examples

### **Straight Routes:**

Clear, Approach, Stop

Clear, Advance Approach, Approach, Stop

### **Diverging Routes:**

Entering passing siding to stop:

Clear, Approach Diverging, Diverging Approach, Stop

Entering passing siding and exiting other end of siding:

Clear, Approach Diverging, Diverging Clear, Clear

Crossing from one main to another to stop:

Clear, Approach Diverging, Diverging Approach, Stop

Crossing from one main to another and continuing:

Clear, Approach Diverging, Diverging Clear, Clear

**Note:** In an advanced system, Approach Diverging (or similar) can be used in advance of a Diverging signal.

back, but since Phil's layout is part of a larger interchange system where the cars are needed on other railroads, this wasn't an option. It was clear something needed to change. So, what do we do now?

### **A crazy idea**

Some of my best or screwiest modeling ideas happen while mowing our 5 acre property. Phil's signal dilemma was no exception. The inspiration came from when I built my second railroad, a version of Milwaukee Road's Rocky Mountain Division.

I needed only a few train order (T.O.) signals and didn't want to mess with the wiring and three-position semaphore signal controls. So, I came up with an idea to make non-operating train order signals that could be easily changed using a fixed base/foundation at each train order office (see **fig. 1** on the previous page).

I found some suitable T.O. semaphore signal head photos on the Internet and resized them for HO scale. I duplicated and printed them on photo paper. Then, I used a black permanent marker to darken the reverse side of the signal. I mounted them to Oregon Rail Supply signal masts and bases, then I finished them off with some ladder stock and I was in business!

Each T.O. office has a variety of signals stored in holders near the office. The operator exchanges the appropriate signal prior to the dispatcher issuing the orders, in advance of the approaching train. Once the orders are retrieved, the train crew replaces the "19" or "31" signal indicating the presence of a train order with a "stop" T.O. signal.

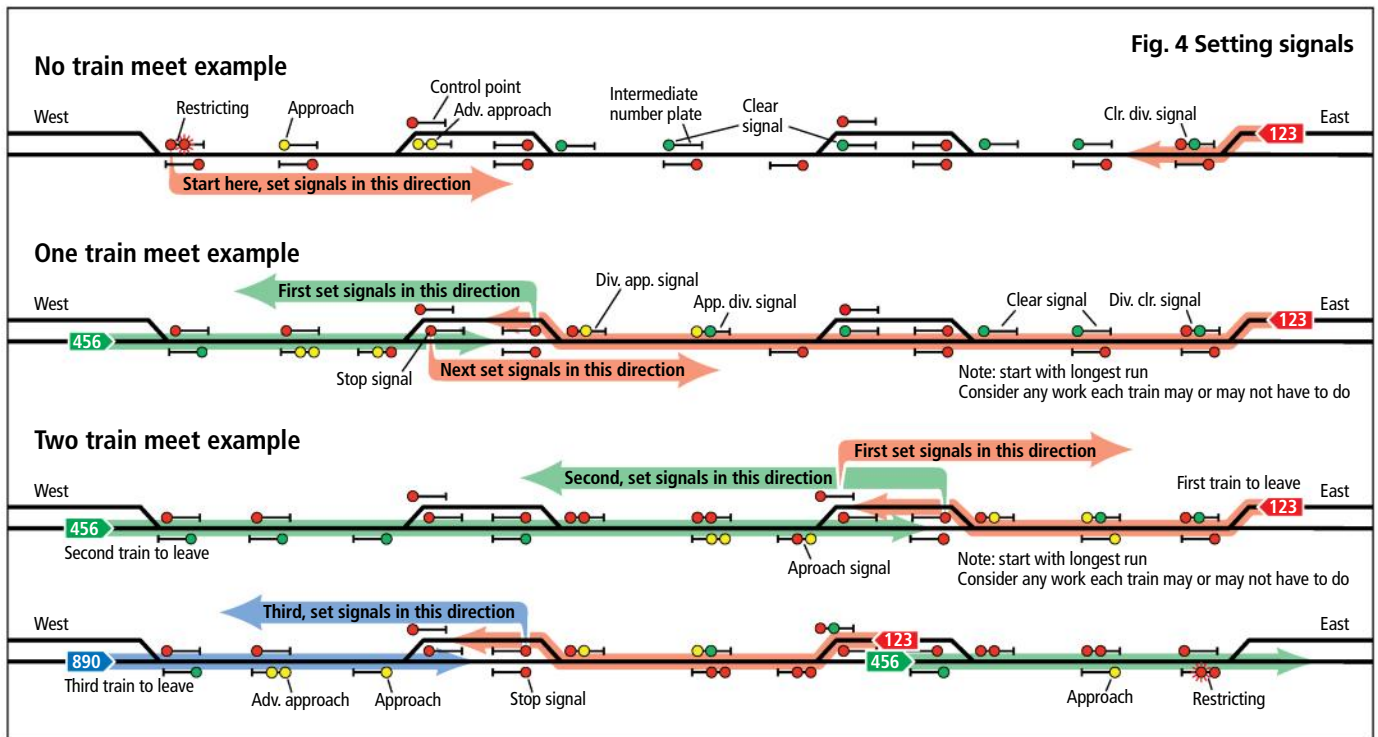
Why couldn't this be incorporated on a broader scale, I thought? It could be a neat, inexpensive way to try out a signal system without spending a ton of time and money, only to find signal placement may be incorrect or there are operational issues that need additional consideration.

### **What you'll need**

Depending on the railroad you model, most signal systems are very similar, basically showing a crew when they are to proceed, stop, or be diverted from a main line. Since your dispatcher is the "logic" and must walk around and manually set and/or place the signals, it's probably better to crawl first, before running.

You can get more advanced if you like later, but in this article, I'm focusing on seven to nine of the most basic signal

Fig. 4 Setting signals



indications, depending on your railroad (some railroads may have over a dozen signal indications), and basic definitions. They're shown in the boxes on the previous page. Indication names may vary by railroad, but have similar meanings.

Next, you'll need to determine how many signal sets you need on the railroad. Every signal base gets a permanent stop or restricting signal, so you'll need to print more stop signals than any other signal type. The signals needed at one location on Phil's layout are shown in **fig. 2**, on page 67. Once you have them printed, the sheets need to be laminated (10 mil thickness is a perfect fit for the game piece holders I used as signal bases).

Now, along the right of way, glue signal bases in the appropriate locations. The bases I used were purchased from eBay, searching under "plastic game piece holder." Then, carefully glue permanent stop and restricting signals into their respective bases. Make sure to leave the front side free so you can place alternate signal aspects in front of the stop signals.

Carefully cut out the rest of the signals and place them along the railroad in the signal holders. Signal holders can be made from round or square plastic tubing or pipe with a simple bottom glued in place. See **fig. 3** for examples of where to place signals in various situations.

## No excuses now

It's time get rid of the "Mother, may I" and "Free for All" method of operations.

# Human Model Railroad Interface (HMRI)

Offers a low-tech, high-impact alternative

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Minimal expense

Prototypical

Offers speed signaling or route signaling

No wiring, programming, or detection

Any scale

Can be test bed for the future

**Human Model Railroad Interface** also offers all the features of Java Model Railroad Interface (JMRI) and Computer/Model Railroad Interface (C/MRI), but without the hardware, wiring, and programming. All the applicable signal rules and CTC features can be incorporated for both 261 territory (signaled in both directions, both single and double track) and 251 territory (signaled in current of traffic, double track).

## Key items you need to know

### Two signal types

**Absolute:** Signals that are directly controlled by the dispatcher and are identified by lack of number plates. Note: A signal displaying stop (all red) means "Stop and Stay." It can't be passed without permission from the dispatcher, or until a more favorable signal is displayed.

**Intermediate:** Signals between Control Points identified by the presence of number plates (referencing the nearest milepost). A signal displaying restricting (all red) means "Stop and Proceed at Restricted Speed." It can be passed without dispatcher permission. Intermediate signals are useful on larger layouts with lots of distance between passing sidings. This allows trains of the same direction to occupy the same block as other trains, without dispatcher interaction.



**Fig. 5 A meet in progress.** Union Pacific 5289 meets UP 7995 at West Sullivan, Kan. Bruce's friend Phil Buck installed a signal bridge for the siding. The signal on the ground is for the main line. The signals are placed at the fouling point of the two tracks. Note the spare signals in the holder, attached to the fascia.



"Diverging Clear, west end of Sullivan," the crew of UP 7995 announces on the radio. Now that UP 5289 East has passed, the dispatcher has lined the mainline switch to reverse and has given the UP 7995 West a signal to depart from West Sullivan.



As UP 7995 West passes the signal mast at the control point, a crew member pulls the Diverging Clear signal out of the signal base and places it in the signal holder located on the fascia. The Stop indication is revealed when the Diverging Clear signal is removed.

## Dispatcher's role

1. Needs to know the progression of railroad signals (As usual, the dispatcher will make or break your operating session).
2. Places the appropriate signal, in correct progression, starting at the end point for each train (basically, working backward). Signals are located along the railroad, stored in plastic holders. **Figure 4** shows some typical signal progression scenarios.
3. Handles all switches within control point and/or interlockings. Switches can be powered or hand operated.
4. Lines all switches back to normal.
5. Finally, refrains from taking signals down and changing routes in advance of approaching trains. As in the real world, this can present some serious problems on your railroad. (If the route needs to be changed, make sure the approaching train is stopped at a control point prior to where route is to be changed). Usually, it's best to set the route and let it play out.

## Train crew's role

1. Don't handle any switches or place any signals
2. Pull the front signal out of the holder and place it in the signal storage holders, as the lead locomotive breaks the plane of the signal mast. This simulates the signal being set back to stop as trains pass by.

It's time to put your hard work building a model railroad to good use. If all goes well and the simple rules above are followed, your operating sessions should be much smoother. **Figure 4** on the previous page shows how to set up a meet, and **fig. 5** shows two trains meeting.

Prototype rule books and other information can further enhance the realism

and detail of using an operating signal system. Have some simple signals classes with your crew before you begin your operating sessions. You can keep planning for operating signals in the future, but feel free to give this stopgap method a try; it'll be worth your efforts, and your operating crews will get a kick out of it. Good luck; the sky's the limit. **MR**

*Bruce is a chief dispatcher in Fort Wayne, Ind., for Norfolk Southern's Lake Division. His other interests are collecting local railroad memorabilia and spending time at his restored Chesapeake & Ohio caboose on the shores of Lake Superior. He lives near Wapakoneta, Ohio, with his wife, Jackie, and two golden retrievers.*

# The "I. M. Dunn Co." – An American Classic

There was a time when thousands of different kinds of coal yards dotted the American landscape and most were serviced by the railroad. Model railroaders love modeling them because they are loaded with railroad atmosphere. The coal yard (or sand and gravel yard) shown here is totally unique and was designed by George Sellios. It's a pure craftsman kit requiring some skill, but after you've spent many enjoyable hours assembling it, you'll be proud to say "I BUILT IT."

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# Union Pacific's Spine

A photograph of a Union Pacific train carrying large green pipes, with a windmill in the foreground and a river in the background.

**T**he Union Pacific has some of the more colorfully named routes in the country. The “Rabbit Line” runs through East Texas, the “Tucumcari Line” connects Kansas and New Mexico, and the famous “Feather River Corridor” is in California. Running up the middle of the North American continent, from Kansas City northward to St. Paul, is UP’s aptly named “Spine Line.”

As a professional track plan designer, I was asked to develop an N scale version of the Spine Line that fit into a 10 x 17½-foot space at one end of a basement room. Just about the time I finished that design, my client told me he had a friend who also wanted to model the Spine Line

in an identical space – only this time, in HO. Fitting a satisfying model into the same square footage in that larger scale required a different approach, but the results may be useful for anyone trying to represent a single-track Midwestern prototype in a modest space.

## The Spine Line

The Spine Line – formerly known as the Short Line – was once the major north-south route of the Chicago, Rock Island & Pacific RR. The Rock Island finished the route by acquiring the St. Paul & Kansas City Short Line RR in 1913.

The Rock Island came to an inglorious end in 1980 when it was

dissolved in bankruptcy. Other railroads moved in to lease or buy the Rock Island’s still-valuable assets, including its rights-of-way, and the Chicago & North Western snapped up the Spine Line. The C&NW made significant upgrades to the Spine Line’s infrastructure as traffic increased through the 1980s and ’90s. Finally, in 1995, the C&NW merged into the Union Pacific.

This is granger country. Much of the Spine Line runs through open farm fields and past large grain elevators. But traffic is by no means limited to grain. The Spine Line provides an especially important link between Des Moines and the rest of the world, and trains between Des Moines and the interchange with

# Line in HO and N

Two approaches to modeling a busy Midwestern trunk line

By Bob Sprague



A southbound Union Pacific unit pipe train rolls past farmland near Buckeye, Iowa, on the UP's Spine Line on July 9, 2007. Bob Sprague's HO and N scale track plans include plenty of space for bucolic scenery like this. Craig Williams photo

UP's east-west Overland Route at Nevada, Iowa, can be quite frequent.

Nevada (pronounced nuh-VAY-da by the locals) is an interesting spot. The Spine Line crosses under the Overland Route east of town at Devil's Hollow. When the C&NW acquired the Spine Line, two wyes were built, connected by the 1-mile-long Nevada Subdivision. The wye on the Spine Line is called "Chicago Junction," while the junction on the

## Railroad at a glance

**Name:** The Spine Line

**Owner:** Union Pacific (formerly Chicago, Rock Island & Pacific, followed by Chicago & North Western)

**Location:** Kansas City, Kan., to

St. Paul, Minn.

**Length (overall):** 465 miles

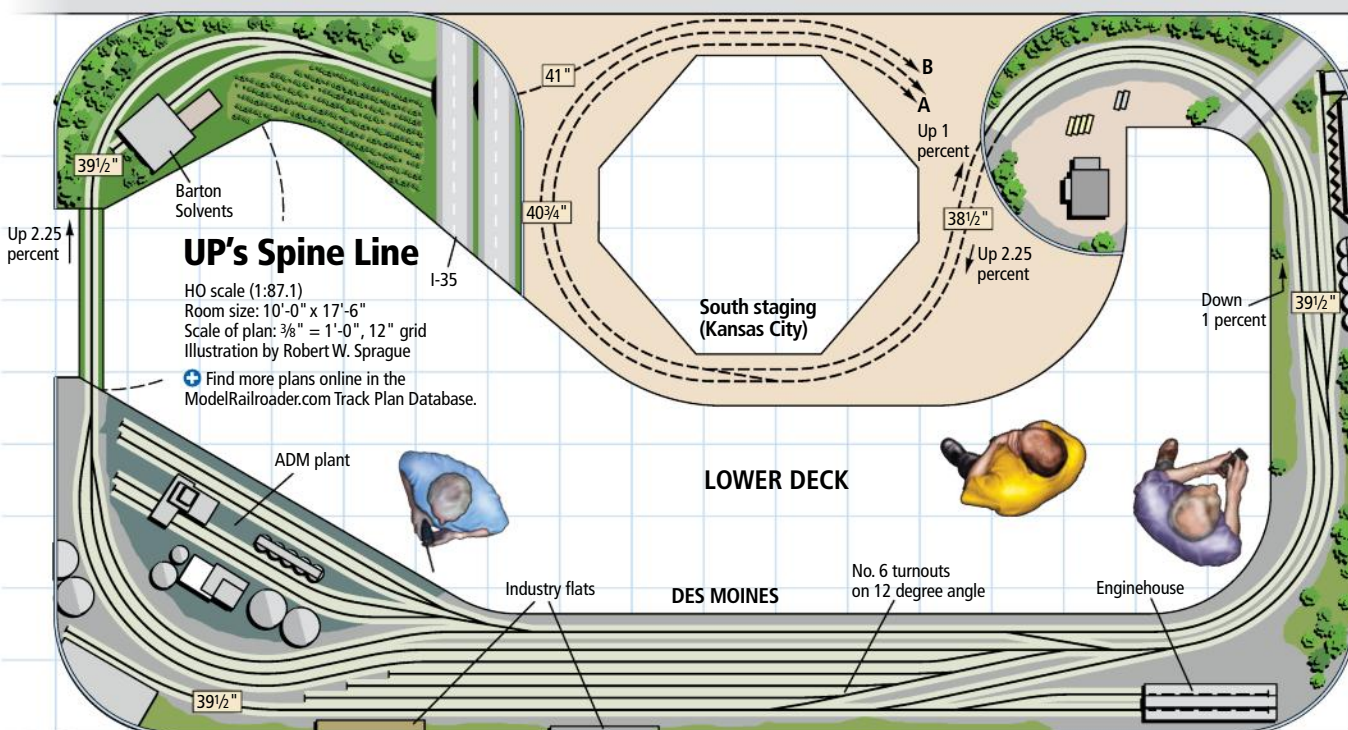
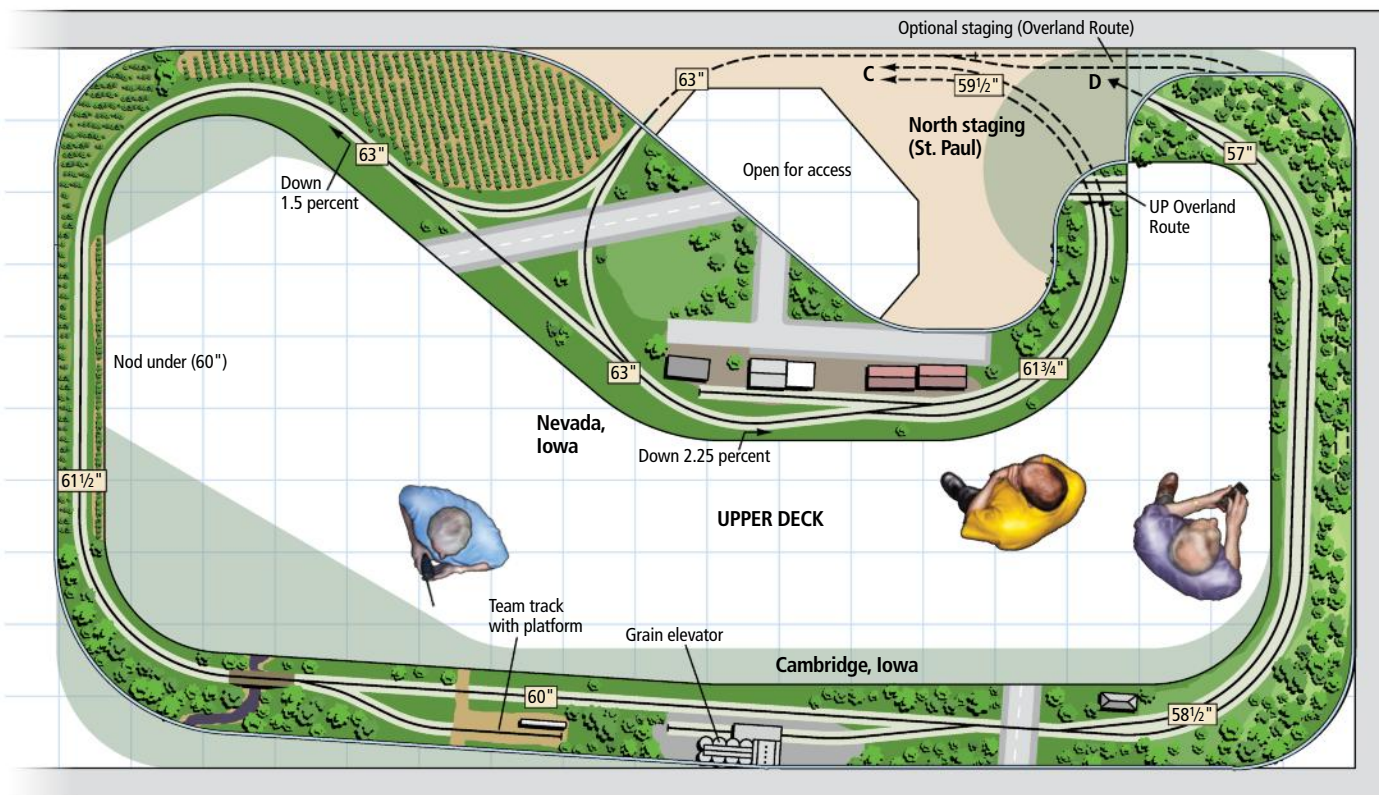
**Length (modeled portion):** 33 miles

**Profile:** single-track main line

**Prominent modeled locations:** Des Moines Yard; ADM (Des Moines); Heartland Cooperative grain elevator (Enterprise, Iowa); Chicago Junction wye (Nevada, Iowa)



Illustration by Rick Johnson



Overland Route is referred to as “Kansas City Junction.”

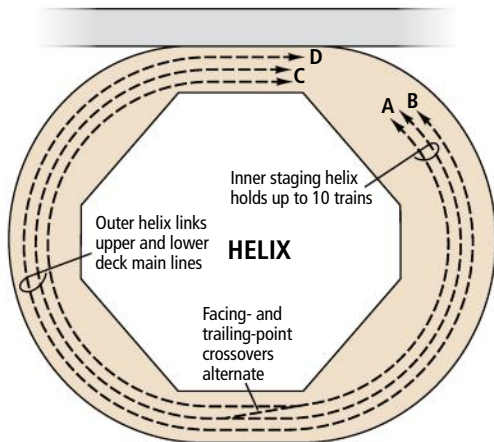
Because of its relatively high traffic density, I chose to represent the Spine Line from its compact, modelgenic yard in Des Moines north to the junction at Nevada for both the N and HO scale versions of the plan.

## Keeping it on the level in N

When planning staging for an N scale railroad, it's important to remember that even though the trains are smaller, our hands remain the same size. Staging that lies below the benchwork of another level needs just as much reach-in clearance for

maintenance and rerailing as it would in a larger scale. (See the N scale track plan on page 72.)

For this reason, it's especially nice to keep staging in N scale visible, or at least not underneath other track. I was able to steal enough space for the N scale version of the Spine Line to introduce a



## Track plan at a glance

**Name:** UP's Spine Line

**Scale:** HO (1:87.1)

**Size:** 10 x 18 feet

**Prototype:** Union Pacific

**Locale:** Eastern Iowa

**Era:** modern

**Style:** double-deck around-the-walls

**Mainline run:** 74 feet visible, plus helixes

**Minimum radius:** 27" (main),  
24" (industrial and wyes)

**Minimum turnout:** no. 6

**Maximum grade:** 2.75 percent

"mole" for staging. The loop in the far corner of the plan stands in for St. Paul to the north and Kansas City to the south. Though it's concealed behind the backdrop, pop-up access aisles are big enough to allow an operator to fiddle cars and reach track and trains when necessary. Optional crossovers allow either continuous or loop-to-loop operation. In this way, trains with empty coal hoppers can always be westbound, while trains returning with loads always proceed to the east. Grain and other commodities in covered hoppers can, on the other hand, go loop-to-loop, since there's no way to visually tell if the cars are empty or loaded.

Thanks to the mole staging, no grades are necessary, appropriate for the generally flat terrain of Iowa. Northbound trains appear from Kansas City staging and traverse an industrial area of Des Moines before entering the yard, which is a reasonable replica of the real thing. A large ADM plant (formerly Archer-Daniels-Midland) dominates the north end of the yard. From there trains cross a swinging gate and enter the Iowa countryside, passing scattered industries and spurs before arriving in Nevada.



A pair of Union Pacific switchers works the yard at Des Moines, Iowa, in June 2012. Des Moines Yard is the operational focal point of both Bob Sprague's HO and N scale UP Spine Line track plans. Michael T. Burkhart photo

If space allows, additional staging tracks off the wye in Nevada would allow interchange and run-throughs of trains to and from the Overland Route. The Overland Route itself is represented by a short segment of fake track and the bridge at Devil's Gulch, which disguises the disappearance of the Spine Line trains north into St. Paul staging.

The N scale plan should be simple to build because of its lack of grades or hidden track. It offers about the longest mainline run possible in the space without resorting to multiple decks.

## An over-the-top approach for HO

Things became more involved when I began to develop an HO scale version for an equivalent space.

Today's Spine Line is traversed by massive, modern six-axle diesels pulling auto racks and other long rolling stock. Even though many of these models can handle sharper curves, I tried to use the broadest radius possible. In my opinion, the 27" radius I allowed on the HO scale version of the Spine Line is bare minimum for modern mainline traffic. This decision didn't leave room for a peninsula in the larger scale. Achieving any decent mainline length was going to require two decks with a helix to connect them, so I made the helix do double duty as primary staging. The relatively

elaborate construction this arrangement requires is worth it for the operating flexibility it provides.

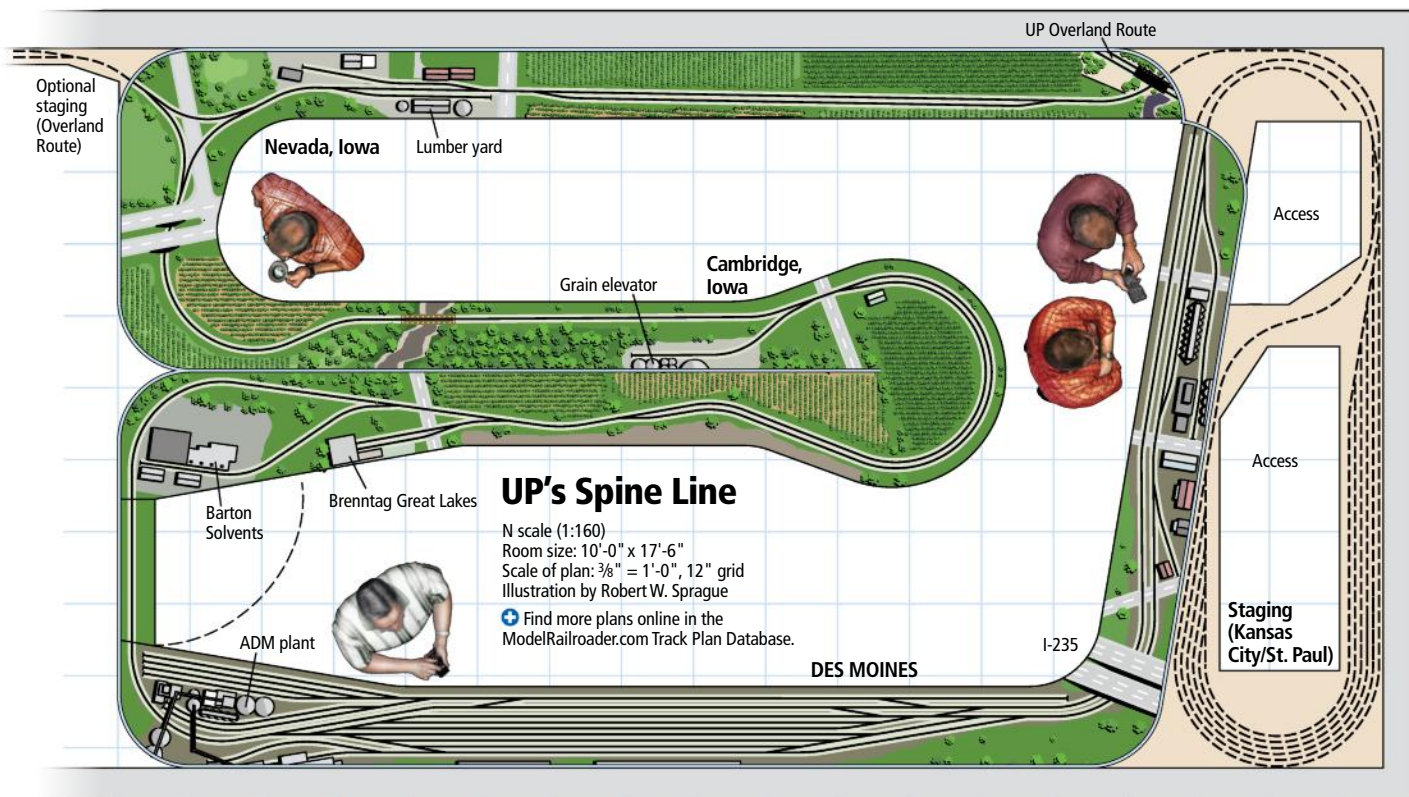
There are actually two helixes on the HO Spine Line. The double-tracked inner helix makes five turns. Like the "mole" on the N scale version, it represents St. Paul to the north and Kansas City to the south. Elongating the helix to an oval eases the required grade somewhat and also makes it possible to install alternating facing-point and trailing-point crossovers. This allows as many as 10 trains to be hidden on the helix and brought out in order or, with some care, randomly. The three-turn outer helix connects the main line on the lower deck to the upper deck. But because of the way trains enter and exit, this connection maintains a consistent left-is-south, right-is-north orientation between decks.

Some have worried that using a helix as staging might be impractical because a loose or broken coupler could send the back end of a train rocketing back down the helix, with disastrous results. This, I respond, could be said of any helix.

Have some faith – but to help the faith along, a mechanical or electrically actuated "parking brake" that raises a pin between the rails to catch an axle on each parked train might be in order. One or two vertical "windows" cut in the fascia would also help keep track of what's going on in the helix complex.

## MORE ON THE WEB

Model Railroader magazine subscribers can browse and search hundreds more track plans online at [ModelRailroader.com](http://ModelRailroader.com)



Union Pacific no. 3830 leads a southbound manifest freight out of Mason City, Iowa, on the Spine Line in June 2013. Though Mason City is north of the modeled area, the train is typical of traffic you'd see on the layout. Steve Smedley photo

There's space for a compressed version of Des Moines Yard on the lower deck, while the upper deck represents the more rural stretches of the spine line. The space above the helixes is put to use for Chicago Junction in Nevada, with some Overland Route staging sequestered behind a convenient nearby hill.

### Operating the Spine Line

Space will limit the Spine Line to no more than three or four operating crews, but those operators can be kept busy on either the HO or N scale versions.

One operator could serve as yardmaster. Both plans have yards that will

### Track plan at a glance

**Name:** UP's Spine Line  
**Scale:** N (1:160)  
**Size:** 10'-0" x 17'-6"  
**Prototype:** Union Pacific  
**Locale:** Eastern Iowa  
**Era:** modern  
**Style:** walkaround  
**Mainline run:** 59 feet  
**Minimum radius:** 15" (main), 12" (industrial and wyes)  
**Minimum turnout:** no. 6  
**Maximum grade:** none (flat)

provide good opportunity for classifying and breaking down trains. A local engineer can take turns out of Des Moines and service lineside industries up to Nevada and back. Additional operators could run through freights in either direction with enough frequency to provide the yardmaster and local engineer with a good deal of challenge.

Grain, coal, autos, and manifest freights – the Spine Line sees it all. Either design should offer a good deal of fun in both construction and operation along with a faithful representation of a Midwestern prototype. **MR**

*Bob Sprague is a professional layout designer and a frequent MR contributor.*



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Sawtooth skylights and a curved wall are signature features of Ben-Hur Freezer Co., built by associate editor Cody Grivno.

# How to model a **BIG INDUSTRY**

Mix kitbashing and scratchbuilding to model  
Ben-Hur Freezer Co. in 17 x 31 inches

**By Cody Grivno** • Photos by Bill Zuback

**M**y assignment for the Beer Line project layout was to model the Ben-Hur Freezer Co. The building, located at 634 E. Keefe Ave. in Milwaukee, is still standing, but now subdivided and used by several smaller businesses. Though the prototype structure still existed, I faced the dilemma of modeling an approximately 325 x 400-foot building in just 17 x 31 inches.

Instead of compressing the building, I tried to capture its flavor. Using satellite images from Bing, Google, and Historic Aerials ([www.historicaerials.com](http://www.historicaerials.com)), I could see the building had 12 rows of large sawtooth skylights, typical of those found on industries during the 1940s and earlier. Smaller ridge-style skylights with gable ends were used elsewhere.

The satellite images also revealed that the building had been expanded four or five times. Most of the additions took

place before 1955. Brick and block construction were used on the additions.

What stood out most, though, was the curved wall at the rear of the building. In 1948, the year our layout is set in, a pair of tracks followed the curve of the wall (we only had room for one). The track closest to the building appears to go inside Ben-Hur, perhaps for loading finished freezers or unloading raw materials. The cars on the outer track were presumably reached by steel bridge plates (metal plates placed between boxcars on parallel tracks).

To capture the look of Ben-Hur Freezer Co., I used an assortment of pieces from the Design Preservation Models (Woodland Scenics) Modular Building System, the roof from two Walthers Car Shop kits, assorted styrene sheet and strip from Evergreen Scale Models, and textured styrene sheet from The N Scale Architect.

## Beer Line series

**Jan. 2017:** The Beer Line addition

**Feb. 2017:** Benchwork and tracklaying for the Beer Line addition

**March 2017:** Scratchbuilding Steinman Lumber Co.

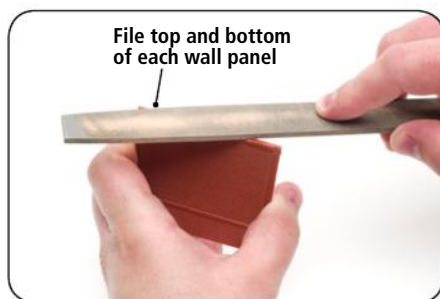
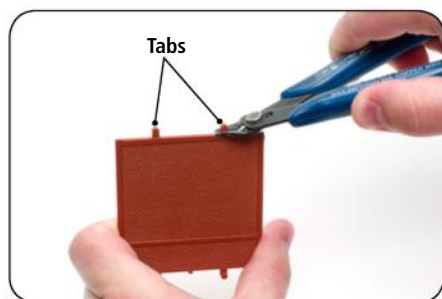
**April 2017:** Mix kitbashing and scratchbuilding to model Ben-Hur Freezer Co. in 17 x 31 inches

**May 2017:** Building the North Avenue Viaduct

**June 2017:** Using different techniques to build a cement plant complex

This was a challenging, yet rewarding, project. Even if you don't need Ben-Hur Freezer Co. for your layout, you can adapt the techniques shown here to model any large rail-served industry in a relatively small footprint.

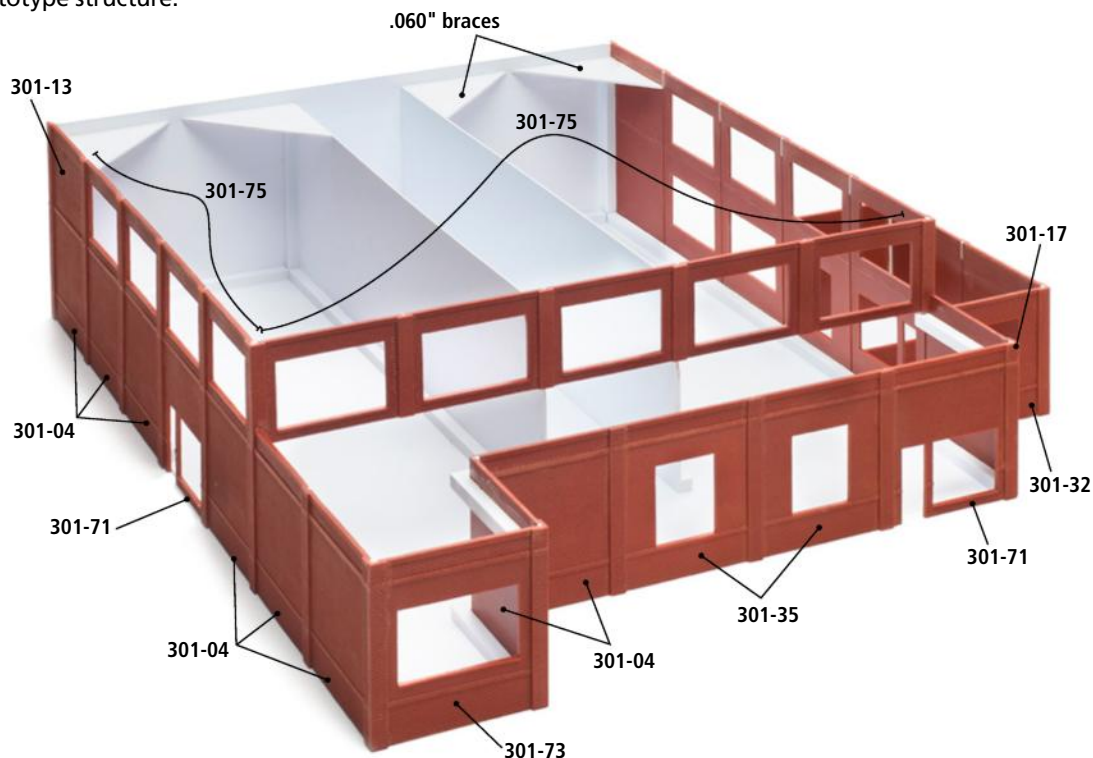
### 1. MANUFACTURING BUILDING



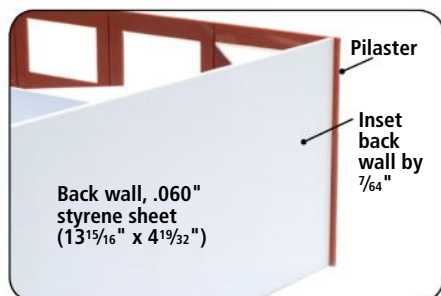
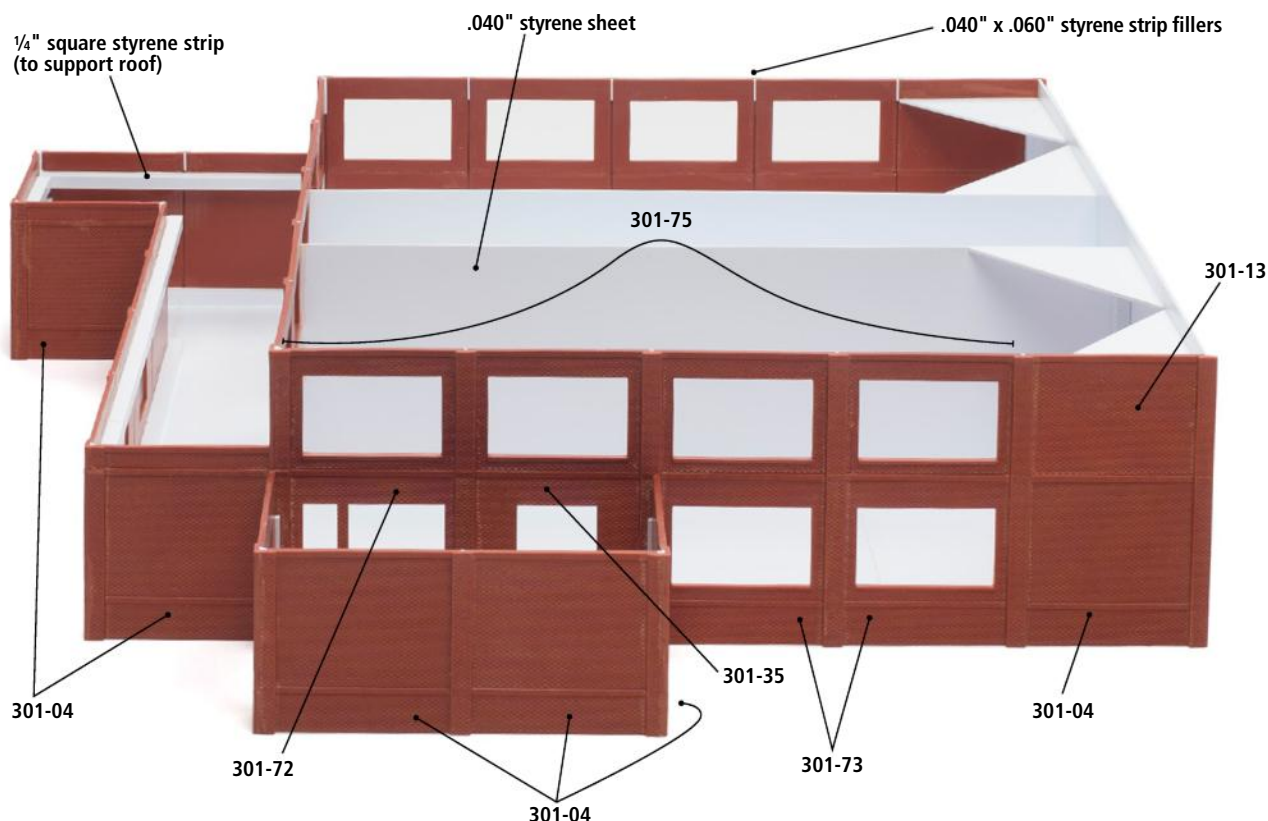
**I used parts** from the dock-level and one-story wall sections to assemble the front of the factory. The wall sections were reasonable matches for the prototype structure.

**I constructed the** manufacturing building for Ben-Hur Freezer Co. using parts from the Design Preservation Models (Woodland Scenics) Modular Building System. The key to success when working with modular wall sections is prepping the parts for assembly. First, I removed the tabs with a pair of sprue cutters. Then I used a file to smooth the top and bottom of each wall panel.

To make sure the pilasters would seat properly, I used a seam scraper to remove the ejector-pin marks on the flanges. There are a variety of seam scrapers on the market. Mine is Squadron Tools item no. SQ10203.

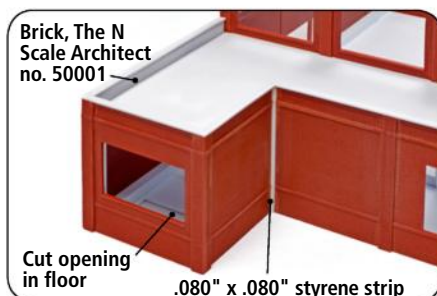


# 1. MANUFACTURING BUILDING (CONT'D)



With the front and side walls finished, I turned my attention to the back wall. Since the back won't be visible, I filled the opening with a 13<sup>15</sup>/<sub>16</sub>" x 4<sup>19</sup>/<sub>32</sub>" piece of .060" styrene, as seen in the left image. I inset the styrene 7/64" from the back edge. This will allow the warehouse portion of the industry to sit tight against the pilasters, making it less obvious the manufacturing building and warehouse are separate pieces.

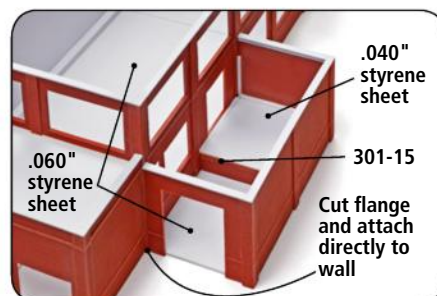
**Note:** The width of the back wall may vary depending on how much filing is needed on the wall sections.



Next, I installed the roof (.040" styrene sheet) on the one-story portion of the building. The sheet fits under the modular panels on the second story and on top of the 1/4" square strip I installed earlier. Don't forget to cut openings in the .060" styrene floor for adding the doors and windows.

The roof looked nice, but something was missing. Then it dawned on me. The backs of the modular wall panels are blank. To give the building a finished look, I used The N Scale Architect HO scale no. 50001 modern brick. The embossed styrene brick sheet is easy to cut with a no. 11 blade. I used Plastruct Bondene to attach the styrene to the modular wall panels.

I used .040" x .188" styrene strip for the concrete wall cap. To expedite the installation, I used butt joints instead of mitering the corners. The cap is flush with the front of the pilasters.

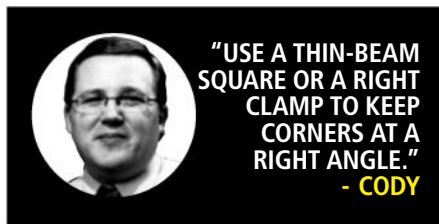


The middle photo shows one other trick when working with DPM modular wall sections. While the pilasters work well on outside corners, they aren't as good on inside corners. Here I used .080" x .080" styrene strip instead.

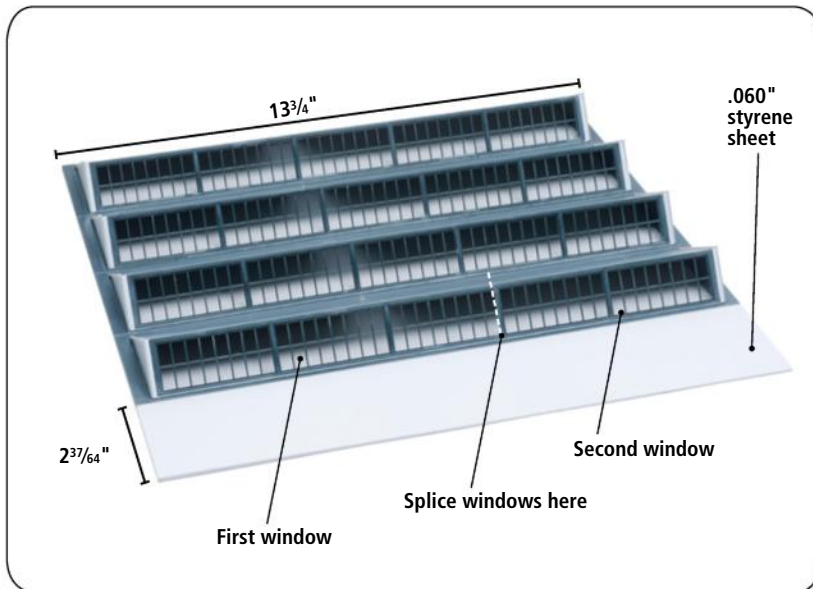
Taking inspiration from the full-size building, I added a covered truck dock on the right side of the building. I used a razor saw to remove the flanges on the sections for the front and back walls. I attached the front and back sections directly to the existing wall panels with liquid plastic cement.

Then I made a floor from .060" styrene sheet. I had to cut notches in the styrene so it would fit around the pilasters.

Finally, I added a dock, which I made with a dock-level wall (part no. 301-15) and .040" styrene sheet. See the photo at right. I again notched the styrene to fit around the pilaster.



## 2. ROOF WITH SKYLIGHTS



**Re-creating the roof** with saw-tooth skylights was actually one of the easiest parts of the project. The Walthers Car Shop kit (no. 933-3040) had a roof with skylights; I just needed to make it wider, which required two kits.

First, I used a razor saw to cut the edge off the first roof. Then I cut the second roof so the combined pieces measured  $13\frac{3}{4}$ " wide.

The roof was now wide enough, but not sufficiently deep. Getting a third kit didn't seem worth it, so I filled in the remaining area with a

$2\frac{37}{64}$ " x  $13\frac{3}{4}$ " piece of .060" plain styrene sheet.

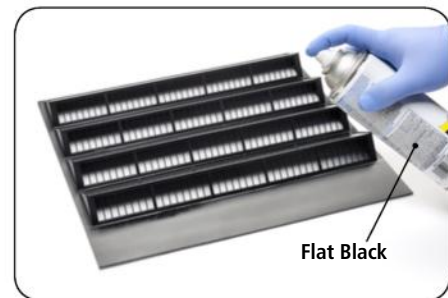
Next, I spliced the windows so they were five units wide. On the first window, I used a razor saw to remove the wide casing on the right.

On the second window, I made the cut to the left of the narrow casing, preserving the jamb detail and the wide casing on the right. I set the two pieces into the opening and applied glue from the back, eliminating the need for any bracing.

Use spray-paint in well-ventilated area and wear personal protective equipment

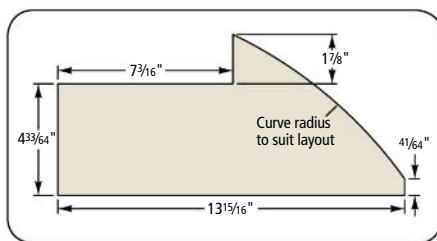


**The kitbashed roof** had plastic components in three colors. To ensure the final color would cover evenly, I spray-painted the roof with Rust-Oleum Light Gray automobile primer (no. 2081830).



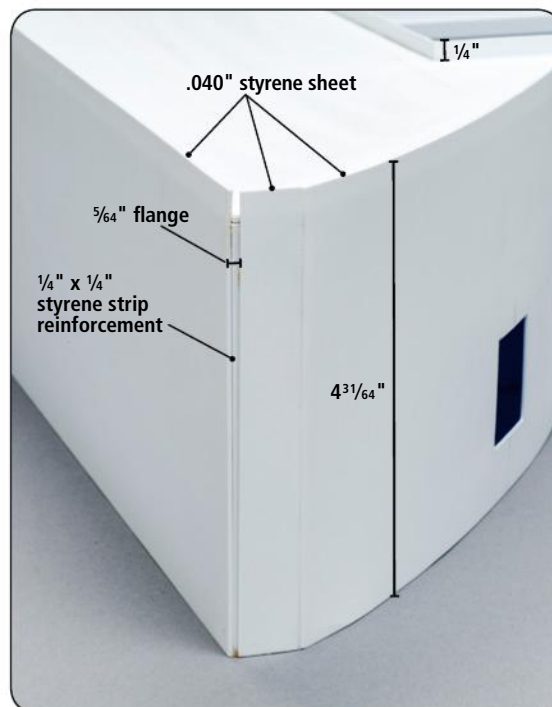
**I let the primer dry** thoroughly (at least 24 hours, or until there is no discernible paint odor). Then I applied the final color, Rust-Oleum Painter's Touch 2X Flat Black (no. 249127). Applying the Light Gray primer first made it easy to find any spots I missed with the black paint.

## 3. WAREHOUSE



**If there was** one aspect of this project that kept me up at night, it was the part of the warehouse with the curved wall. I studied satellite images and pondered the best way to re-create this distinct part of Ben-Hur Freezer Co. Then I had an "Aha" moment and decided to start with the roof.

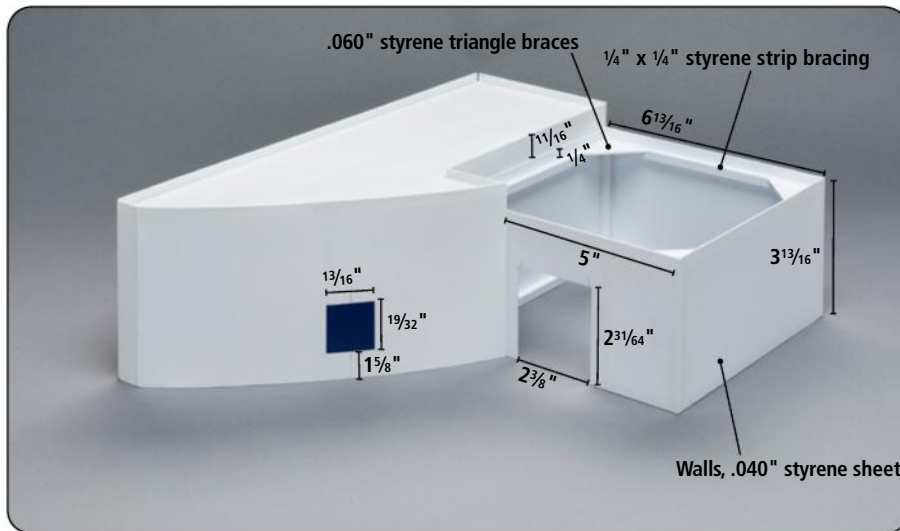
"Why the roof?" you may be asking. Well, if I had the basic shape of the building, I could attach styrene sheet to it. Using a paper template made to the dimensions shown above, I cut two pieces of .060" styrene sheet (one for the roof and one for the floor).



**Next**, I used .040" styrene for the subwalls. To capture the look of the full-size building, I left  $\frac{1}{4}$ " of styrene above the top of the roof. Before attaching the curved wall, I cut the opening for a roll-up door.

I also left  $\frac{5}{64}$ " between the .040" styrene sheet that I used for the side walls and the back wall. This provided enough room for the pilasters on the manufacturing building to overlap the flange on the warehouse.

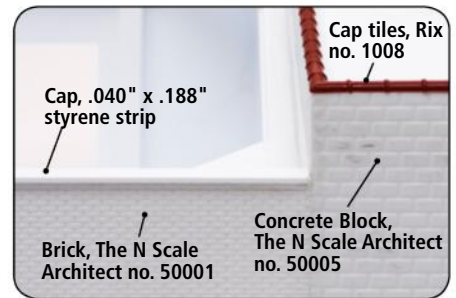
### 3. WAREHOUSE (CONT'D)



Then I turned my attention to the portion of the warehouse where freight cars enter to be loaded and unloaded. I built the subwalls from .040" sheet, but had some issues with the styrene warping. To remedy that, I added 1/4" x 1/4" styrene strip bracing

and .060" triangles in the corners. These fixes didn't completely alleviate the warping, but they brought the walls closer to square.

With the core for the warehouse additions completed, I was ready to attach the styrene sheet embossed with



brick and concrete block detail. Both are from The N Scale Architect.

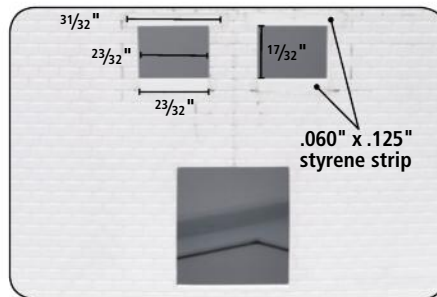
I attached the textured styrene to the .040" plain styrene with Plastruct Bondene. I used a wide brush to apply the liquid plastic cement, starting at the bottom and working my way to the top. Don't apply too much glue, as this may cause the textured styrene to melt.

I let the glue dry overnight before filing the textured styrene flush with the .040" subwalls. Then I attached Rix no. 1008 cap tiles to the top of the concrete block walls. I used styrene strip to represent brick cap.



I cut the brick and concrete block sheet slightly oversized on the front and back walls so it would overlap the sides. After I trimmed the excess styrene, I did touch-up work so the mortar lines would carry through the corners. I used a fine-tooth razor saw to open up the mortar lines on the brick, and jeweler's files on the concrete block.

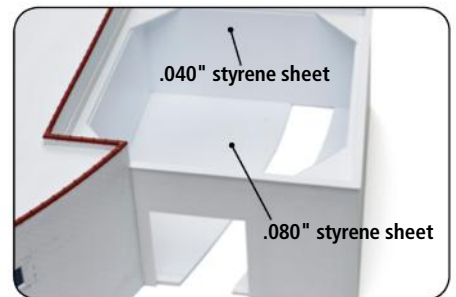
I have a bit of a reputation for not letting well-enough be. That was the case with the curved wall. I came across prototype photos that showed a pair of



glass block windows above each roll-up door.

To re-create that detail, I first cut a pair of rough openings with a no. 11 blade. Take your time with this so the blade doesn't wander off course and damage the concrete block detail.

Next, I used jeweler's files to smooth the styrene. I installed .060" x .125" styrene strip above and below the window openings. Then I cut, but didn't install, Depots by John no. 139 glass block. And yes, several people



commented that the wall looks like a face with an open mouth.

Since the area where the tracks enter the warehouse would be visible, I added some basic interior detail. The floor, which follows the profile of the track, is .080" styrene sheet. I used .040" styrene sheet for the walls.

Once the roof was added, I realized the walls weren't necessary. Only the front 1" of the floor is illuminated by room lighting. Everything else is in the shadows.

### 4. PAINTING AND WEATHERING



With the manufacturing building and warehouse complete, I washed the structures in warm water with dish soap added to remove dust and other impurities that might affect paint adhesion.

Then I sprayed the structures with Rust-Oleum Painter's Touch 2X Flat Gray primer (no. 120938). Unlike some

spray-paints that craze styrene, the Painter's Touch 2X line is plastic compatible. I'm also a big fan of this spray paint because it doesn't fill in fine details like mortar lines.

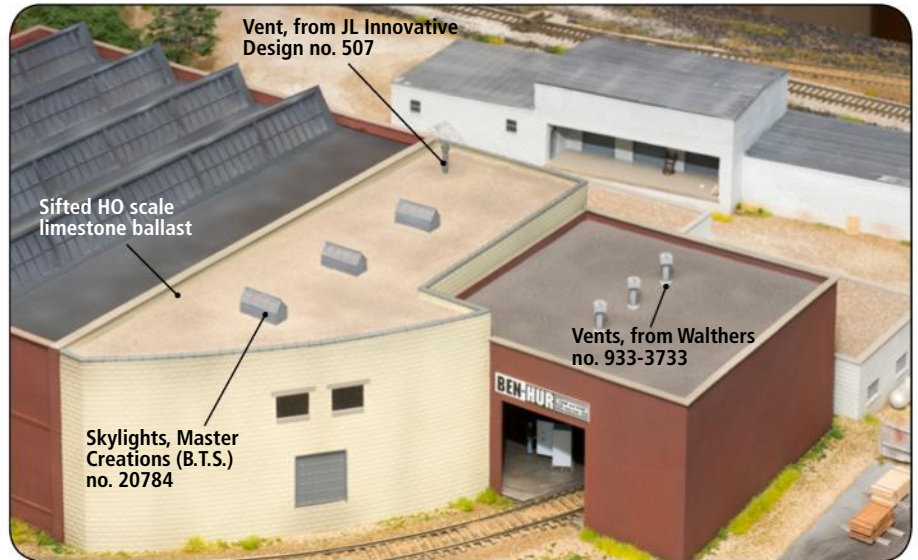
I let the paint dry over the weekend, which was more than sufficient. I was ready to apply the final colors to the manufacturing building and warehouse.

## 4. PAINTING AND WEATHERING (CONT'D)



I switched over to an airbrush to apply the final colors. I used Model Master no. 4882 Oxide Red for the manufacturing building and brick portion of the warehouse. Then I sprayed the block with the same company's Aged White, followed by Aged Concrete for the top and bottom trim on the block window.

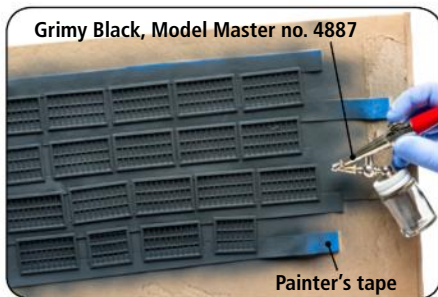
Next, I cut a piece of .040" styrene sheet for the roof on the brick portion of the warehouse and spray-painted it with the Flat Gray primer I used earlier. I secured the roof with liquid plastic cement.



I added vents from a Walthers kit and Arizona Rock & Mineral Northern Pacific N scale ballast for roof gravel.

On the concrete block part of the warehouse, I assembled and installed three ridge-style skylights from the

Master Creations division of B.T.S. I also painted and installed a white-metal vent pipe from a JL Innovative Design roof detail set. Then I applied sifted limestone ballast to the roof, securing it and the NP ballast with Scenic Cement.



The manufacturing building has 19 large windows. After attaching the windows to a large piece of cardboard with rolled masking tape, I airbrushed them Model Master no. 4887 Grimy Black. Attaching the windows to the cardboard made it easy to paint the plastic parts from all angles.

A tedious, but necessary, step before installing the windows is to scrape the paint off the gluing surfaces. I found a single-edge razor blade worked well for this.



The Design Preservation Models Modular Building System pieces with windows include clear styrene glazing. Since the manufacturing building doesn't have a detailed interior, I coated the back of the styrene with Testor's CreateFX Frosted Glass (no. 79634). This makes the glazing material translucent, while keeping the front shiny.

I attached the glazing to the windows with Woodland Scenics Scenic Accents glue. This is a pressure-sensitive




adhesive that comes out of the bottle white but dries clear and tacky. However, I had some problems with the glazing working loose over time. In hindsight, I probably should have used Testor's Clear Parts Cement or another stronger glue that's compatible with clear styrene.

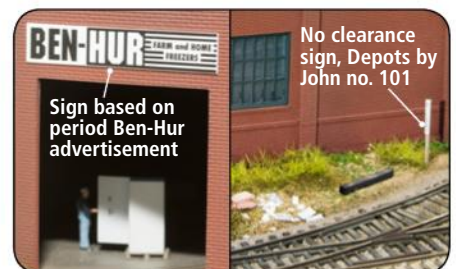
With the glazing in place, I secured the windows to the walls with Plastruct Bondene and a paintbrush. Once all of the windows were in place, I attached the sawtooth-profile roof.

## 5. FINISHING TOUCHES

I needed signs to finish the building. I found some period advertisements for Ben-Hur Freezers and gave those to associate editor Steven Otte, who prepared computer graphics to match. I attached the paper signs to .015" styrene before installation.

Finally, I set the manufacturing building and warehouse in place and

added scenery. I used a combination of Quikrete no. 1159 Tubesand, static grass, discarded HO scale newspapers, Woodland Scenics Clump-Foliage, and random debris from our scrap box. I also added a NO CLEARANCE sign from Depots by John to alert train crews of the close quarters around the warehouse. 



# Build a modern grade crossing

Combining multiple components results in a realistic HO scale scene

By Pelle Søbørg • Photos by the author

**When you model the Midwest,** there are some things you can't leave out: a grain elevator, a small town, and last but not least, a grade crossing. Many small towns in the Midwest were established around the railroad, and most of them have at least one grade crossing.

It can be a challenge to find the items needed to build a modern grade crossing. I used two of Walther's modern

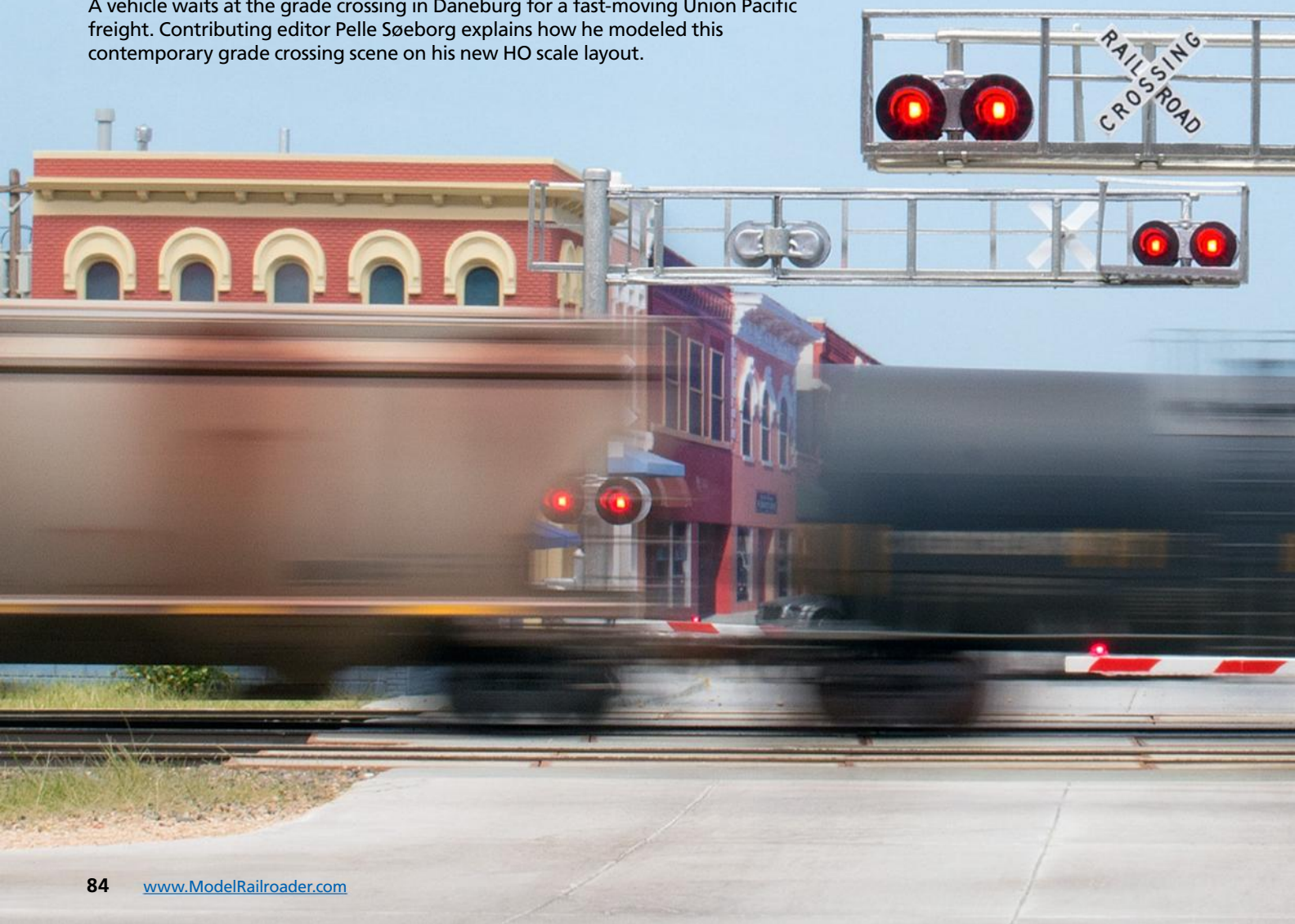
cantilever crossing signals; a set of non-operational crossing gates from NJ International, which I modified so they could be operated by a Tortoise by Circuitron switch machine; BLMA modern concrete crossing panels; and a Logic Rail Technologies Grade Crossing Pro circuit board kit.

My ambition was to illuminate the lamps on the gate arms. Each gate has

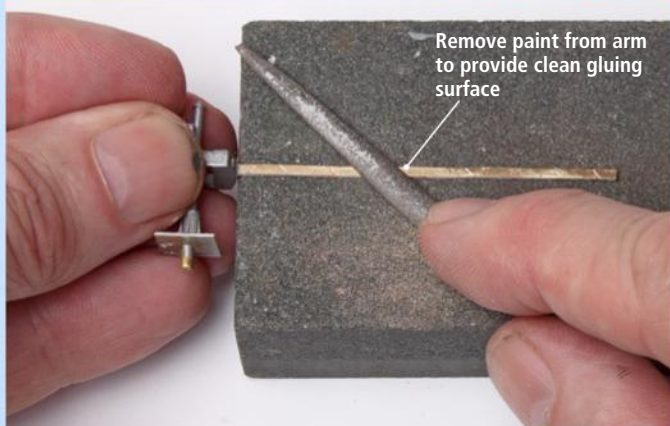
three lamps – two of them flash in an alternating pattern, the one at the tip is constant when the gate is down. This turned out to be a much bigger task than I'd imagined.

If you're looking to add some interest to your modern-era town scene, try adding a grade crossing. Not only do they look neat, but you can add some realistic lighting effects, too.

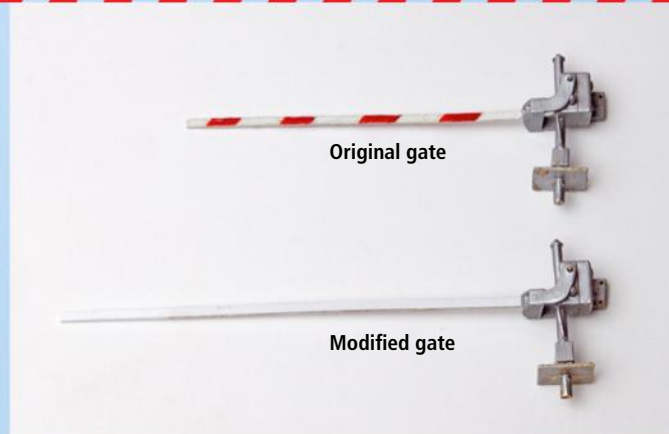
A vehicle waits at the grade crossing in Daneburg for a fast-moving Union Pacific freight. Contributing editor Pelle Søbørg explains how he modeled this contemporary grade crossing scene on his new HO scale layout.



## STEP 1 GATE MODIFICATIONS



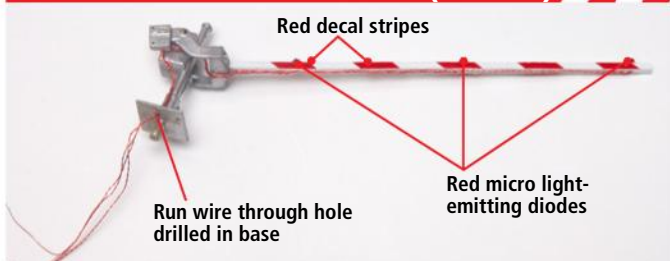
I had a pair of NJ International crossing gates (no. 1172) left over from my previous layout that I intended to use for my small town grade crossing. However, the arms were too short for the new width of the road, so I had to lengthen them. Before I modified the arms, I used a file to remove the paint from the metal castings.



I made arm extensions with a piece of .030" x .060" styrene strip sandwiched between two .010" x .060" strips. The .010" strips run the full length of the gate. I secured the styrene strip to the now-bare metal arms with cyanoacrylate adhesive (CA).



## STEP 1 GATE MODIFICATIONS (CONT'D)



I then drilled three vertical holes in each gate for the red micro light-emitting diodes (LEDs). With the holes completed, I painted the arms white and used sill stripes from a Microscale Union Pacific diesel locomotive decal set to add the red stripes. While I was at it, I freshened up the silver sections with a new coat of paint.

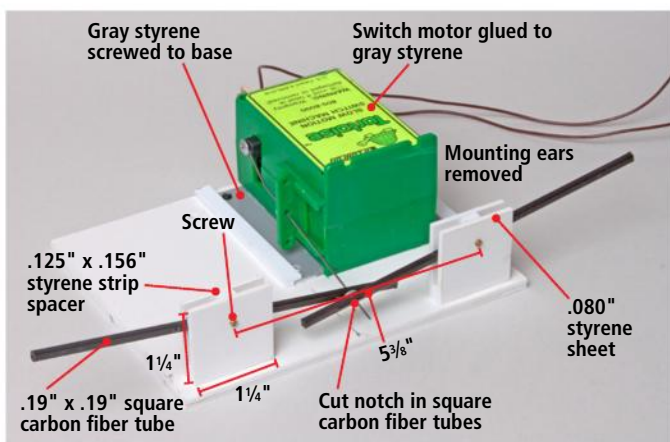
I secured the LEDs to the gate arms with canopy glue. This is a type of glue used to secure canopies to wood and other materials on remote-controlled airplanes. I used the



same glue to attach the wires to the bottom of the gate. I then pulled the wires through a hole drilled in the base.

Finally, I painted the wires under the gate arm white and the remainder silver to hide them as much as possible (they will still be visible from certain viewing angles).

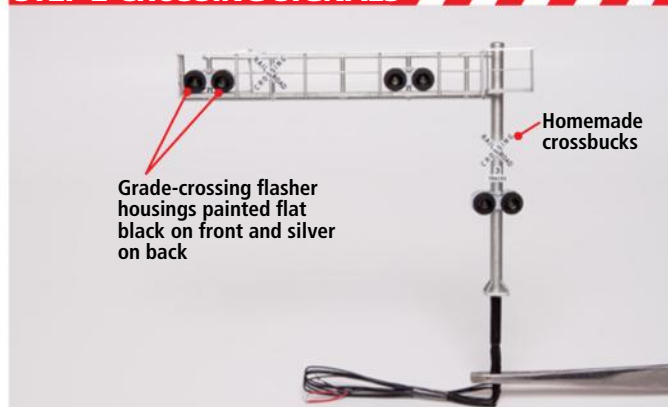
To give the crossing gates a uniform flat finish, I sprayed them with a coat of Vallejo Matte Varnish using an airbrush. I tested the LEDs to confirm they worked before installing the gates.



I made an operating mechanism for the gates using a Tortoise by Circuitron switch motor and a set of motion arms made from square carbon fiber tubes (brass or styrene would also work).

The mechanism is a copy of the one I used for the grade crossing on my previous layout, which I wrote about in the June 2012 issue of *Model Railroader*.

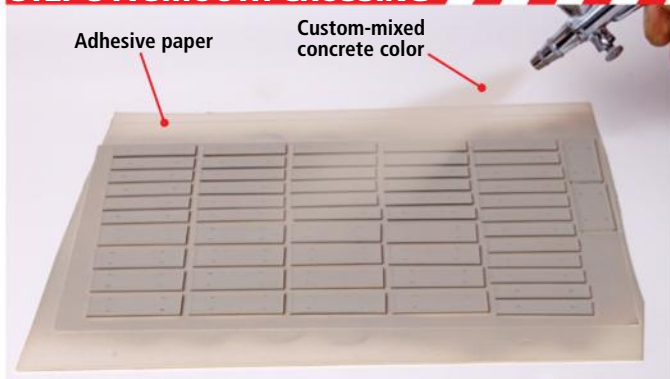
## STEP 2 CROSSING SIGNALS



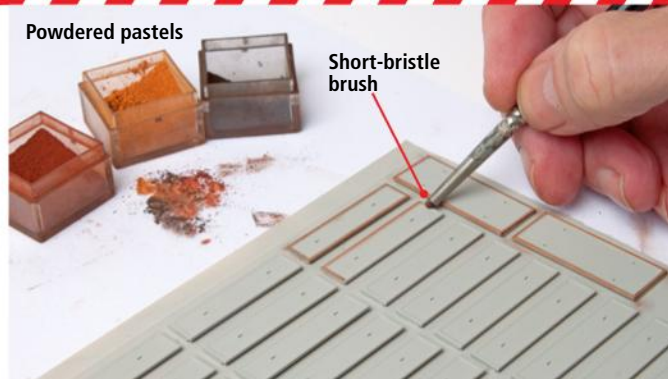
I used a pair of Walthers cantilever crossing signals (949-4330) for my crossing. I made a few modifications to improve the appearance of the factory-assembled signal.

I brush-painted the grade-crossing flasher housings flat black on the front and silver on the back. The printing on the crossbucks was smudged, so I replaced all of them with homemade signs glued to .010" styrene.

## STEP 3 A SMOOTH CROSSING



I used BLMA's grade crossing panels where the road crosses the tracks [BLMA was purchased by Atlas Model Railroad Co. – Ed.] The plastic panels are molded in pairs, which I separated and placed on a sheet of adhesive paper glued to cardboard. I sprayed the panels with a concrete color mixed from equal amounts of Model Master no. 1730 Flat Gull Gray, no. 1706 Sand, and no. 1768 Flat White.



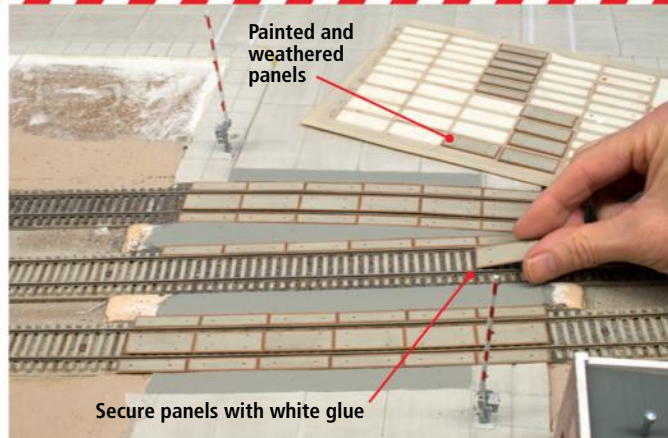
Real concrete crossing panels have a metal edge. When the panels are new, the edge has an orange coating. Over time, the coating wears off and the metal turns a rusty-brown color. I simulated the aged metal appearance by applying light rust, medium rust, and brown pastels.

Though the powdered pastels stick well to the flat paint, I sealed them with a coat of the Vallejo Matte Varnish.

## STEP 4 INSTALLING THE PANELS

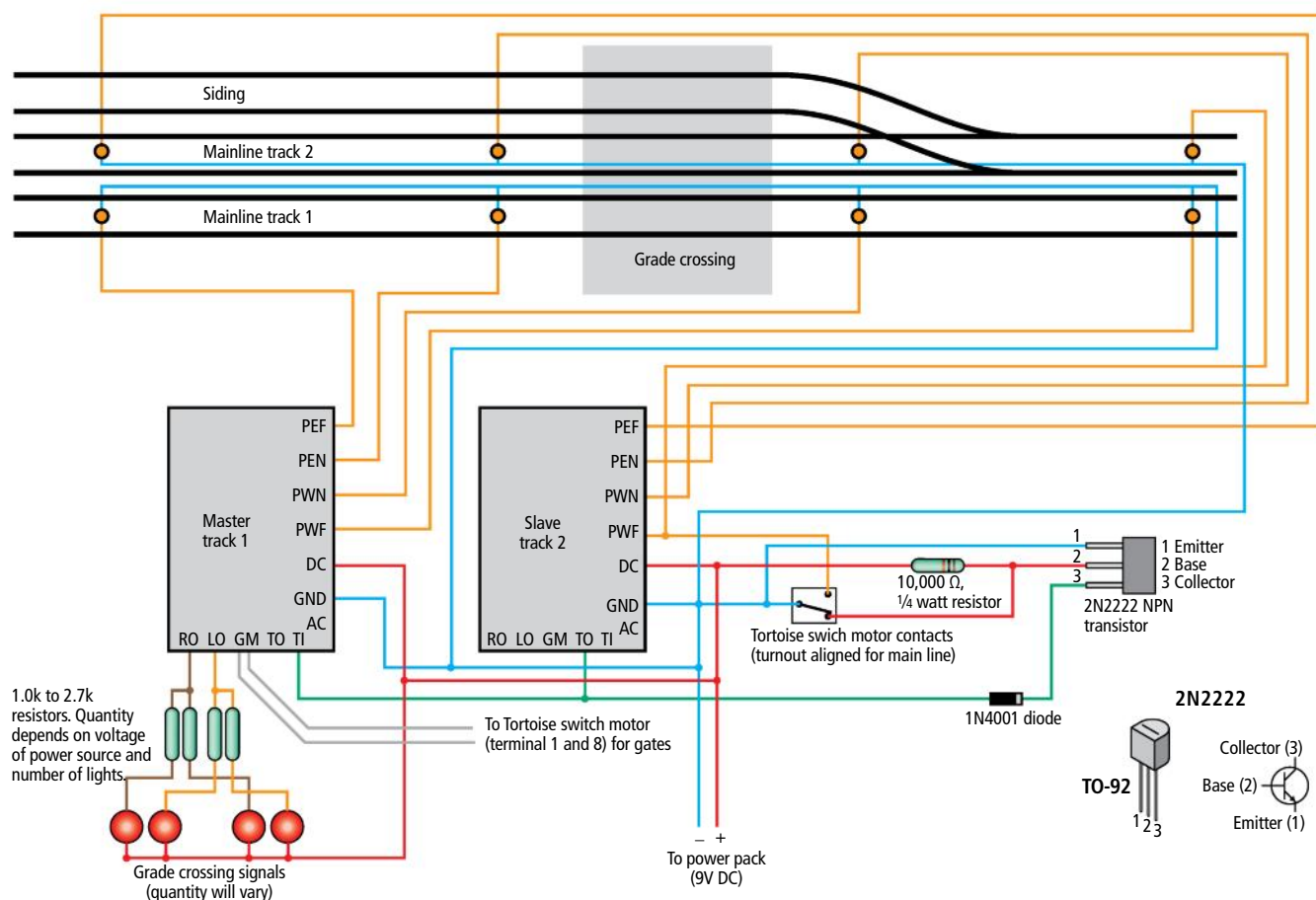


After installing the gates I ballasted the track at the grade crossing. I first drizzled the ballast with wet water (water with a few drops of liquid dish detergent added to help break the surface tension of the ballast granules). Then I applied thinned white glue with a pipette.



When the thinned white glue was dry, I installed the concrete panels. I applied a blob of white glue to the back of each panel and carefully set it in place. Keep the glue off the railheads and make sure excess glue doesn't ooze into the flangeways.

## STEP 5 WIRING IT UP



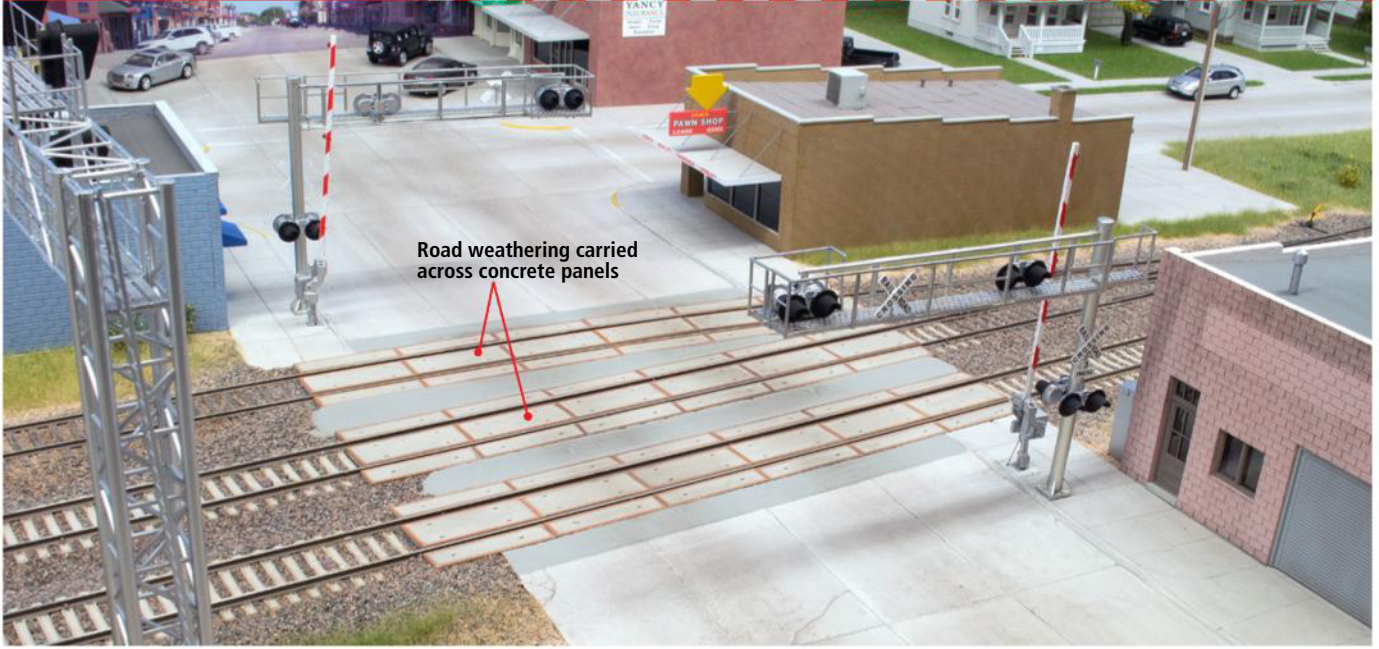
This diagram shows how I wired my grade crossing to the Logic Rail Technologies Grade Crossing Pro circuits. The two mainline tracks have photocells that trigger the grade crossing when a train passes.

The siding has no photocells. Instead, the grade crossing is triggered when the turnout is lined for the

siding via the auxiliary contacts on the Tortoise switch motor that controls the turnout.

The diagram only shows how I wired the flashing LEDs. I wired the light that's constant at the tip of the gate to the auxiliary contacts on the Tortoise that controls the crossing gates.

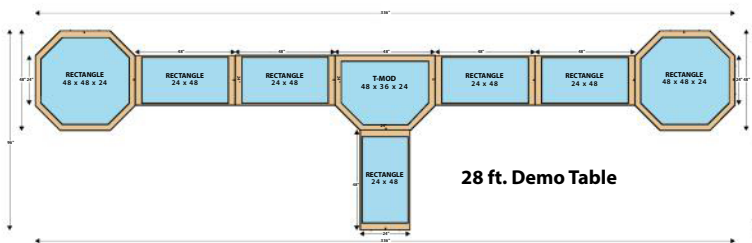
## STEP 5 WIRING IT UP (CONT'D)



Here's how the finished grade crossing looks. Unfortunately, after I'd installed all of the grade crossing components, some of the LEDs on the gate arms didn't work. Following many hours of troubleshooting and testing, I discovered that when I pulled the wires through the crossing gate's brass base, the clear insulation on the wires scraped off, causing occasional short circuits.

To remedy this, I wiggled all the wires until all the LEDs illuminated. Then I painted the wires, hoping the paint would act as an insulator.

So far, the LEDs on the gate arms still work, but I'm not confident the paint is a long-term solution. I plan on making two new gates that will be ready to install should my original gates stop working. **MR**



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# Going Full Throttle with a LokSound decoder



Carolina & Northwestern RS-11 no. 11 shoves a cut of cars onto the Chesapeake & Ohio interchange track in Charlottesville Yard on Larry Puckett's HO scale Piedmont Southern layout. The locomotive has an ESU LokSound Select decoder, and this month, he shares the tips and tricks he used for this project.

**LokSound Select decoders** seem to be growing in popularity among modelers as well as manufacturers. This month I'll go over installing an ESU LokSound Select decoder in a high-hood diesel locomotive. This installation is generic enough that it should work with just about any diesel from early Electro-Motive Division GP7 and Alco RS-3 units to modern Electro-Motive Diesel and General Electric units.

**Although you can purchase** a LokSound Select decoder with whatever available sound project you ask for, by using the LokProgrammer software and hardware you can download and install sound projects yourself. In addition, you can update them if new features are added.

There are two kinds of LokSound Select sound projects, called factory-equipped and retail. The factory-equipped projects are those ESU makes for model manufacturers for specific models. The retail projects are those in ESU's regular line.

While either sound project version can be installed in a LokSound Select decoder, the factory-equipped versions usually have programming to meet a manufacturer's specifications.

Loading a sound project into a LokSound decoder is straightforward. You

simply download the file from the LokSound website ([www.projects.esu.eu](http://www.projects.esu.eu)), load it into the LokProgrammer software (Windows only), then send it to the decoder on an isolated programming track attached to the LokProgrammer interface. I tried it a number of times with different projects without an issue.

**Many LokSound projects** incorporate a new feature called Full Throttle. This feature set adds sound and operational capabilities such as drive hold, run 8, coast, brake, and dynamic brake. Look for the "FT" designation on a sound project with the Full Throttle features.

**I used a LokSound Select Direct** decoder for this project. It has a circuit board shape designed to be a direct replacement for the lighting circuit board similar to those made by Atlas and others.

This direct replacement circuit board is the primary reason why I said this installation is generic enough to cover many locomotive models made during the last 30 or so years. Just to show you how easy this can be, I used one of the early RS-11

models Kato produced for Atlas in the mid-1980s.

To begin, I removed the body and plastic light board. I soldered wire leads to the motor brush contacts using the medium setting on my Weller WLC-100 soldering station. Next, I dropped the decoder in place on the mounting clips on top of the motor. There's small lettering on the board designating the front light (FL) and rear light (RL) to help you install it in the correct orientation.

I soldered the motor leads to the contacts on the side of the board, and the left and right track pickup wires to their respective contacts on the board. At this point, I tested the installation on the programming track by changing the address. Afterward I gave it a test run.

**Next I installed** a speaker and lights.

For this installation, I chose a Train Control Systems six-wire mini-connector harness (**fig. 1**). I like using these connectors, since they make it easy to remove the shell for maintenance and are color coded. I spliced yellow and blue wires in place of the red and orange wires. I soldered the ends of one set of wires to the proper solder pads on the LokSound board and attached the other half to the light-emitting diodes (LEDs) and speaker.

I matched the LokSound Select decoder with an ESU LokSound 1 watt, 4Ω speaker. This is a 16mm x 25mm speaker has a shallow plastic enclosure designed for use with LokSound decod-

ers (**fig. 1**). The 16mm width provided a slide-in fit. I added a thin cardboard shim to wedge it in tight. I installed the speaker in the long hood end of the locomotive right behind the front LED, removing the front die-cast metal weight (**fig. 2**).

One nice feature of these boards is they have 2.2KΩ resistors installed on the function outputs. This allows direct installation of LEDs without the need for additional dropping resistors.

If you wish to use incandescent bulbs, there are pads for each function that can be jumped with a drop of solder



**THE LOKSOUND DECODERS DO BEST WITH ABOUT 13V ON THE PROGRAMMING TRACK, AND SOME DCC SYSTEM PROGRAMMING OUTPUTS ARE LOWER THAN THAT. - LARRY**

to bypass the on-board resistors. However, if the bulbs are rated at less than 16V, you will need to add your own dropping resistors. This is all spelled out for Atlas, Athearn, and other locomotives on the paper instruction sheet that comes with the decoder.

In this case, I installed 2mm x 3mm surface mount device (SMD) N1022C super-incandescent white LEDs from Ngineering ([www.ngineering.com](http://www.ngineering.com)). I explained how to install these in my August 2016 column. The on-board resistor still allowed the LEDs to light brightly enough for my headlights. I shortened the factory-installed light tubes and attached the LEDs to them using cyanoacrylate adhesive (CA). To stabilize the wires, I attached them to the shell with Kapton tape (fig. 2).

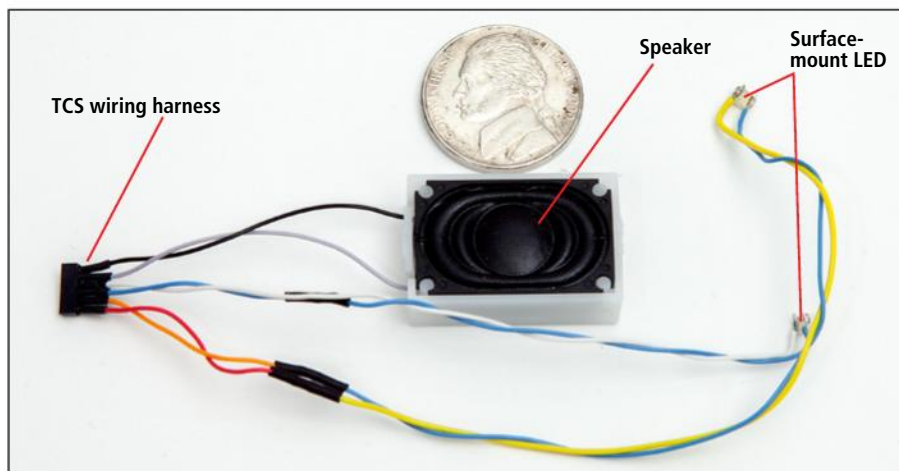
**After connecting** the TCS harness (fig. 3), I slipped the shell on the chassis and moved to the LokProgrammer track. I downloaded the Atlas factory version of the Alco RS-11 sound project from the ESU website and loaded it in the decoder. If you're using a decoder that has a preloaded sound project, you'll want to change the address to match your locomotive, and you'll likely need to adjust the individual sound volumes.

You can also use Java Model Railroad Interface (JMRI) DecoderPro ([www.jmri.sourceforge.net](http://www.jmri.sourceforge.net)), or the standard programmer in your command station to change the address and other configuration variables (CVs).

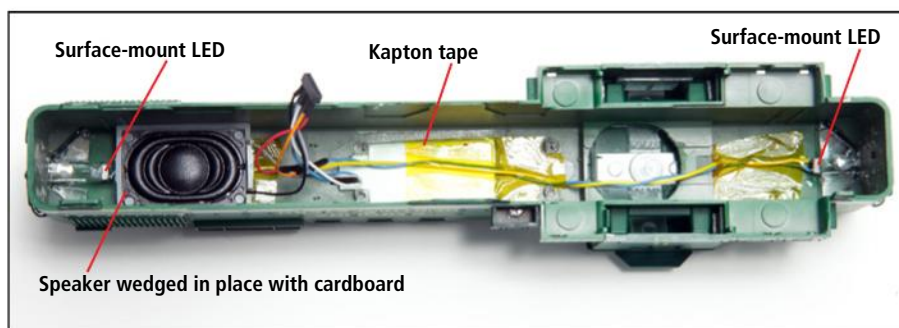
However, the LokSound decoders do best with about 13V on the programming track, and some DCC system programming outputs are lower than that. If you have problems, try programming on the main, which uses full track voltage. Also, the indexed CVs used in LokSound decoders can create issues with some DCC system programmers, but work-arounds are explained in the manual.

The master sound volume is controlled with CV63. However, because these decoders use indexed CVs for individual sound volumes, you'll need some extra steps for them. In each case below, program CV31 to a value of 16 and CV32 to a value of 1 before entering the desired CV and its value. The prime mover volume would require changing CV259, the horn is CV275, and the bell is CV283. The range is between 0 and 128.

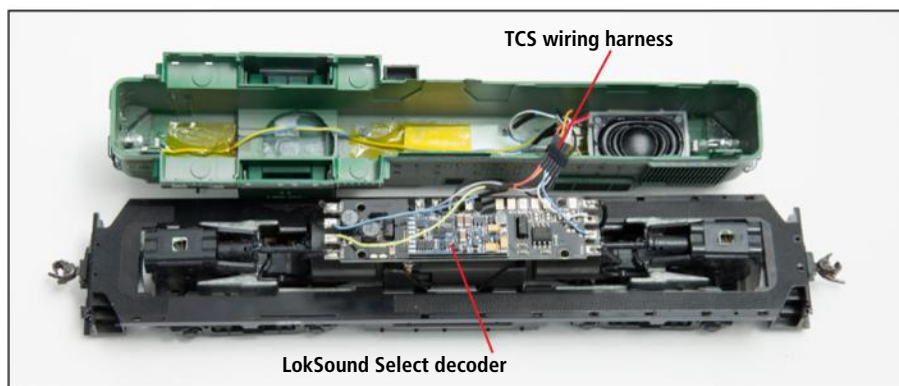
Other programming changes can get a bit more complicated, so you'll need to



**Fig. 1 Wired for sound.** Larry used this ESU Loksound 1 watt, 4Ω speaker and a Train Control Systems six-wire harness for this project.



**Fig. 2 All secure.** After tucking everything into the locomotive shell and securing the wires with Kapton tape, Larry slid the speaker into place.



**Fig. 3 Ready for assembly.** With everything installed it was a simple matter to connect the TCS wiring harness and slip the shell on the chassis.

refer to LokSound and other documentation. To make it easier to find what you need, I've placed several documents on my website ([www.dccguy.com](http://www.dccguy.com)) for easy downloading.

You can also find additional information on the LokSound website ([www.esu.eu/en/start/](http://www.esu.eu/en/start/)) and its Yahoo group. Documentation specific to a particular prototype sound project can also be found in the project description on the LokSound download page.

**The sounds** from my Alco RS-11 replicating a 251B diesel engine are exactly what modelers have come to expect from a LokSound decoder – just like being trackside. And motor control is equally impressive. The fact that you can install the same sound projects in your existing locomotives gives you the ability to match both sounds and functions with factory-installed decoders, an important consideration if you want to use the new Full Throttle features. **MR**



## Bachmann HO SoundValue USRA light 4-6-2

A **passenger workhorse** of the steam era joins Bachmann Trains' HO scale SoundValue lineup with this United States Railway Administration (USRA) light 4-6-2 Pacific. The plastic and die-cast metal locomotive features a dual-mode SoundTraxx decoder that delivers a variety of sound effects on direct-current (DC) and Digital Command Control (DCC) layouts.

**Prototype(s).** The light 4-6-2 Pacific was one of the standard steam locomotive designs developed by the USRA when U.S. railroads were nationalized during World War I. Only 81 light Pacifics were built under USRA control. These were delivered in 1919 to three railroads: the Atlantic Coast Line, Baltimore & Ohio, and Louisville & Nashville. After the USRA was dissolved in 1920, all three railroads as well as the Grand Trunk Western and Mobile & Ohio ordered additional locomotives built to the USRA light Pacific design.

The Bachmann model's dimensions match a prototype drawing of a USRA light Pacific in the *Model Railroader Cyclopedia: Vol. 1, Steam Locomotives* (Kalmbach Publishing Co.). The distance between the tender and cab deck is two scale feet too wide, which lets the model negotiate 18" radius curves.

Our review sample is decorated as New York Central no. 4552, a class K-11e Pacific built in 1912 as no. 3152 that was renumbered in 1936 and retired in 1951. The K-11 Pacifics were versatile locomotives, used by the Central for commuter operations, way freights, and even

switching in addition to hauling main-line varnish.

Studying drawings in an NYC locomotive diagram book, as well as prototype photos of no. 4552, I could see how a class K-11e had similar proportions to a USRA light Pacific. Many of the dimensions, including driver axle spacing are within a few scale inches.

Since it accurately models a USRA light Pacific, the Bachmann model features the 73" drivers of that prototype vs. the 69" drivers of the NYC K-11. The USRA 4-6-2 is also a couple scale feet

longer and a several scale inches taller than the K-11e. Bachmann's Pacific has Baker valve gear, which was included on some USRA light Pacifics. However the NYC K-11s had Walschaerts valve gear. I did appreciate that Bachmann added Commonwealth four-wheel trucks to the tender, which better match the prototype photos of NYC K-11e no. 4552.

**Model construction.** The model's plastic boiler and tender body feature well-defined molded detail, including boiler bands, sand lines, and rivet seams. Handrails, uncoupling levers, and air piping are separate wire parts. The tender also features a separately applied ladder on the rear.

The metal locomotive and tender wheels have black-painted centers. All the wheels are in gauge. None of the drivers have traction tires. The running gear, including the siderods and alligator crossheads, are chemically blackened metal parts.

There are no figures in the cab, but the backhead features a firedoor and other molded detail. All the windows have clear glazing.

The model is painted in a smooth satin-finish black with a graphite-colored firebox and smokebox. All the lettering is straight and placed correctly per prototype photos of no. 4552, including the "K-11e" under the road number.

A flywheel-equipped can motor is housed inside the plastic locomotive boiler. Most of the locomotive's 13-ounce weight comes from its die-cast metal chassis and wheels. A gear tower



A working backup light is mounted at the rear of the tender deck.



The HO scale model features many separate detail parts, including wire handrails and metal running gear. A SoundTraxx decoder and speaker are in the tender.

connects the motor to the second driver axle, while metal siderods transfer power to the other drivers.

The decoder and speaker are inside the tender. A wiring harness from the tender plugs into an 8-pin socket under the locomotive cab.

**Performance.** On our DC test track, the locomotive required 6V to start moving. However, I could then throttle back to 5V. At that setting the model crept along at 1 scale mph. The model's top speed of 60 scale mph matches the typical top operating speed of a prototype USRA 4-6-2. This speed is also more than fast enough for the compressed main lines of most model railroads.

On our DCC test track the model started at 3 scale mph in speed step 1 and accelerated smoothly to a 61 scale mph top speed. When I set the decoder for 128 speed steps, the locomotive started at 1 scale mph in speed step 1.

The model has enough drawbar pull to handle a typical heavyweight passenger consist, as shown in the charts at right. During a hill climb test the Pacific hauled a five-car train of heavyweight passenger cars up a 3 percent grade. The locomotive also easily rounded an 18" radius curve and moved smoothly forward and backward through no. 5 turnouts.

**Lights and sound.** The dual-mode SoundTraxx SoundValue decoder has most of the features of a top-of-the-line Tsunami decoder. A list of programmable configuration variables (CVs) is available under "Parts, Service & Information" at [www.bachmanntrains.com](http://www.bachmanntrains.com). Programming guides are also available at [www.soundtraxx.com](http://www.soundtraxx.com).

During both DC and DCC operation, the headlights and backup lights are illuminated and set to dim. The appropriate light brightens according to direction.

This is correct when the locomotive is running light. However, the backup light should be off when the locomotive moves forward with a train in tow.

There's no way to shut the lights off in DC, but I could turn the lights on or off with a function button in DCC. I could also program the lights for more realistic independent control.

In DC, sound is limited to automatic effects, including the exhaust chuffs and air pump. The bell sounded at speeds less than about 15 scale mph, and the whistle sounded a grade-crossing signal whenever I quickly increased the throttle. These effects can be changed or shut off, but to do so requires a DCC system, an MRC Tech 6, or other DC sound controller. The sound momentarily cut out whenever I flipped the direction switch. Unfortunately, there's no programming fix for that.

I had more control over the sound and performance of the model with a DCC system. User-triggered functions include the bell, whistle, and a steam release. The functions can also be remapped. The SoundValue decoder doesn't have the Tsunami's "Train Brake" feature, so I couldn't set up a function button to stop the train independent of the throttle setting.

Since the locomotive doesn't use an axle-mounted cam switch to mechanically synchronize the chuff sound to the driver rotation, I had to fine-tune the exhaust chuffs using CV116 to get close to the correct four chuffs per wheel revolution. I also couldn't adjust the throttle- or load-sensitivity of the exhaust. If I wanted to simulate the locomotive drifting downhill, which meant the engine wouldn't be working any steam, I had to set the exhaust volume (CV131) to zero first.

The SoundValue decoder includes many of the Tsunami's most useful features, such as independent volume con-

## Facts & features

**Price:** \$399

**Manufacturer**

Bachmann Industries Inc.

1400 E. Erie Ave.

Philadelphia, PA 19124

[www.bachmanntrains.com](http://www.bachmanntrains.com)

**Era:** 1920s to 1950s (as detailed)

**Road names:** New York Central; Atchison, Topeka & Santa Fe; Baltimore & Ohio; Grand Trunk Western; and Union Pacific

**Features**

- Blackened metal wheels in gauge
- Can motor with brass flywheel
- Die-cast metal chassis
- Electrical pickup on six locomotive drivers and all tender wheels
- Light-emitting diode (LED) headlight and backup light
- Minimum radius: 18"
- Plastic E-Z Mate Mark II knuckle couplers at correct height
- SoundTraxx SoundValue dual-mode sound decoder
- Weight: 1 pound (engine and tender); 13 ounces (engine alone)

### PERFORMANCE TESTS

DRAWBAR PULL	
2 ounces	14 HO scale passenger cars
SCALE SPEED (DC)	
VOLTS	SCALE MPH
5 (start)	1
6	10
8	40
12	60
SCALE SPEED (DCC)	
SPEED STEP	SCALE MPH
1	3
7	16
14	30
28	61

trol for each sound effect as well as preset and user-programmable speed tables. I easily changed the decoder's address to match its road number and added deceleration and acceleration momentum for more realistic stops and starts.

**This latest steam addition** to the SoundValue roster accurately models a USRA light Pacific and provides a credible stand-in for a New York Central 4-6-2. With its whistle blowing and exhaust chuffing, it would be right at home hauling a string of heavyweights around an HO layout. — Dana Kawala, senior editor



## MTH HO scale New York City subway cars

**Next stop, Dyer Avenue!** You can hear this announcement and more when you add MTH's R17 New York City subway set to your layout. MTH has been building subway cars for the O gauge market for a while, but this is its first foray into HO scale subway cars. The R17 cars are equipped with the company's Digital Command System. The model will also operate on Digital Command Control (DCC) and direct-current (DC) layouts.

**New York City** had three separate subway operators until 1940, when the city bought out the Interborough Rapid Transit Co. (IRT) and Brooklyn-Manhattan Transit Corp. (BMT) and combined them with the city-owned-and-operated Independent Subway (IND).

When the three lines came under city control, all new rolling stock was procured under a contract system denoted with the letter R. The R17 cars were delivered in 1955 and 1956 for use on the IRT lines.

Delivered in maroon paint, the cars were repainted in a blue and platinum mist scheme starting in 1970. In the early 1980s, the cars were painted plain white. Some of these cars were painted a brighter red, called fox red, for use in a shuttle service between Grand Central Terminal and Times Square station.

Two cars have been preserved in operating condition, four more have been converted into work cars, and two may still survive out of service. The R17s (400 produced) were built by the St. Louis Car Co. and were retired by 1988.

**Our samples were painted** in the 1970s Metropolitan Transit Authority

blue and platinum mist scheme. The set consists of one powered car and three non-powered cars. All prototype R17 subway cars were powered.

Most dimensions were within scale inches of drawings in *New York Subways: an Illustrated History of New York City's Transit Cars*, by Gene Sansome (Johns Hopkins University Press, 2004).

The car width scales about 10½" too wide and the truck center-to-center spacing is nearly 3 scale feet too short. Also, the top of the car is about 11½" too high, and the car floor is about 6" too high. The truck wheelbase is correct, and the wheels are an accurate 34" diameter.

The models are equipped with scale size Kadon knuckle couplers. The prototype R17 cars used Westinghouse H2C couplers, which use a pin and socket connection. The models' Type E couplers result in the coupled cars being about 3 scale feet apart from each other. The pantograph gates at the ends of the prototype cars touch to keep people on the platform from falling between the cars.

Paint on the cars was evenly applied with sharp color separations. All of the lettering is sharp and clearly printed. Most of the added detail parts are on the ends of the cars, including wire grab irons and plastic pantograph gates, blade antennas, horns, and safety chains.

The truck sideframes are one piece, with simplified third-rail pickup detail.

**The mechanism** of the power car has a center-mounted flywheel-equipped motor driving both trucks through plastic driveshafts. The frame is die-cast metal, and a die-cast metal weight is mounted above and around the motor

and drivetrain. The MTH DCS circuit board is mounted to the weight above the motor, and a round speaker is mounted facing down above the rear truck. I spread the car sides to lift the mechanism out of the body.

Circuit boards attached to the insides of the car ends contain the surface-mounted light-emitting diodes (LEDs) for the headlights, rear marker lights, and express or local signs. Two more small circuit boards carry surface-mount LEDs to illuminate the route signs on the sides of the power car. The powered car has its windows frosted to conceal the mechanism and electronics.

The non-powered cars have die-cast metal floors and gray plastic interiors with seats along the sides and vertical passenger stanchions near the doors. The bodies were easy to remove, so it would be simple to add passengers. The cars appear to have the same circuit boards inside the ends as the powered cars, but the headlights and markers don't operate. Two small circuit boards mounted to the roof manage power for LED lighting.

**I started testing using DC** power from a Model Rectifier Corp. Tech 4 power pack. Start-up sounds began at 6V, and the car started moving at 7V. In DC, all sounds are automatic, limited to the whine of the traction motors. A quick reduction in the throttle resulted in brake squeal as the car came to a stop. The headlights or rear markers on the power car light as appropriate for the direction of travel.

A nice feature in DC is the way you can flip the direction switch to slow the car to a stop, then start it back in the



opposite direction without touching the throttle. I could also bring the car to a stop, change direction, then speed up again using the throttle without the sounds dropping out.

Since MTH designs its motors to operate on up to 24V, I could only reach a top speed of 24 scale mph at 12V, or 38 scale mph at 13V, the most our power pack outputs. Discussion on subway forums indicate the top practical speed in the subways is about 55 mph, but with the short distances, trains rarely get going that fast.

I next tested the model in DCC. Using an NCE Powercab, I was able to access all the functions on the decoder. This allowed me to turn lights on and off, change the train status indicator from EXPRESS to LOCAL, sound the horn, set the “bell” (it’s actually more of a buzzer)

#### PERFORMANCE TESTS (POWERED UNIT)

<b>DRAWBAR PULL</b>	2.4 ounces 34 HO scale subway cars
---------------------	---------------------------------------

#### SCALE SPEED (DC)

VOLTS	SCALE MPH
7 (Start)	<1
8	2.4
9	4
10	6
11	8
12	24

#### SCALE SPEED (DCC)

SPEED STEP	SCALE MPH
1	1.5
7	31
14	62
21	79
28	80

and play station announcements. The car started moving at about 1.5 scale mph in speed step 1, and reached 80 scale mph at speed step 28.

One of the neat tricks of MTH’s control system is its ability to follow an operating sequence. I took the train to *Model Railroader’s* Beer Line project layout to test the system, stopping at grade crossings or outside businesses.

I followed the directions in the owner’s manual to set the sequence. Then I set the train into auto mode with function 7, and advanced the throttle.

The train announced the first stop, then started moving. A foot or so before the next stop, the train played a “next stop” announcement, then halted where I’d paused the train during programming. While the train was stopped, sound effects of people leaving and entering the train played, ending with a next stop announcement, and the train left.

The sequence repeated around the layout until it reached the starting point again, then after a short delay, the train started again. I kept it going until people came out of their offices asking me to turn down the volume. Function 6 allows users to set the master volume.

Individual effect volume levels can only be adjusted with a DCS throttle. With DCS, the power car could reach a top speed of 120 scale mph in 1 scale mph increments. Otherwise, the DCS and DCC operation was essentially the same.

**With its light and sound** features, this train could be the centerpiece of an urban layout. Since 40 percent of the subway runs above ground, these trains could be out in the open for all to see and enjoy. – *Eric White, associate editor*

## Facts & features

**Price:** \$379.95 with Proto-Sound 3.0; \$279.95 without sound; two-car subway add-on set, non-powered, \$119.95

#### Manufacturer

M.T.H. Electric Trains  
7020 Columbia Gateway Drive  
Columbia, MD 21046  
www.mthhotrains.com

**Paint schemes:** All are Metropolitan Transportation Authority, blue and silver – southbound express, blue and silver – northbound express, maroon – southbound express, maroon – northbound express

**Era:** 1955 to 1982, depending on paint scheme

#### Features

Four-car consist with one powered car and three non-powered cars

#### Powered Car

- Directionally controlled light-emitting diode (LED) headlight and marker lights
- Five-pole, flywheel equipped, skew-wound, balanced motor
- Kadee no. 158 scale whisker couplers, mounted at correct height
- Digital Command System with Proto-Sound 3.0 operates on DCS, Digital Command Control, and direct-current layouts

- RP-25 contour metal wheels, in gauge
- Weight: 12.8 ounces

#### Non-powered cars

- Detailed car interiors
- Kadee no. 158 scale whisker couplers, mounted .020" low
- Metal chassis
- Overhead LED interior lighting
- Weight: 6.7 ounces

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## Walther's Proto HO scale PRR BR70n RPO-baggage car

**Fully-fledged post offices** on wheels, Railway Post Office cars used to be called the most profitable cars in a railroad's fleet. Wm. K. Walther's Inc. has unveiled a new HO scale version of one of those unsung heroes, a Pennsylvania RR class BM70n (baggage-mail, 70 feet long) typical of those that rode at the head of the railroad's premier name trains. It's part of Walther's new HO scale 1960s *Broadway Limited*.

**Rolling history.** In the early days of railroading, sacks of mail were carried in baggage cars. To speed delivery, RPO cars were developed with bins, racks, and equipment to allow en route sorting. Extendable hooks allowed pickup of mail sacks from trackside stands without stopping. Eventually, RPOs became full-fledged post offices.

Though top name trains like the Pennsylvania RR's *Broadway Limited* were equipped with the latest streamlined cars, even on such trains, the RPO was often an older heavyweight type. For instance, PRR no. 6536, one of the BM70n cars that served the *Broadway Limited* and similar trains in the 1960s, had been rebuilt from a class M70 heavyweight mail car in 1939.

Just as the growth of the airlines and highways were taking passenger business away from the railroads, mail business was on the decline, too. The U.S. Postal Service canceled most railroad mail contracts in 1967, and by the next year, the Pennsy itself disappeared into the newly merged Penn Central.

**Dimensions and details.** The car is made of molded styrene sides, ends, underfloor, and roof that snap onto a plastic core. The Tuscan red paint was smoothly applied, and the buff lettering matched prototype photos. The formed wire handrails were factory-painted black and factory-applied, as were the plastic mail hooks in front of the doors.

The car's dimensions match those on an official diagram I found at Rob's Pennsy Home Page ([pr.railfan.net](http://pr.railfan.net)). The exception was the wheelbase. The first and last axles on the original trucks were 11 feet apart; to maintain prototypical wheel size and accommodate proportionately deeper flanges, the model's trucks are about 4 scale inches longer, not an obvious difference.

The model's interior also matched a prototype diagram. One end of the car has metal contacts for installing an

### Facts & features

**Price:** \$74.98 (9-car 1960s *Broadway Limited* deluxe set, \$1,140)

**Manufacturer**

Wm. K. Walther's Inc.  
5601 W. Florist Ave.  
Milwaukee, WI 53218  
[www.walthers.com](http://www.walthers.com)

**Era:** 1960 to 1968

**Features**

- Blackened metal RP-25 contour wheels, in gauge
- Electrical pickup for interior lighting kit (sold separately)
- Factory-installed, painted wire grab irons
- Modeler-applied car number decals
- Molded plastic interior
- Proto-Max metal couplers, mounted at correct height
- Sprung diaphragms
- Weight: 6.4 ounces (0.4 ounce heavy according to National Model Railroad Association Recommended Practice 20.1)

interior lighting kit (sold separately, Walther's part no. 920-1065, \$15.98).

The car is designed for curves of at least 24" radius, and handled those on our Milwaukee, Racine & Troy staff layout easily. It also had no trouble with no. 5 turnouts and yard ladders.

The metal Proto-Max knuckle couplers were mounted at the correct height in pivoting body-mounted draft gear boxes. The wheels were all in gauge.

**PRR's crown jewel.** Walther's new 1960s *Broadway Limited* set captures the last hurrah of Pennsylvania RR passenger service. This HO scale BM70n RPO-baggage car is a welcome addition for PRR passenger fans. – *Steven Otte, associate editor*



Electrical contacts

The car has a detailed interior made of several plastic moldings. Contacts at one end of the car provide electrical pickup for interior lighting (sold separately).

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QUICKLOOK

## TrainClap 2000 audio DCC controller

**Price:** \$129.95

**Manufacturer**

Trainovations4you, LLC  
1027 Commerce St.  
Green River, UT 84525  
[www.Trainovations4you.com](http://www.Trainovations4you.com)

**Comments:** What if you could operate your Digital Command Control layout with the clap of your hands? You can, thanks to the TrainClap 2000. This electronic device connects between a DCC command station and a Clapper (you'll recall the TV jingle: "Clap On! Clap Off!"). It allows model railroaders to control train movement with claps that mimic prototype whistle/horn signals. Two claps cause a stationary locomotive to move forward and three claps cause it to move backward. A single clap causes a moving locomotive to stop. On sound-equipped engines, two long claps, a short clap, and a long clap trigger a grade-crossing signal. A

traditional DCC throttle is still needed to set locomotive speed and trigger other functions.

The TrainClap 2000 has two cords. One has a handy USB connection that connects to the Clapper. The other telephone-style cable plugs into the DCC command station.

The TrainClap 2000 has five pushbuttons and a shift key on its plastic case. The buttons are used to program the device for a specific brand of command station. A list of 26-digit codes for U.S. and European DCC manufacturers is included. A red LED blinks in sequence to let you know when the TrainClap connects to the command station.

We successfully clap-controlled train movement on our Red Oak project layout. There were a few instances where the device didn't understand a rapid sequence of claps, and during testing the device misunderstood a few

chortles from staff members as claps.

You can't operate two locomotives at once under clap control unless the locomotives are in a consist. The TrainClap 2000 works with steam, diesel, and electric locomotives.

The TrainClap 2000 comes with all of the necessary installation hardware except The Clapper, which can be purchased from Amazon.com, Walmart, and Walgreens.

For model railroaders looking to simplify operation of a DCC layout, the TrainClap 2000 may be the answer. An improved version with better audio sensitivity, the TrainClap 2500, will be available starting April 1. – Neil Besougloff, editor



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## QUICKLOOK

### Atlas N scale Norfolk Southern gondola

**Price:** Single car, \$25.95; three-pack, \$77.95; six-pack, \$155.70

**Manufacturer**

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

**Era:** June 1993 to present (as decorated)

**Road names:** Norfolk Southern (with yellow conspicuity stripes, test roller bearings stencil, MW scrap tie loading stencil, and 263K GRL 1993 scheme in three road numbers each; 25,000th rebody in one number). Versions with conspicuity stripes and 263K GRL 1993 scheme also offered in three- and six-packs.

**Comments:** Atlas has added a Norfolk Southern class G86-R Top Gon coal gondola to its N scale lineup. The model, originally produced by BLMA Models, has a die-cast metal center sill, a one-piece injection-molded plastic

body with separate internal braces, and an etched-metal brakewheel platform.

Norfolk Southern's Roanoke, Va., East End Shops was home to the Top Gon program. Two prototype cars were built in 1991; production started in July 1992. Between 1991 and 1998, shop forces stripped thousands of aging hoppers to their center sills. The hopper bays were replaced with a tub-style floor similar to that found on contemporary coal gondolas. Why the "Top Gon" name? It's a play on the 1980s movie "Top Gun."

Our sample is decorated as Norfolk Southern no. 23214. The paint is smooth and evenly applied, and all of the printing is legible under magnification. The lettering placement matches that on the full-size car.

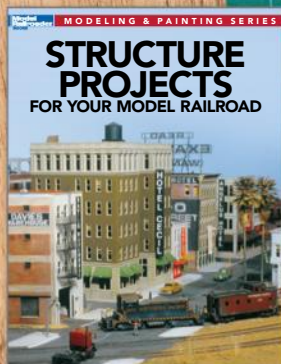
I found a prototype photo of NS 23214 on www.rrpicturearchives.net. One detail discrepancy I noticed

was on the corners. The full-size car has six rivets securing the corner post to the body. The model has three.

The hopper weighs .5 ounce, which is .5 ounce lighter than the 1 ounce weight recommended for a car of this length by National Model Railroad Association RP-20.1. The truck-mounted Accumate couplers are at the correct height, and the plastic wheelsets are in gauge. There are no provisions for body-mounting the couplers.

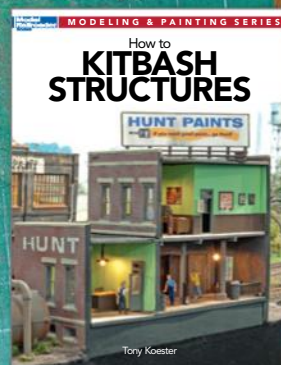
I ran the car in a train on our Red Oak project layout from 2015. The Top Gon ran without incident on the layout's 13" radius curves and through the Peco no. 6 medium turnouts.

If you're modeling coal country on the Norfolk Southern from the early 1990s through today, a solid train of Atlas Model Railroad Co.'s class G86R Top Gons is a must. — *Cody Grivno, associate editor*

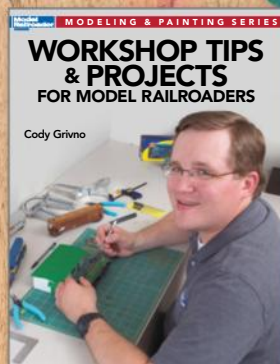


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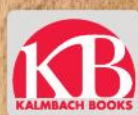


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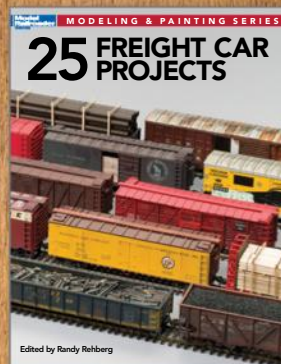


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# Was Al Kalmbach a railroader?

**My old grammar teacher** would pounce on this magazine's title and declare that the adjective "Model" modifies the noun "Railroader." We know Al Kalmbach made publishing his profession, but the title raises a question. Was he a railroader?

Let's define "railroader" as a person employed in the operating department of a railroad and narrow it further to the engine and train crews, dispatchers, and operators. Modelers have played these roles ever since Al printed Vol. 1, No. 1 in 1934.

The topic of prototypical operation appeared within months of the magazine's inaugural issue. July reported on the Dunwood Western Lines of New York's Brooklyn Railroad Club, patterned on the Pennsylvania RR. The club emphasized prototype operation, with prospective engineers given an eye test, a PRR rulebook, and testing. Dispatchers and towermen were similarly qualified, and all were measured by the well-known Brown demerit system. ("Brownies" is railroad slang for demerits, derived from Brown's name.)

That October's issue devoted four pages to "Planning for Realism." Author James Dechert showed keen foresight to which the National Model Railroad Association's Layout Design Special Interest Group (LDSIG) and Operations Special Interest Group (OPSIG) can trace roots. In his article, Dechert explained his design of a point-to-point layout intended for prototype operation. He deliberately chose to visibly model only a branch of a freelanced railroad, the Great Seaboard, a north-south trunk line in the national system.

Two noteworthy books saw publication in the decade

following MR's debut: *Book of Rules for Model Railroaders* (Lawrence W. Sagle, Model Craftsman Publishing, 1943) and *How to Run a Model Railroad* (Boomer Pete, Kalmbach, 1944). Both describe operation extensively, including detailed discussions of timetable and train order rules. At the time, this method governed contemporary railroading over most the nation's system.

**Boomer Pete's byline** first appeared in *Model Railroader* in 1937. He wrote about operation regularly, including reports on sessions at the Milwaukee Union Terminal of the Model Railroad Club of Milwaukee, the Bay State Western of the Springfield (Mass.) Model Railroad Society, and the Westchester Model Club in Pelham Manor, a suburb of New York City. *How to Run a Model Railroad* is, in part, a compendium of Boomer's articles.

Boomer was a vocal spokesman on the subject. His stories also covered other facets of the prototype, such as train make-up and switching, interlocking operation and design, and signaling.

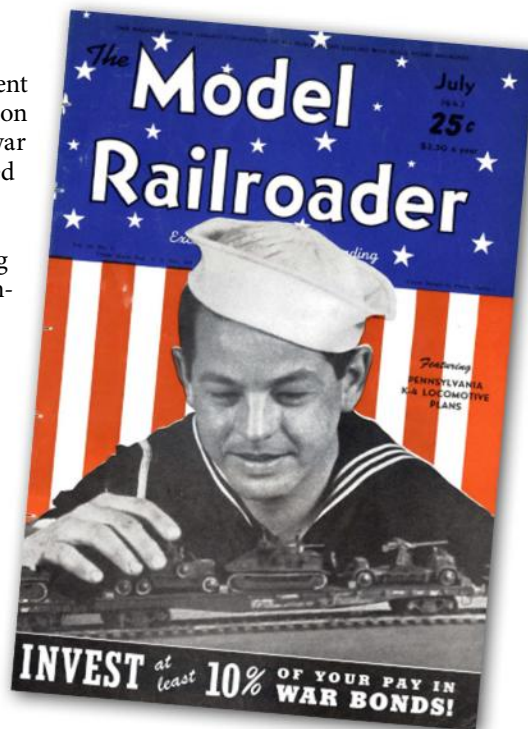
*Model Railroader* printed Frank Ellison's six-part series "The Art of Model Railroading" in 1944. Frank was a prolific contributor to whom operation was essential to model railroading. He started modeling in Summit, N.J., in 1919, inspired by a gift of a \$3.95 clockwork Bing train that Santa accidentally delivered to his 3-year-old daughter. Later a newspaperman in his native New Orleans, he conceived the Delta Lines, a north-south trunk line similar in concept to the Great Seaboard, connecting a Gulf port with the coal and oil regions of the Appalachians.

**It surprised me to find** so much ink spent on prototype operation at the height of the war years. A friend loaned me a copy of Sagle's *Book of Rules*, which revealed a tantalizing clue. Its original owner, one Nelson Bigelow, inscribed a flyleaf with the following: "Rec'd. Jan. 9, 1944 Ordered Feb. 29, 1943."

Such anticipation probably led him to study every page eagerly, including Adrian Buyse's foreword. Adrian was then the NMRA president. He believed that operation was the purest expression of the hobby, and learning it "required riding the head end or rear end, spending hours in towers, and studying railroad yards." However, both Adrian and Boomer warned readers against interfering with the railroads' operation or raising suspicions of authorities on high wartime alert.

What those times must have been for the hobby! Our country was single-mindedly devoted to its war effort, as evidenced by the vintage MR cover accompanying this article. Manufacturers like Mantua and Varney dedicated tooling to ordnance production and sent skilled employees to the service, creating shortages of kits and other hobby supplies. Gas rationing and troop movement severely limited pleasure travel. Was wartime paper rationing the reason Nelson had to wait almost a year for his *Book of Rules*?

I suppose many back then turned to armchair railroading, spurring the strong



War intruded on the hobby during *Model Railroader's* early years, preventing many from indulging their modeling interests. This may have led many to satisfy their railroading urges by reading about the hobby instead.

interest in print material about operation. If one couldn't experience the hobby itself, one could read about it.

Adrian's foreword included this insight: "The hobby represents the substitution of interest for an unfulfilled wish." This returns me to my question about Al. Yes, he was a railroader. So were Boomer and those who followed. They simply chose a smaller scale in which to practice. **MR**

*(Research for this column gave me many enjoyable hours and some delightful surprises. I'm impressed with the MR All-Time Digital Archive [www.ModelRailroader.com/AllAccess], which holds thousands of Model Railroader treasures online.)*

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## Aug. 1973

To kick things off, the photo above, taken by popular modeler Ben King, was on the cover of our August 1973 issue. This cover promoted a story that Ben wrote about – not surprisingly – building a special camera to take stereo slides of model railroads.

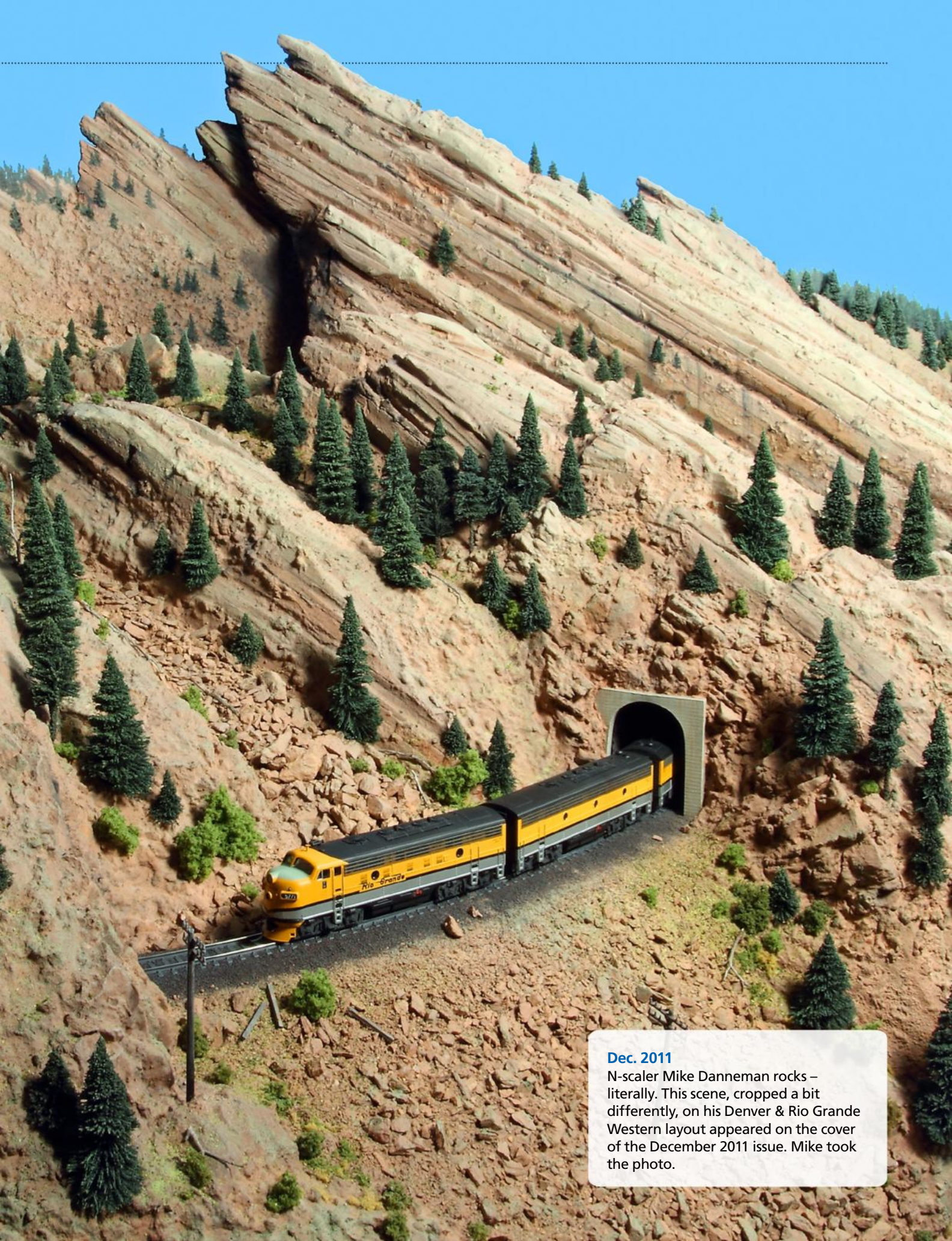
To celebrate our 1,000th issue, this month Trackside Photos features some of the most inspiring photos ever on the cover of *Model Railroader* – minus the words.

Most of the photos here are from recent decades for good reason – layouts are better now than they have ever been. Before the 1960s, most of the photos on *Model Railroader*'s covers were of individual models instead of layouts. The first color cover photo appeared way back in the November 1938 issue, showing a contemporary Santa Fe diesel. The last black-and-white cover was on the July 1964 issue. *Model Railroader*'s familiar blue logo was first used in January 1936, although in the 1950s a few issues bore yellow, black, or red logos. Cartoons appeared on the cover instead of photographs twice, and more than 100 cover photos have shown people, including three women, one sailor (July 1943 – see page 96), and two men smoking cigars. There was even one animal on the cover: an eagle, to promote the purchase of War Bonds in June 1944.

## Jan. 1984

Chief photographer Art Schmidt captured the *Model Railroader* 50th anniversary *Hiawatha* goodwill tour for the cover of the January 1984 issue. The scene is a diorama, and inside that issue, models of *Hiawatha* trains in HO, N, and O scales were used in photos depicting the train barnstorming across the country on 16 different model railroads.





**Dec. 2011**

N-scaler Mike Danneman rocks – literally. This scene, cropped a bit differently, on his Denver & Rio Grande Western layout appeared on the cover of the December 2011 issue. Mike took the photo.



#### Jan. 1999

The January 1999 issue marked our 65th anniversary. To celebrate, then staff member Jeff Wilson built this diorama of the *Pioneer Zephyr* on its inaugural run, which coincided with *Model Railroader's* first year of publication. The cover was a fold-out; here is the photo taken by our chief photographer Bill Zuback in its entirety.

#### Jan. 1948

Renowned model railroader John Allen made his *Model Railroader* cover debut in the January 1948 issue. This isn't a photo of John's famous Gorre & Daphetid RR, however. It's an HO scale diorama that John built to hone his modeling and photography skills.



### June 2008

San Bernardino, Calif., in 1951 was the subject matter on the June 2008 cover. Gary Hoover explained in this issue how he compressed the city's large Santa Fe station and repair shops into a 9 x 16-foot space on his HO scale layout. Gary took the photo.





**Feb. 2012**

*Model Railroader's* covers seldom show trains traveling toward the background. They're almost always coming at you. But when we saw this photo of Flemming Orneholm's layout, with a lone cowboy on horseback in the distance, we couldn't resist putting it on the February 2012 cover. Contributing editor Pelle Søeborg shot the photo.





#### June 2015

No, the N scale steam locomotive on Dan Lewis' Montana-based layout doesn't actually smoke like that, but the Photoshopped plume only adds to this scene that was used in a cropped version on the June 2015 cover. Dan also photographed the scene.

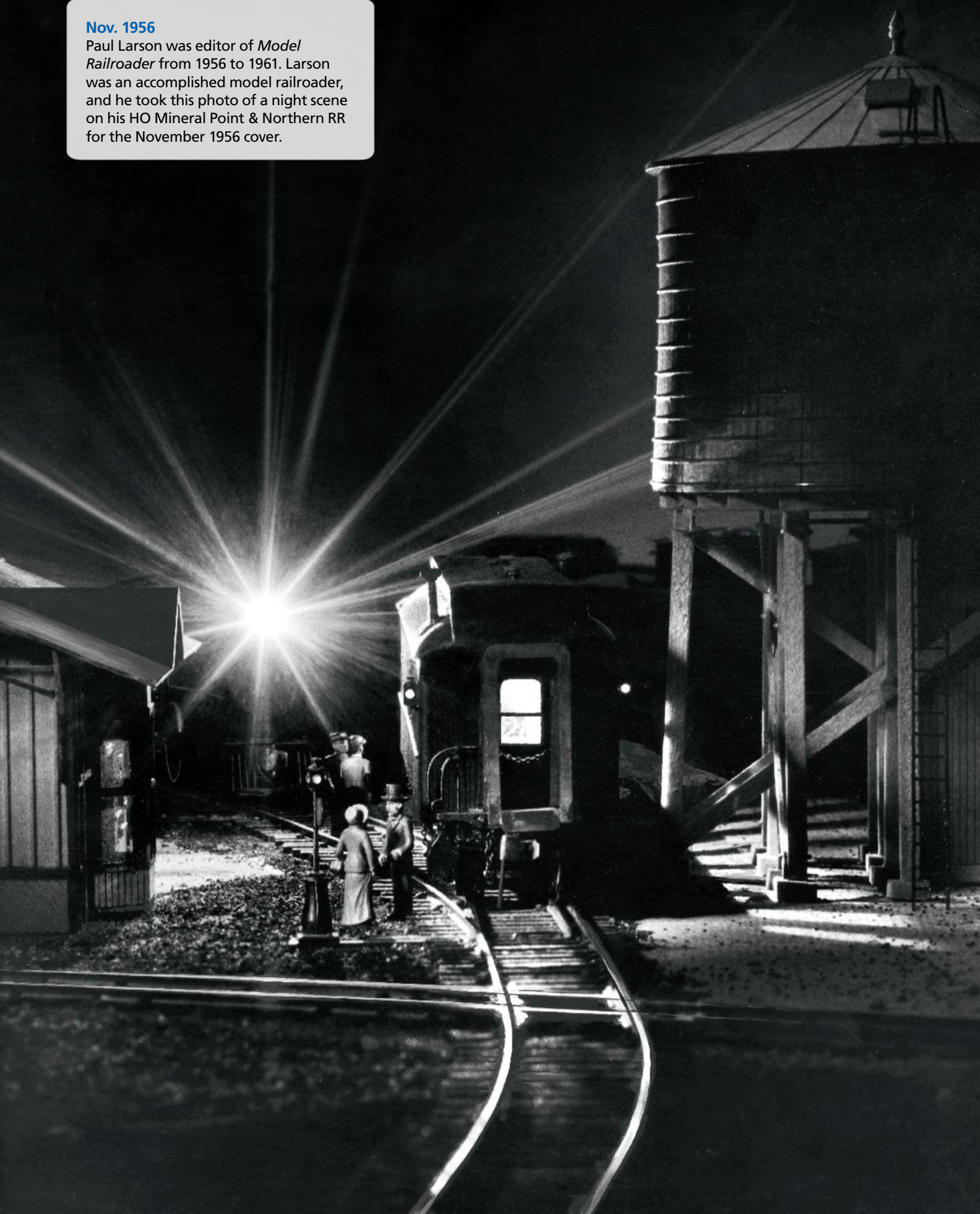


#### Dec. 1976

This close-up photo of a pair of O scale interurban cars graced the cover in December 1976. It accompanied a photo feature story about the detail work achieved by Bob Hegge on his eye-catching Crooked Mountain Lines layout. Bob took the photo.

**Nov. 1956**

Paul Larson was editor of *Model Railroader* from 1956 to 1961. Larson was an accomplished model railroader, and he took this photo of a night scene on his HO Mineral Point & Northern RR for the November 1956 cover.



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## Schedule of Events

**CA, SIMI VALLEY:** Swap Meet, Santa Susana Railroad Historical Society, Santa Susana Park, 6503 Katherine Rd., March 25, 2017, 7:00am-10:00am. \$2.00 donation, kids under 12 free. All scales, equipment, scenery, books and photos. For vendor table availability contact Dave, 661-753-6006 or e-mail events@santasusannadepot.org

**CT, GREENWICH:** Southern Connecticut Model Train Show, Greenwich Civic Center, March 12, 2017, 9:00am-3:00pm. Adults \$7.00, under 12 free. Valley HO Trak and 4 more layouts. Clinics, 150 tables, door prizes, free parking, refreshments. Ron's Books, PO Box 714, Harrison, NY 10528, 914-967-7541, ronsbooks@aol.com www.southerncttrainshow.com

**FL, DELAND:** 59th Florida Railfair Show & Sale, Volusia County Fairgrounds (Tommy Lawrence Arena), 3150 E. New York Ave., Saturday, April 8, 2017, 9:00am-4:00pm. Admission \$8.00 (under 12 free). Layouts, 300+ tables. Info: Charles Miller, 3106 N. Rochester St., Arlington, VA 22213, 703-536-2954. E-mail: rrrshows@aol.com or www.gserr.com

**FL, LARGO:** Swap Meet & Open House at the Suncoast Model Railroad Club, Minreg Hall, 6340 126th Ave., Saturday, April 22, 2017, 9:00am-4:00pm. Admission \$7.00, 18 and older. Children 12-17 \$2.00, and children 11 and younger are free. Free parking. Visit <https://www.facebook.com/SuncoastModelRailroadClub?fref=ts>

**FL, ORLANDO:** NMRA 2017 Orlando National Convention, Rosen Plaza Hotel, 9700 International Drive, Zip: 32819. July 30 - August 5, 2017, 8:00am-11:00pm each day. Admission: See website. [www.nmra2017orlando.org](http://www.nmra2017orlando.org) Contact: Gilbert Thomas, 8119 Woodvine Circle, Lakeland, FL 33810, 863-412-3090. E-mail: Thomas\_12399@msn.com

**FL, PINELLAS PARK:** Regal Railways Presents a Toy Train, Collectible and Hobby Show/Sale, Lopez Hall, 7177 58th St. North, Saturday, April 1, 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](http://www.regalrailways.com) for more information.

**IL, COLLINSVILLE:** 11th St. Louis Railroad Prototype Modelers meet. Gateway Convention Center, June 23-24, 2017, Friday 9:00am-9:00pm and Saturday 9:00am-5:00pm. Admission: \$25.00 for both days; \$20.00 for Saturday only. Information: <http://icg.home.mindspring.com/rpm/stlrpm.htm> Contact: John Golden at [golden1014@yahoo.com](mailto:golden1014@yahoo.com) or Lonnie Bathurst at [Bathurst@litchfield.com](mailto:Bathurst@litchfield.com) or 217-556-0314

**IL, JOLIET:** Will County Model Railroad Club Swap Meet & Open House, Stone City VFW, 124 Stone City Drive, Saturday, April 1, 2017, 9:00am-2:00pm. Admission \$3.00 per person, children under 12 free. Dealers Welcome. Contact: Mike at 708-308-9036 or visit: [www.wcmrra.org](http://www.wcmrra.org)

**IL, LOMBARD:** Chicago O Scale Meet (2-Rail), Westin Lombard Yorktown Center, 70 Yorktown Center, March 17-19, 2017, Friday dealer set-up, show open to public Saturday 9:00am-5:00pm, Sunday 9:00am-2:00pm. Buy/sell/trade clinics, discussion, tours, contest. Largest dedicated O Scale show. \$20.00 entire weekend. Info: Melissa 630-745-7600 or [www.marchmeet.net](http://www.marchmeet.net)

**IL, URBANA:** Midwest Central RR Club 36th Annual Train Show, Urbana Lincoln Square Village, 100 S. Vine St. in downtown Urbana, April 1-2, 2017, Saturday 10:00am-6:00pm and Sunday 11:00am-4:00pm. No Admission, selling trade, operating layouts, handicap accessible. Contact Rick, 217-552-6514

**MA, AUBURN:** Worcester Model Railroaders Show at the Elks, 754 Southbridge St. Sunday, March 19, 2017, 10:00am-3:30pm. Admission: \$5.00, children under 12 free. Dealers and operating layouts. Contact: Ralph Kimball, Jr., 508-868-5189, [ralphkimball@charter.net](mailto:ralphkimball@charter.net) or [www.wmrr.org](http://www.wmrr.org)

**MA, WELLESLEY:** Hub Division NER/NMRA Spring TRAINING Clinics/Train Show: Saturday, April 22, 2017, 10:00am-4:00pm. Wellesley Community Center, 219 Washington Street (intersection of Rte. 16 and Rte. 9). Admission \$5.00, children under 12 FREE. Featured clinician Stephen Priest, MMR. More information and clinic details visit website: [www.hubdiv.org](http://www.hubdiv.org)

**MI, MUSKEGON:** Muskegon Railroad Historical Society Spring Model Train and Hobby Show onboard USS LST 393 Veteran's Museum Ship, 560 Mart Street, Zip: 49440. Sunday, April 23, 2017, 10:00am-3:00pm. Admission \$5.00; under 5 free. Operating layouts, free parking, tour authentic WW2 ship! [www.facebook.com/muskegonrail/](http://www.facebook.com/muskegonrail/) Vendors contact Mike Wood 231-670-0751.

**MI, WYOMING:** Grand River Valley Railroad Club Train Show, Home School Building, 5625 Burlingame Ave., Zip: 49509. April 8, 2017, 10:00am-3:00pm. Admission \$5.00, 12 and under free. Dealer tables \$16.00. Operating layouts, all gauges. Free parking. Door prizes. Lunch available. Contact Ken Skopp, 616-667-9680, [kwskopp@gmail.com](mailto:kwskopp@gmail.com) <http://grandrivervalleyrrc.org>

**MN, ST. CLOUD:** Granite City Train Show and Sale, River's Edge Convention Center, 10 4th Avenue South, Saturday, April 1, 2017, 9:00am-3:00pm. \$6.00, 10/under free. Buy/sell model/toy trains, books, videos, railroad collectibles. Operating displays. Win a LIONEL train set or FSM structure kit. 320-255-0033; [edwardolson@cloudnet.com](mailto:edwardolson@cloudnet.com) or [www.GraniteCityTrainShow.com](http://www.GraniteCityTrainShow.com)

**MN, WOODBURY:** Newport Model RR Club Flea Market & Train Show, Woodbury High School, 2665 Woodland Drive, Zip: 55125. April 29, 2017, 9:00am-2:00pm. Admission \$5.00. Future Show: October 14, 2017. Club Address: Newport Train Club, PO Box 0061, St. Paul Park, MN 55071. Contact: Ed, 651-233-3310

**MO, BRANSON:** The Roark Valley Model Railroad Fifth Annual Open House Event, Saturday, March 25, 2017, 10:00am-5:00pm. Admission is FREE for children and adults. Visit and operate Southwest Missouri's Largest HO Modular Layout. 3609 W 76 Country Blvd., 65616. E-mail: [larry.blaha@gmail.com](mailto:larry.blaha@gmail.com) <http://roarkvalleymrr.weebly.com/>

**MO, JOPLIN:** Museum Complex Train Show and Swap Meet, In Schifferdecker Park, 7th Street & Schifferdecker between the golf course and pool. Saturday, March 25, 2017, 9:00am-3:00pm. \$3.00 adult, 12 and under free. Rick Gardner, 11486 County Ln. 214, Oronogo, MO 64855; 417-673-4888 or e-mail [rickgardner449@gmail.com](mailto:rickgardner449@gmail.com)

**MO, MARCELINE:** Model Train Show, Walsworth Community Center, 124 East Ritchie, Saturday, May 6, 2017, 9:00am-4:00pm. Admission: FREE. Operating layouts, vendors, concession, BNSF equipment display. Vendor space available. Contact: Dennis, 660-734-2195 E-mail: [d.vandyke@hotmail.com](mailto:d.vandyke@hotmail.com) Website: [www.walsworthcommunitycenter.com](http://www.walsworthcommunitycenter.com)

**NC, WILMINGTON:** 2nd Annual Coastal Carolina Trainfest, Coastline Conference Center, 501 Nutt St., Zip: 28401. April 1-2, 2017, Saturday 10:00am-5:00pm and Sunday 10:00am-4:00pm. Adults \$10.00, 16 and under free w/adult. 15 layouts, clinics, displays, vendors, children's activities, door prizes and raffles. Visit: [www.coastalcarolinatrainfest.org](http://www.coastalcarolinatrainfest.org)

**NJ, EAST RUTHERFORD:** METCA/NYSME Train Show, St. Joseph's School, 120 Hoboken Road, Zip: 07073. Saturday, April 8, 2017. METCA/NYSME members 8:00am. Public 9:00am-2:00pm. Admission: \$5.00 Adults 16+, FREE for METCA members, wives, kids. NYSME Club layouts open FREE to attendees. Info: [www.METCA.org](http://www.METCA.org); Bob Amling, [nyshows@metca.org](mailto:nyshows@metca.org) • 718-541-8619

**OH, BUCYRUS:** 31st Annual Bucyrus Model Railroad Assoc. Train Show & Swap Meet, Crawford County Fairgrounds, 610 Whetstone St. Saturday, April 8, 2017, 10:00am-4:00pm. Adults \$5.00, children 12 and under free. Club layout open, videos, memorabilia, model train parts. Food by Katering Country Style. Contact: Dave Moore 419-462-5035.

**OH, COLUMBUS:** The 9th Ohio N Scale Weekend, "For N-Scalers by N-Scalers" Franklin County Fairgrounds, Hilliard, Ohio. Presented by Central Ohio N-Trak. May 20-21, 2017, Saturday, 10:00am-5:00pm and Sunday 9:00am-3:00pm. Set-up Friday May 19th, 1:00pm-8:00pm. Event registration \$10.00. Event info [www.centralohiontrak.org](http://www.centralohiontrak.org) or e-mail [ohionscaleweekend@yahoo.com](mailto:ohionscaleweekend@yahoo.com)

**OH, COLUMBUS:** 61st Buckeye Model Trains & Railroad Artifacts Show, Ohio Expo Center (Lausche Bldg.), 717 East 17th Ave. (Exit 111 off I-71), Saturday, April 15, 2017, 9:00am-4:00pm. Admission: \$7.00 (children under 12 free). Info: Gordon Hartranft, 58 Creed Circle, Campbell, OH 44405. 330-755-1914. E-mail: rrrshows@aol.com or www.gserr.com

**OH, KIRTLAND:** Railfest 2017. Lakeland Community College (AFC), 7700 Clocktower Dr., Zipcode: 44094. NMRA MCR Div. 5. March 18-19, 2017, Saturday and Sunday 10:00am-4:00pm. All Gauge Train Show with over 400 tables. 440-357-8890, www.Railfest.org

**OH, MONTPELIER:** Montpelier Trackside Modelers RR Club Train Show/Swap Meet. Quality Inn Convention Center 13508 State Rt. 15 Exit 13 Ohio Turnpike, Sunday, April 2, 2017, 10:00am-3:00pm. Adults \$5.00, under 12 free. Layouts, Test Track, Tables \$15.00. Jim McPike, jimcpike@gmail.com 419-298-2441

**PA, HAWLEY:** Model Train Show & Sale. Hawley Fire Department, 17 Columbus Ave. Sunday, April 23, 2017, 9:00am-3:00pm. Admission \$3.00, under 12 free with adult. Bill Delling, 618 Fern St., Hawley, PA 18428. 750-226-3206.

**PA, MONACA:** Beaver County Model RR Spring Train Show & Sale. NEW LOCATION: Monaca Turners, 1700 Old Broadhead Road, Sunday, April 2, 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

**SC, CHARLESTON:** Charleston Area Model Railroad Club Train Show, Danny Jones Armory Park, 5000 Lackawanna Blvd., North Charleston, SC, March 18-19, 2017, Saturday 9:00am-5:00pm and Sunday 10:00am-4:00pm. Adults \$5.00, kids 12 and under free. For table information contact the club at trainshow@chamrc.com or www.chamrc.com

**SC, COLUMBIA:** Columbia Model Train Show. National Guard Armory, 1225 Bluff Road, Saturday, March 25, 2017, 9:00am-3:00pm. Admission \$5.00, under 10 FREE. Over 100 vendor tables, Thomas the Train & Friends, Railroad collectibles. Contact Todd at 843-307-8674, southcarolinatradeshow@gmail.com or www.SouthCarolinaTradeShows.com

**SC, GREER:** Greer Model Train Show, National Guard Armory, 105 Woodruff Road, Zip: 29651, Saturday, May 20, 2017, 9:00am-3:00pm. Admission \$5.00, under 10 FREE. Over 100 vendor tables, Thomas the Train & Friends, Railroad collectibles. Contact Todd at 843-307-8674, southcarolinatradeshow@gmail.com or www.SouthCarolinaTradeShows.com

**SD, SIOUX FALLS:** Dakota Southeastern Division NMRA 3rd annual Greater Sioux Falls Swap Meet and Train Show. Mt. Cultural Center, 515 N. Main Avenue, Zip: 57104, Saturday, March 25-26, 2017, Saturday 10:00am-5:00pm and Sunday 10:00am-4:00pm. Admission: \$5.00, children 12 and under free w/adult. Layouts on display. Information: www.dakotasoutheastern.org or 605-310-0124

**TX, NEW BRAUNFELS:** Model Railroad Jamboree. New Braunfels Civic Center, 390 S. Seguin Ave. April 8-9, 2017, Saturday 10:00am-5:00pm, Sunday 10:00am-4:00pm. Adults (over 14) \$8.00, children 12 and under \$3.00. Vendor tables, layouts including: Lego's, silent auction, refreshments, museum open house. Info: www.nbrrm.org Jim Edmondson 830-629-2071

**WA, CHEHALIS:** Lewis County Model Railroad Club, Train Show & Swap Meet, Southwest Washington Fair Grounds, Blue Pavilion, 2555 N. National Ave., Zip: 98532, April 1-2, 2017, Saturday 10:00am-4:00pm and Sunday 10:00am-3:00pm. Admission \$5.00, 10 and under free. Free parking. Contact: Ted, 360-985-7788 or tedstrains@Lewiscounty.com

**WA, TACOMA:** Tacoma Northwestern Model Railroad Club Show & Swap Meet, Pacific Lutheran University, Olson Hall, 12180 Park Ave. South, Zip: 98447, April 1-2, 2017, Saturday 9:00am-5:00pm; Sunday 10:00am-4:00pm. Admission \$7.00, Scouts, Active/Retired Military in uniform and children under 12 FREE. Contact: petermcoulton@gmail.com 206-550-4583, http://tacomanorthwestern.org

**WI, LA CROSSE:** La Crosse & Three Rivers Railroad Club's 36th Annual Model Railroad Show. La Crosse Center, 2nd and Pearl St. March 18-19, 2017, Saturday 10:00am-5:00pm, Sunday 10:00am-4:00pm. Adults \$7.00, \$6.50 with non-perishable food item, children 11 and under free w/adult. John Uehling 608-784-1904 or Ed Lundberg 608-790-3864

**WI, SPOONER:** Railroad Heritage Day, June 17, 2017. Spooner Elementary School, 1821 Scribner St. Model train show, layouts, vendors. Tour railroad museum inside restored 1902 Chicago & North Western depot. Train rides on Wisconsin Great Northern. Presented by Spooner Railroad Memories Museum. Admission \$1.00. Contact David Masterjohn, 715-491-5030.

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### Union Pacific on the Plains

You've seen peeks of it; now contributing editor Pelle Søbørg will reveal his new HO scale Union Pacific Daneburg Subdivision. Set in the present-day Great Plains, Pelle uses sectional construction, hidden staging, and a lift-up entry gate to make the most of his space.

### Build a highway bridge

Senior editor Dana Kawala shows how he scratchbuilt a 1940s-era highway overpass for the *Model Railroader* staff's HO scale Beer Line addition project layout. He used styrene, wood, and other materials to complete the project.

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# Model railroads are a time machine

We've previously chatted about how a prototype-based scale model railroad is one of the closest approximations of a time machine ever devised. Until virtual reality allows us to venture into a computer-generated past of our own choosing – and I doubt that re-creating the Nickel Plate Road's engine terminal at Frankfort, Ind., in 1954 is going to be high on any developer's list – building a 1:160, or 1:87, or whatever scale model and operating it realistically is our best bet.

Which brings us to central Colorado in the 1890s. The only way I can think of off hand to go there is to visit Andrew Dodge's basement. His abode has long been a portal to a previous time in the Centennial State. Until not that long ago, one could visit the 3-foot-gauge Denver, South Park & Pacific.

As we reported in *Model Railroad Planning 2015* and before that in 2013, Andrew dismantled the South Park in favor of another bold venture back in time, on this occasion to visit the fabled Colorado Midland. He liked the bulk of O scale (1:48, or 1/4" to the foot) modeling. The CM, being standard gauge, would have even more heft than the DSP&P equipment.

Precise historian and modeler that he is, however, O gauge's incorrect 5-foot gauge would not do. So Andrew looked to what we call Proto:48, where the distance between the rails is not only the correct 4'-8½" but the wheel profile, including flanges, is also correctly based on prototype standards.

Never mind that zilch was available to support his new-found quest. He'd simply scratchbuild what he needed, including a roster of steam locomotives. And so he did,



It's Sept. 27, 1897, and Colorado Midland train No. 6, the *Kansas City and Chicago Limited*, arrived late from Grand Junction, Colo. Engine no. 4 will take charge of the train for its trip to Colorado Springs and connections east. Andrew Dodge photo

rivaling the best models that come across the Pacific.

**So what did he get** for his efforts? We can start by assuming he derived a vast amount of satisfaction. One neglects to give proper emphasis to the word "model" in the term "model railroading" at considerable peril. Modeling – that is, actually building models – is as enjoyable and rewarding as it ever was.

Today, with such superb support from both brass importers and the makers of what we loosely term "plastic" models, it's relatively easy to do a credible job of modeling a specific prototype without doing much modeling – unless you choose to model the likes of the Colorado Midland, of course. That allows us to move from concept to realistic operation

at a rapid rate. It also facilitates missing out on one of the more satisfying aspects of our broad-shouldered hobby: model building.

**A good friend** of mine, Jared Harper, who models a Santa Fe branch line in HO scale (MRP 2009), has often stated he would be quite happy to be able to go from planning to operation is no time flat. He sees the railroad-building steps between here and there

as necessary evils, despite being an accomplished scratchbuilder who takes time to do his homework and build highly accurate models.

I understand his viewpoint. But I also suspect that he, like Andrew, gets a lot of pleasure out of sharing his modeling prowess with the rest of us via articles and displays at prototype-modeling meets.

In any event, both gentlemen are building credible replicas in miniature of specific locales at narrowly defined times. Thanks to their considerable efforts, the rest of us are afforded the opportunity to join them on a trip back in time to the days when a limited named for far-off cities plied the rails of the Colorado Midland and a passenger accommodation of far lesser stature polished the rails of that Santa Fe branch.

**Their examples** serve as a testimonial to the potential of scale model railroading. Most of us won't fully realize that potential, and I'm sure both of these modelers will admit to coming up short in their quest for a perfect representation of a given time and place.

This suggests that the quest is perhaps equally or even more enjoyable than the realization of that effort. But as long as the result allows them, and us, to enjoy venturing back in time – decades, years, maybe only weeks – the hobby has served its purpose. **MR**



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