

Add **DCC** and **SOUND** to a small HO diesel p.57



New HO scale
streamliner p.60

August 2016
www.ModelRailroader.com

Model Railroader®

Practical advice!

7 tips for building better bridges

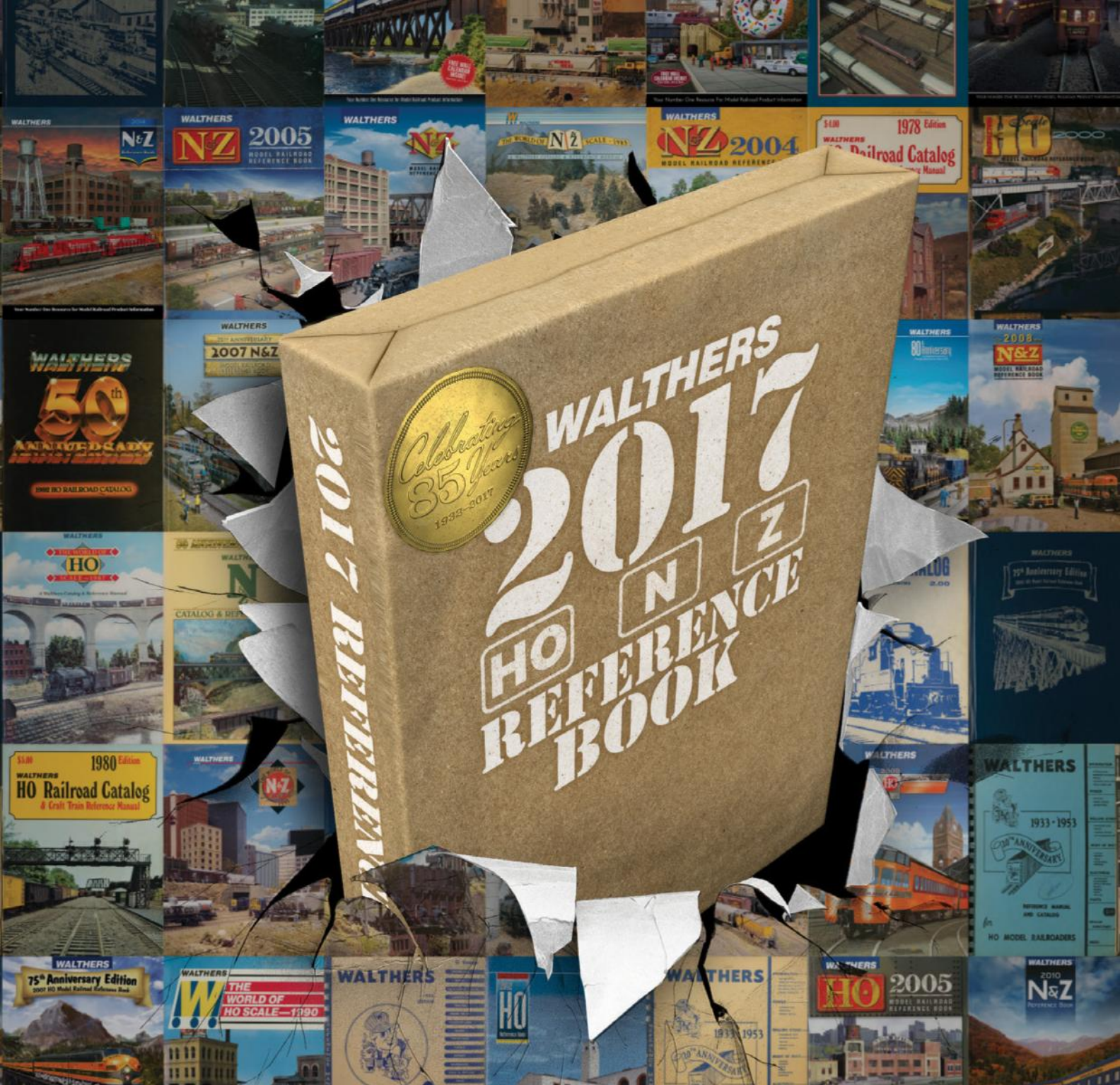
p.48

How to detail
a basic freight
car kit p.36

PLUS

- Visit a steel mill layout p.26
- Keep rails aligned on swing-out gates p.34
- New numbers and weathering for ore cars p.22

**BONUS
ONLINE
CONTENT
CODE PG. 4**



COMING SOON

Three great scales in one big book!
Join the celebration. Reserve yours today!

walthers.com

\$17.98
Fall 2016

TRAIN COLLECTORS ASSOCIATION™

JOIN TCA!

**Friendships that
Last a Lifetime!**

Here are just a few great TCA benefits:

- TCA Train Meets (including York, PA!)
- *3* Publications: The Train Collectors Quarterly, National Headquarters News & TCA E-Train, our online magazine
- TCA x-change (online marketplace)
- National Toy Train Museum
- Toy Train Reference Library



**Call or visit us online for
your application today!**

717.687.8623
www.tcamembers.org

CUSTOM MODEL RAILROADS

Construction of Fine Scale Model Railroads
Private Layouts - Museum Exhibits - Custom Structures
Let us build the Model Railroad of your Dreams



Quality built layouts since 1991

www.custommodelrailroads.com



**Rubley
Building**
NEW FROM CMR

- Kit features tab and slot construction
- Laser cut acrylic and cast parts

**NEW
HO & N
KIT**

Custom Model Railroads
3937 Keswick Road
Baltimore, MD 21211

410-889-0010

www.custommodelrailroads.com

Micro-Mark®
Berkeley Heights, New Jersey 07922

SIZZLIN' SUMMER SALE!

**BIG SAVINGS ON THOUSANDS
OF ITEMS, INCLUDING...**

Steam Locomotives with Sound up to **65% OFF!**



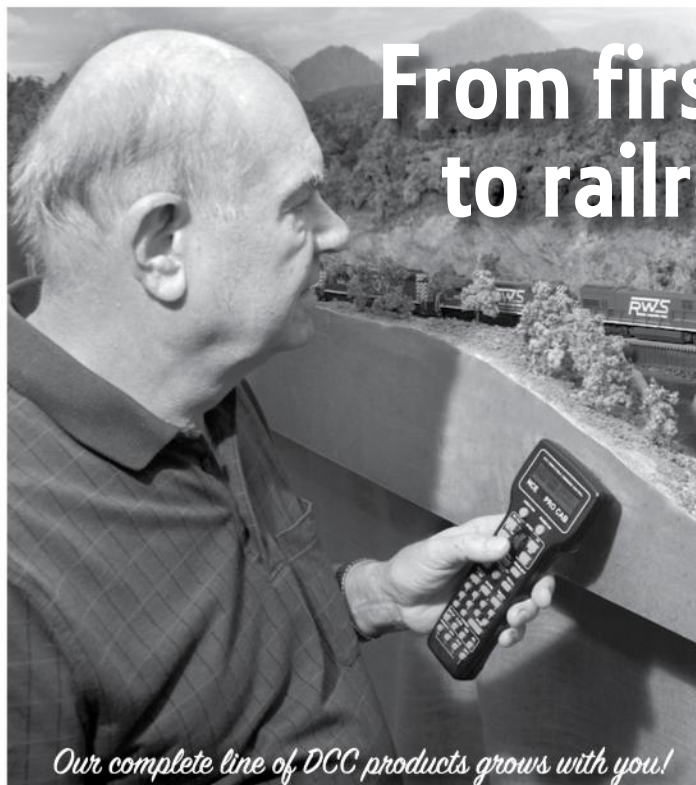
DCC-Equipped
Diesels up to
**43%
OFF!**



To receive sale prices, place your order online at
www.micromark.com/4252
FREE CATALOG with ANY order!

Sale price guaranteed through September 9, 2016

From first train set to railroad empire...



NCE PRO CAB #5240010

Our deluxe Pro Cab™ provides the most user-friendly access to all DCC system features. You'll spend less time pushing buttons and more time running trains! Simple menus on the easy-to-read backlit LCD display will guide you through the most advanced operations with no fuss. Carefully placed controls make controlling speed and functions feel like second nature. Rediscover the fun with a Pro Cab from NCE!



Our complete line of DCC products grows with you!

NCE
The Power of DCC

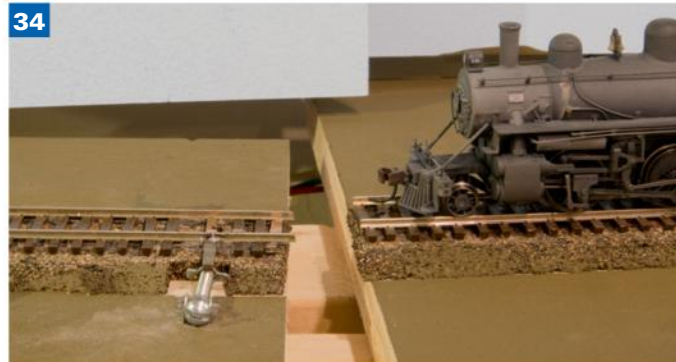
See your dealer or visit ncedcc.com

NCE CORPORATION • 82 EAST MAIN ST. • WEBSTER, NY 14580 • 585.265.0230

Online Content Code: MRR1608

Enter this code at: www.ModelRailroader.com/code
to gain access to web-exclusive content

IN THIS ISSUE



26 Making steel along a Pennsy branch line **MREXTRA**

Heavy industry doubles the size of the HO Waynesburg & Washington RR *by Rich Crumrine*

► Online bonus ModelRailroader.com

34 Aligning track on moveable benchwork **MRVP**

A few turns of a screw keep track aligned on benchwork that swings up, down, out, or away *by Gerry Leone*

► Online bonus ModelRailroader.com

36 Upgrade a plastic freight car kit

Turn an easy-to-assemble car into a well-detailed model using these techniques *by Mont Switzer*

40 Build a simple structure from leftovers

Turn those extra walls, doors, windows, and vents into a one-of-a-kind building *by Pelle Sjøberg*

42 Scratchbuild a wood trestle and truss bridge

The prototype spanned a wide valley on the steam-era Stockton & Copperopolis RR *by Don Ball*

► Online bonus ModelRailroader.com

48 7 helpful hints to better bridges

These tips will help you adapt commercial materials to the situations on your layout *by Mark Dance*

52 Railfanning the Colorado Rockies

Inspired by the Denver & Rio Grande, this HO_{n3} layout sprawls across five rooms *by Dave Rickaby*

68 Trackside Photos

by Steven Otte

NEXT ISSUE



Build a Norfolk Southern Heritage Fleet display, visit a 2 x 4-foot switching module, check out a 4 x 8 track plan, and more, all in the September issue of *Model Railroader*.

57

Add DCC and SOUND to a small HO diesel *p. 57*

60

Model Railroader

New HO scale streamliner *p. 60*
August 2016
www.ModelRailroader.com

Practical advice!

48

7 tips for building better bridges

p. 48

36

How to detail a basic freight car kit *p. 36*

26

PLUS

- Visit a steel mill layout *p. 26*
- Keep rails aligned on swing-out gates *p. 34*
- New numbers and weathering for ore cars *p. 22*

22

On the cover: A Canadian Pacific freight makes its way onto Farr Creek bridge, one of many bridges on Mark Dance's N scale Columbia & Western Ry. Mark Dance photo

IN EVERY ISSUE

6 Digital MR

The latest features on our website *by Dana Kawala*

8 From the Editor

Your favorite issue is ... *by Neil Besouloff*

10 News & Products

Hobby industry news *by Cody Grivno*

16 Railway Post Office

Letters from our readers *by Hal Miller*

18 Ask MR

What does an end-of-train device do? *by Steven Otte*

21 Heritage Fleet

Keeping pace with streamliners *by Keith Wills*

22 Step by Step

How to weather and renumber ore cars *by Cody Grivno*

57 DCC Corner

Squeezing sound into an SW1 switcher *by Larry Puckett*

60 Product Reviews **MREXTRA**



HO scale *Capitol Limited* from Walthers, and more *by Dana Kawala*

67 On Operation

Implementing Rule 99 *by Jerry Dziedzic*

81 Index of Advertisers and Cartoon

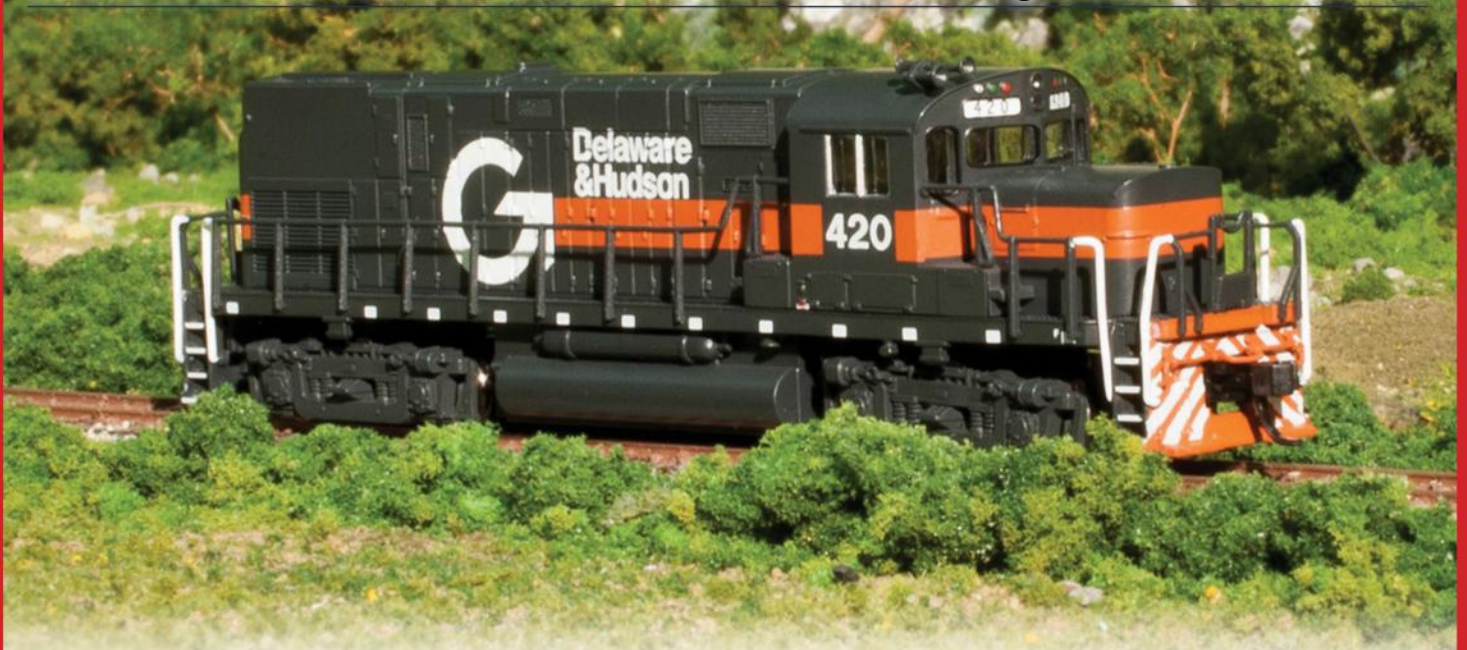
82 Trains of Thought

Having second thoughts first *by Tony Koester*

MREXTRA www.ModelRailroader.com subscriber extra
MRVP Video on www.MRVideoPlus.com

MID-CENTURY MODERN

Atlas Master® N C420 Locomotives – Arriving Soon from Atlas!



ALCO built a total of 131 Century 420 locomotives between 1963 and 1969, when the builder ceased all new locomotive production.

Powered by a 12-cylinder, turbocharged, 2,000-hp 251-series prime mover, the C420's direct competitor in 1963 was the EMD GP18. In fact, EMD did not offer a 12-cylinder, 2,000-hp prime mover until the GP39 model was produced in 1969. The shorter 12-cylinder engine block allowed the C420 to have its distinctive set-back cab and extended short hood.

The C420 can still be found in daily service today in the US. Currently, the largest fleet of C420s is operated by the Arkansas & Missouri Railroad.



**NEW PAINT
SCHEMES &
ROAD NUMBERS!**

For more information regarding this model, please visit
<http://www.atlasrr.com/NLoco/nc420e.htm>

For a copy of our latest All Scales Catalog,
please call 908-687-0880 or visit www.atlasrr.com/catalog



ATLAS MODEL RAILROAD CO, INC. • 378 Florence Ave., Hillside, NJ 07205 • www.atlasrr.com • www.atlaso.com

Layout video and desktop wallpaper



Making steel on a Pennsy branch

MREXTRA

Rick Crumrine doubled the size of his Waynesburg & Washington layout with a section that focuses on the steel industry. Visit www.ModelRailroader.com to download a copy of the image above to use as computer desktop wallpaper. Subscribers can also watch a layout video, featuring the new scenes.

New product video

MREXTRA



Don't miss Walthers' Capitol Limited

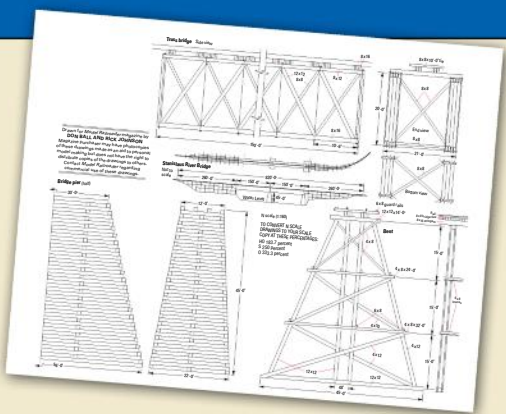
Sleek E-units and dome cars highlight the new HO scale Baltimore & Ohio *Capitol Limited* from Walthers, reviewed on page 60. Subscribers can watch this passenger train run along the main line of our staff layout, the Milwaukee, Racine & Troy. Click on the link under Online Extras.



Prototype plans

Build a wood trestle and truss bridge

Don Ball shares how he scratchbuilt a late-1800s wood trestle and truss bridge on page 42. Click on the link under Online Extras at the MR home page to download a PDF copy of Don's detailed plans for the project.



New MRVP show!



Watch *Off the Rails*

Gerry Leone is a frequent contributor to *Model Railroader* magazine. You'll find his article on making adjustable track for a swing-out benchwork section on page 34. Gerry is also hosting a new show on Model Railroader Video Plus called *Off the Rails*. In the series, he shares his favorite tips as he works on projects and builds a new version of his HO scale Bona Vista RR layout. This month all visitors will have free access to the first episode of this new video series. Want to see more how-to videos? Subscribe to MRVP online at ModelRailroaderVideoPlus.com.

Free e-newsletter

Get the latest hobby news and online extras

Become a member of our web community and you'll always have access to the latest online extras, forums, photo galleries, and more!

Each week you'll also get an email newsletter with hobby news, new model railroading product announcements, and links to new online videos. Sign up today for free. Look for the green login box on the MR home page.



MREXTRA

www.ModelRailroader.com
subscriber extra

MRVP

Video on www.MRVideoPlus.com

Start to Finish



with Woodland Scenics®

Woodland Scenics offers quality products to build your layout from start to finish. With products designed to work together, modeling a realistic layout has never been so easy.

Foundation



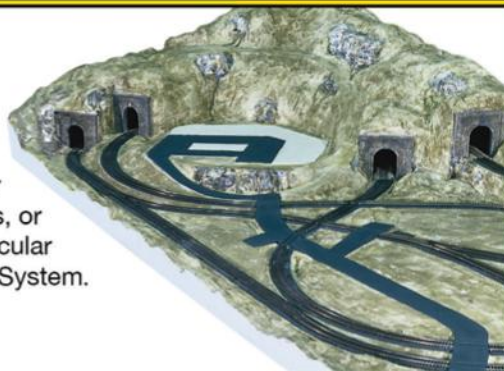
SubTerrain - This revolutionary system consists of sturdy, durable, lightweight foam components that take the guesswork out of creating a layout. The SubTerrain Lightweight Layout System requires no complicated calculations, no expensive power tools, and no dusty mess.



Contours

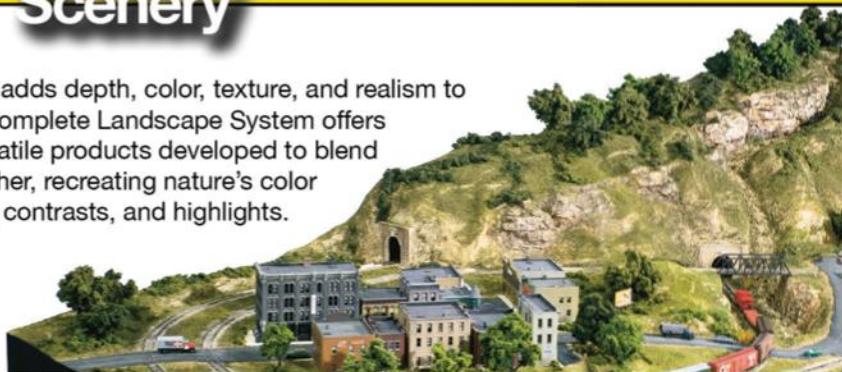


Terrain - With a large variety of products that form, bend, and blend you can model any earth contour imaginable. Whether modeling mountains, valleys, or hills, you will see spectacular results with the Terrain System.



Scenery

Landscape - Landscape adds depth, color, texture, and realism to your layout. The complete Landscape System offers easy-to-use, versatile products developed to blend with each other, recreating nature's color variances, contrasts, and highlights.



Purchase from your local hobby shop.

woodlandscenics.com

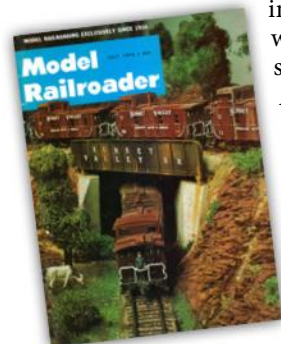
Your favorite issue is ...



Which is your all-time favorite issue of *Model Railroader* magazine?

Write us and tell us. Here's why: the 1,000th issue *Model Railroader* is coming up in April 2017, and we want to include your thoughts about a favorite issue in April's magazine. April is still months away, but we need your help now, here in summer, to pull this off.

Send us no more than 250 words about your favorite issue and why it is important to you, and we'll publish the best submissions in next April's magazine.



If you write a few more than 250 words that's still OK, but the longer your submission gets, the less likely we'll be able to fit it into the April issue.

You don't need to send us a photo of the cover of your issue – we've got a full collection of magazines and then some here at Kalmbach Publishing Co.

Send your comments to us in an email at favorite@mrmag.com. Be sure to include the exact month and year of your favorite issue, your full name and the name of your city, state, and also the name of your country if you live outside the United States.

If you wish to write us on paper, address the envelope to us at:

Model Railroader magazine
Favorite issue submission
P.O. Box 1612
Waukesha, WI 53187-1612

I'll spill the beans right now about my favorite issue. It's July 1973, over there on the left side of this page. On the cover is a photo of Bruce Chubb's Sunset Valley RR, specifically his cabooses. Inside on page 38 is a story about painting, lettering, and detailing cabooses.

Bruce used Athearn cabooses on his layout at the time. I, too, had an Athearn caboose, so I just had to weather my freelance-lettered caboose. (I had just turned 13, and the names of my freelance railroads were greatly influenced by my ability to acquire dry-transfer lettering – so I can't begin to tell you what railroad name I was using in July 1973.)

Needless to say, my efforts fell short of Bruce's models, but it was a start.

The cover photo sealed it for me. Not just the cabooses. I was still living in Figure-8 world when it came to track planning, and Bruce's bridge scene depicted exactly the type of overpass that I imagined on my railroad.

So dig into your stack of old *Model Railroaders* (or go to our archive at www.ModelRailroader.com/AllAccess) and write to us about your favorite issue.

NEIL BESOUGLOFF

Model Railroader

Model railroading is fun!

Founder A.C. Kalmbach 1910-1981

Editor Neil Besougloff
Managing Editor Hal Miller
Senior Editor Dana Kawala
Associate Editors Cody Grivno, Steven Otte, Eric White
Contributing Editors Tony Koester, Pelle Søeborg, Larry Puckett

Phone 262-796-8776
E-mail mrmag@mrmag.com
Fax 262-796-1142

Model Railroader Art Team

Art Director Thomas G. Danneman
Senior Graphic Designers Scott Krall, Drew Halverson
Lead Illustrator Rick Johnson
Production Coordinator Cindy Bader

Model Railroader Video Plus

Producer A. David Popp
Associate Producer Kent Johnson
Associate Editor Ben Lake
Editorial Assistant Jenny Maaske

Customer Sales and Service

Phone 800-533-6644
Outside U.S. and Canada 813-910-3616

Customer Service
Modelrailroader@customersvc.com
Digital
Modelrailroader.digital@customersvc.com
Back Issues
Modelrailroader.SingleCopy@customersvc.com

Advertising Department

Group Advertising Manager Scott Redmond
Ad Sales Manager Paul Steinhafel
Ad Sales Representative Martha Stanczak
Ad Services Representative Daryl Pagel

To purchase an advertisement

Phone 888-558-1544, ex. 643
E-mail adsales@mrmag.com

Circulation Department

Circulation Manager Catherine Daniels
Single Copy Specialist Kim Redmond

To sell Model Railroader in your store:

Phone 800-558-1544, press 3
Outside U.S. and Canada 262-796-8776, ex. 818
E-mail tss@kalmbach.com
Website www.Retailers.Kalmbach.com
Fax 262-798-6592

Kalmbach Publishing Co.

President Charles R. Croft
Senior VP, Sales & Marketing Daniel R. Lance
VP, Content/Editorial Director Stephen C. George
VP, Consumer Marketing Nicole McGuire
Corporate Advertising Director Scott Bong
Corporate Art Director Maureen M. Schimmel
Art and Production Manager Michael Soliday
General Manager Brian J. Schmidt

SUBSCRIPTION RATE: Single copy: \$5.99; U.S.: 1 year (12 issues) \$42.95; 2 years (24 issues) \$67.95; 3 years (36 issues) \$94.95. Canadian: Add \$13.00 postage per year. Canadian price includes GST. BN 12271 3209 RT, payable in U.S. funds. All other international subscriptions: Add \$20.00 postage per year, payable in U.S. funds, drawn on a U.S. bank. ©2016, Kalmbach Publishing Co. Title registered as trademark. All rights reserved.



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, hobby tips, and club news items are contributed gratis.

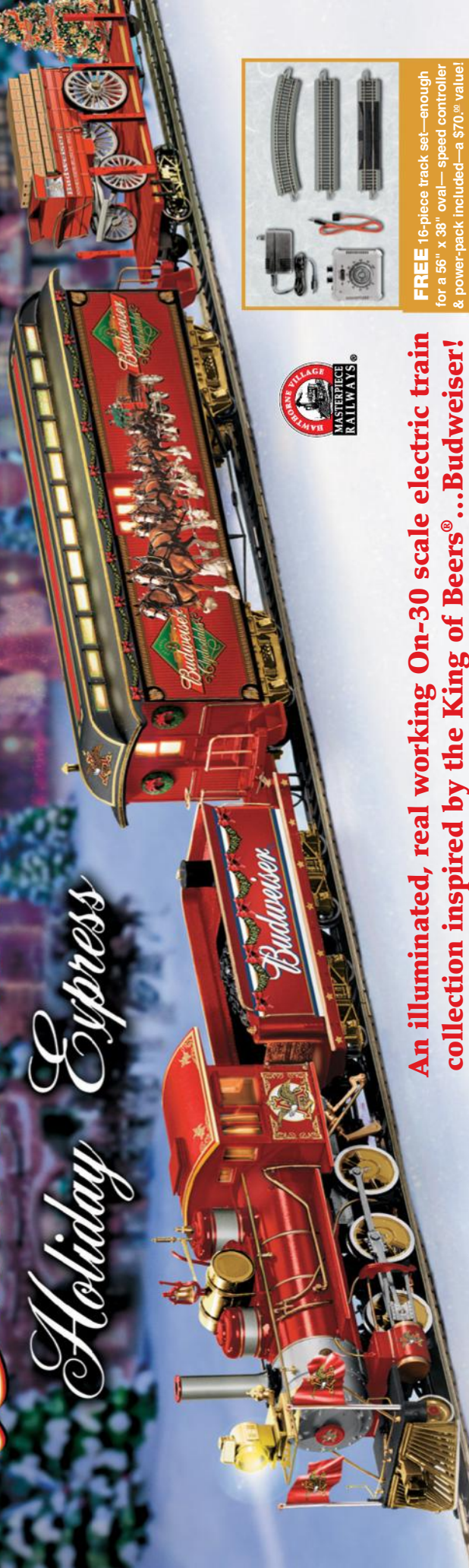
Delivering all the joys of the season!

Budweiser® Holiday Express



Exclusively from
Hawthorne Village

Adult Collectible.
Not intended for sale to
persons under 21 years of age.



**An illuminated, real working On-30 scale electric train
collection inspired by the King of Beers®...Budweiser!**



FREE 16-piece track set—enough
for a 56" x 38" oval—speed controller
& power-pack included—a \$70.00 value!

There are many things that signal the start of the holiday season. But a sure sign that Christmas is on its merry way is seeing the famous advertising featuring those gentle giants of Budweiser®—the World Famous Budweiser Clydesdales—trotting through a winter wonderland. Now Hawthorne is proud to introduce the *Budweiser Holiday Express* that's positively brimming with the joyous spirit of the King of Beers®! This classic, heirloom quality train—that includes a working headlight on the steam locomotive—features dramatic, full-color artwork of the World Famous Budweiser Clydesdales, fully-sculpted Budweiser icons including the historic Budweiser Beer Wagon and is richly adorned with holiday motifs.

An exceptional value. Begin your illuminated On30 scale train collection—that runs on HO gauge track—with the "Steam Locomotive and Tender." Your first of three easy payments of \$23.33* is due before they are shipped. Soon, you can look forward to adding coordinating *Budweiser Holiday Express* passenger cars including the **FREE** tracks, speed controller and power-pack! They will be billed separately each at the same attractive price and sent about one every other month. You can cancel at any time simply by notifying us. **Satisfaction guaranteed. Act now.** This is a limited-time offer and strong demand from the legions of fans of Budweiser-themed collectibles is expected. Orders are limited to one train collection per customer. You need *send no money now*. Just complete and mail the coupon today.

©2010 Anheuser-Busch, Inc., Budweiser® Beer, St. Louis, MO ©2010 Hawthorne Village 14-00432-001-B/R

www.bradfordexchange.com/budexpress

FREE TRACKS, SPEED CONTROLLER & POWER-PACK WITH SHIPMENTS 2 & 3—\$70 VALUE

THE BRADFORD EXCHANGE

HAWTHORNE VILLAGE DIVISION

BRADFORD EXCHANGE HAWTHORNE VILLAGE DIVISION,
9210 N. MARYLAND ST., NILES, IL 60714-1322

Limited-time Offer—Please Respond Promptly

Signature

Yes! Please enter my order
for one *Budweiser® Holiday*

Express illuminated electric
On30 scale train collection,
beginning with the "Steam
Locomotive & Tender" as
described in this announce-
ment. I need SEND NO
MONEY NOW.

Signature

Mrs. Mr. Ms.

Name (PLEASE PRINT CLEARLY)

Address

Apt. No.

State

Zip

Email

Certificate of Authenticity and 365-day Unconditional Guarantee

917152-E05701

* Plus \$9.99 shipping and service, subject to change. All sales subject to
acceptance and product availability. Please allow 4-6 weeks for delivery.



N scale General Electric B36-7 diesel locomotive.

New paint schemes on this Atlas Master Line four-axle road unit are CSX and Seaboard System. The B36-7 is offered in three road numbers per scheme and features a low-friction mechanism with dual brass flywheels, golden-white light-emitting diodes, and Accumate

couplers. Direct-current models retail for \$124.95. Models with a dual-mode motor decoder list for \$159.95. Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com

Industry news

■ **Monroe Models purchases AIM Products.** Monroe Models, a St. Cloud, Minn.-based manufacturer of HO and N scale structures and detail parts, purchased AIM Products in May. Mark Ballschmieder, owner of AIM Products, retired after more than 22 years in the model railroad industry.

AIM Products has long been known for its line of tunnel portals, retaining walls, and bridge abutments. In recent years, the company has added weathering stains, powders, and washes to its product lineup.

Monroe Models plans to continue all items produced by AIM Products and add to the line. For more information, visit www.monroemodels.us.

HO scale locomotives

■ **General Electric U33B and U36B diesel locomotives.** U33B: Penn Central, Reading & Northern (two road numbers), and Rock Island (maroon and yellow). U36B: Auto Train and Seaboard Coast Line (American Revolution Bicentennial scheme in one number and yellow and black). Four numbers per scheme unless noted; undecorated models also available. Prototype-specific

details, golden-white light-emitting-diode headlights, and blackened metal wheels. Direct-current model with eight-pin socket for Digital Command Control decoder, \$169.95 (bicentennial, \$189.95); with ESU LokSound Select dual-mode sound decoder, \$279.95 (bicentennial scheme, \$299.95). Fourth quarter 2016. Master Line. Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com

■ **Electro-Motive Division F59PHI diesel locomotive.** Amtrak (California and Pacific Surfliner), Caltrain, Coaster, Go Transit, Metrolink, and Northstar. Two road numbers per scheme. Prototype-specific details, separately applied wire grab irons, and die-cast metal frame. Direct-current model with 8- and 9-pin sockets for Digital Command Control decoder (sold separately), \$124.98; with SoundTraxx Econami sound decoder, \$184.98. February 2017. Ready-to-Roll. Athearn Trains, 800-338-4639, www.athearn.com

■ **General Motors Diesel Division SD40-2 diesel locomotive.** New paint schemes: Algoma Central; BC Rail (red, white, and blue); Canadian National (ex-Ontario Hydro), three road numbers; CP Rail (12 versions, select models in one number); HLCX (ex-Quebec, North

Shore & Labrador); O.N. Rail; Quebec, North Shore & Labrador; and St. Lawrence & Hudson (two versions, one number each). Two numbers per scheme unless noted. Metal grab irons, brass air horn, and Kadee couplers. Direct-current model with 21-pin socket for Digital Command Control decoder, \$199.95; with dual-mode ESU LokSound Select decoder, \$299.95. January 2017. Bowser Manufacturing Co., 570-368-2379, www.bowser-trains.com



■ **Union Pacific post-2006 steam excursion water tender set.** Jim Adams and Joe Jordan. Different weld seam locations and riveted end access plates for each tender, directional lighting, and Commonwealth trucks with rotating bearing caps. Jim Adams features American flag printed on separate metal

► Mobile Updates



Scan the code to access *Model Railroader's* website for weekly News & Products updates.

Cody Grivno

placard. \$119.99. Rivet Counter line. ScaleTrains.com, 844-987-2467, www.scaletrains.com

■ **Electro-Motive Division mid-production SD40-2 diesel locomotive.** Atchison, Topeka & Santa Fe (yellow bonnet) and Burlington Northern (as-delivered scheme). Two road numbers per scheme. Golden-white light-emitting-diode headlights, printed number boards, and speaker housing in fuel tank. Direct-current model, \$185; with ESU LokSound Digital Command Control and sound decoder, \$285. Kato USA Inc., 847-781-9574, www.katousa.com

HO scale freight cars

■ **Assorted freight cars.** Bangor & Aroostook and Northern Pacific 40-foot double-sheathed refrigerator cars, \$17.98 each. Chicago, Burlington & Quincy; Denver & Rio Grande Western; and Western Pacific 40-foot boxcars (single car, \$16.98; three-pack, \$49.98). Dakota, Minnesota & Eastern 4,750-cubic-foot-capacity covered hopper, \$18.98. Grand Trunk Western 40-foot steel refrigerator car, \$17.98. Lackawanna Steel Co. and Western Maryland United States Railroad Administration two-bay hoppers, \$15.98 each. Lehigh Valley 50-foot double-door boxcar, \$16.98. Southern Pacific 40-foot stockcar, \$16.98. Toronto, Hamilton & Buffalo three-bay offset-side hopper, \$16.98. Injection-molded plastic kits with plastic wheelsets and Accumate couplers. Accurail, 630-365-6400, www accurail.com

■ **24-foot ore car.** With exterior posts: Chicago & North Western. With offset side: Bessemer & Lake Erie; Duluth, Missabe & Iron Range; Great Northern; Milwaukee Road; and Union Pacific. Nine road numbers per scheme (single car and two 4-packs). Removable ore load, nickel-silver RP-25 contour wheelsets, and McHenry scale couplers. Single car, \$21.98; four-pack, \$79.98. February 2017. Roundhouse line. Athearn Trains, 800-338-4639, www.athearn.com

■ **American Car & Foundry 11,000-gallon tank car.** New paint schemes. Without platform: Gas-Oil Products and Propane Gas Service. With platform: Gem Automatic Gas Co., Jefferson Chemical, Pyrofax Gas, and



HO scale Trinity 31,000-gallon crude oil tank car. Deep Rock Refining Co. and Trinity Industries Leasing are the first two road names on this new model from ScaleTrains.com. The tank car, part of the firm's Rivet Counter line, is offered in 24 road numbers per scheme. The cars feature etched-metal head shields, printed hazmat placards, and Barber S-2-HD-9C 110-ton trucks with rotating blue bearing caps. One to five cars sell for \$38.99 each; six to 11 cars are priced at \$36.99 each; and 12 or more cars list for \$35.99 each. ScaleTrains.com, 844-987-2467, www.scaletrains.com

Superior Propane. New road numbers. With platform: Union Tank Car. Two numbers per scheme; both body styles also available undecorated. Safety placards, 50-ton solid-bearing trucks, and molded handrails. \$39.95 (undecorated, \$32.95). Master Line. Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com

■ **Bethlehem 3,716- and 3,737-cubic-foot-capacity four-bay hoppers.** New paint schemes. 3716: Missouri Pacific (1984 small eagle repaint, three road numbers). 3737: Chicago & North Western (1971 as-delivered scheme, six numbers), Indianapolis Power & Light (1973 as-delivered scheme, 12 numbers), Missouri Pacific (1984 small eagle repaint, three numbers), and Union Pacific (MP nos. 588145 and 588400). Wire grab irons, metal wheelsets, and Kadee couplers. \$39.95. Platinum Series. ExactRail LLC, 866-945-1701, www.exactrail.com

■ **36-foot three-dome tank car.** Anderson-Prichard Oil Corp., General American, Gulf Oil Corp., J.M. Huber Inc., Shell Co. of California, and Union 76. Two road numbers per scheme. Detailed underbody with AB brakes, 33" turned-metal wheelsets, and Proto-Max couplers. \$27.98. September 2016.

Walther's Mainline. Wm. K. Walther's Inc., 414-527-0770, www.walthers.com

HO scale structures

■ **Atchison, Topeka & Santa Fe modern brick station.** Injection-molded plastic kit. Based on original 1954 Santa Fe plans for station in Hutchinson, Kan. \$49.98. November 2016. Cornerstone Series. Wm. K. Walther's Inc., 414-527-0770, www.walthers.com

► In Memoriam

Charles R. Yungkurth

Charles R. "Chuck" Yungkurth, author of more than 150 articles and prototype drawings in *Model Railroader* and other hobby publications, died on May 9. Chuck retired after a career as a mechanical engineer. He also did engineering design for a number of model railroad manufacturers. His opinion column "Learning by scratchbuilding" appeared in the October 1998 issue of MR.

NEWS&PRODUCTS



N scale assorted freight cars. The latest releases from Micro-Trains include a Great Northern 40-foot double-sheathed 1½-door boxcar, \$21.95; a Baltimore & Ohio 40-foot stockcar (two road numbers), \$19.90; a Fruit

Growers Express 51-foot riveted-side mechanical refrigerator car, \$24.75; and a Western Pacific 50-foot gondola with removable cover, \$23.80. The injection-molded plastic models have plastic wheelsets and Magne-Matic couplers. Micro-Trains Line Co., 541-535-1755, www.micro-trainsline.com



■ **Hardee's restaurant.** Laser-milled styrene kit with street sign, self-adhesive logos and posters, and clear acrylic window glazing. Footprint is 8¼" x 4¾". \$79.95. Summit USA, 337-436-8481, www.summit-customcuts.com



■ **Cabin Creek Fire Station no. 1.** Laser-cut basswood and plywood kit with detail castings and positionable windows. Footprint is 35 x 58 scale feet. \$89.95. B.T.S., 304-823-3729, www.btsrr.com

H0 scale train sets

■ **First Responder train set.** BNSF Ry. and Norfolk Southern. Set includes Electro-Motive Division GP38-2 diesel locomotive (BNSF Ry. in Heritage III scheme, NS in "Training First Responders" scheme), 40-foot single-dome tank car, 50-foot boxcar with exterior posts, 50-foot flatcar with removable fire truck load, wide-cupola caboose, 36" x 45" oval of Bachmann E-Z Track, and Athearn TrainPak power pack. \$219.98. October 2016. Roundhouse line. Athearn Trains, 800-338-4639, www.athearn.com

N scale locomotives

■ **4-6-6-4 steam locomotive.** Northern Pacific (two road numbers) and Spokane, Portland & Seattle (one number). Detailed boiler backhead, tender light, five-pole skew-wound motor with dual flywheels, and McHenry couplers. With SoundTraxx Tsunami dual-mode sound decoder, \$479.98. AthearnN. Athearn Trains, 800-338-4639, www.athearn.com

■ **Electro-Motive Division SD24 and SD26 diesel locomotives.** New paint scheme. SD24: Southern Pacific. New road numbers. SD24: Atchison, Topeka & Santa Fe (zebra stripes with billboard lettering); Burlington Northern; Southern Ry.; and Union Pacific. SD26:

Atchison, Topeka & Santa Fe (blue and yellow); and Springfield Terminal (Guilford scheme). Three numbers each. Golden-white light-emitting-diode headlights, blackened metal wheels, and Accumate couplers. Direct-current model, \$124.95; with Digital Command Control motor decoder, \$159.95. Fourth quarter 2016. Master Line. Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com

■ **Union Pacific class FEF-3 4-8-4 steam locomotives.** Freight and excursion version. One road number each. Coreless motor with brass flywheels, illuminated headlight and number boxes, and factory-installed detail parts. Freight version features black drivers, graphite smokebox, and matte paint. Excursion version has white driver rims, silver smokebox, and gloss paint. Direct-current model, \$275; with TCS Digital Command Control motor decoder, \$310; with ESU LokSound Digital Command Control and sound decoder, \$425. Kato USA Inc., 847-781-9574, www.katousa.com

N scale freight cars

■ **52-foot mill gondola.** Amtrak; Atchison, Topeka & Santa Fe; Chicago & North Western; Detroit, Toledo & Ironton; Golden West Service (with GVSR and DRGW reporting marks); and



SmartSwitch crossing gate module. Control crossing gates on model railroads in N through O scales with this device from ANE Model. The SmartSwitch crossing gate module features two to four set infrared detection, two types of warning sounds with a built-in speaker, connections for controlling gate arms, and one set of warning light-emitting-diode light outputs. The module, priced at \$47.95, is suitable for double- or triple-track detection. ANE Model, www.anemodel.com

Norfolk Southern (horse-head silhouette herald). Three road numbers per scheme. Screw-mounted 100-ton roller-bearing trucks, metal wheelsets, and McHenry couplers. \$19.98. February 2017.

AthearnN. Athearn Trains, 800-338-4639, www.athearn.com

■ **90-ton hopper.** New road numbers: BNSF Ry., Canadian National, CSX, Norfolk & Western, Norfolk Southern, and Southern Pacific. Three numbers per scheme. Separately applied brake wheel, plastic wheelsets, and truck-mounted Accumate couplers. \$19.95. Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com



■ **United States Railroad Administration 30'-6" two-bay hopper.** New paint schemes: Peabody Short Line; Delaware, Lackawanna & Western; Detroit, Toledo & Ironton (single car and two-pack); Jersey Central Lines; Litchfield & Madison (single car and two-pack); Minneapolis & St. Louis (single car and two-pack); Nickel Plate Road; Tennessee Central (single car and two-pack); Western Ry. of Alabama (single car and two-pack). Six road numbers per scheme unless noted; also

available painted black with data only (single car). Die-cast metal slope sheet, hopper bay, and center sill assembly; injection-molded plastic sides, ends, and hopper doors; and Fox Valley Models metal wheelsets. Single car, \$23.95; two-pack, \$47.90; and three-pack, \$71.85. Fourth quarter 2016. Bluford Shops, 618-822-6833, www.bluford-shops.com

■ **Thrall 48-foot well car.** Atchison, Topeka & Santa Fe; Canadian Pacific; Florida East Coast; and TTX (old and new schemes). Four road numbers (two each on stand-alone car and five-unit articulated car). Die-cast metal body. Well can carry 20-, 40-, and 48-foot intermodal containers. Stand-alone car, \$24.98; five-unit articulated car, \$99.98. November 2016. Walther'sN. Wm. K. Walther's Inc., 414-527-0770, www.walters.com

N scale passenger cars



■ **70-foot heavyweight mail baggage car.** New paint schemes: Canadian Pacific (\$29.95) and Milwaukee Road (\$30.80). One road number per scheme. Injection-molded plastic models

track cleaning supplies

wooden scale models

train photographs laser
etched on marble,
wood, and granite

customize your lasered
beverage glasses

Visit us at
www.magnificenttrains.com

NICHOLAS SMITH TRAINS

Model Railroading For All Seasons®

VISIT OUR WEBSITE, OR GIVE US A CALL

For orders only: 1-800-848-9119

Product Info (610) 353-8585 • Fax (610) 359-9846

USA Shipping - \$0.00-\$500.00 - \$13.00; \$500.01-\$1200.00 - \$17.00

MINIMUM ORDER: \$30.00 • 15% Restocking Fee on Returns

No P.O. Boxes Please; PA Residents Add 6% Sales Tax

Bachmann Sound Value SUPER SALE

BAC51807 PRR Alco 2-6-0 #3233	\$104.99
BAC51808 NYC Alco 2-6-0 #1904	\$104.99
BAC51810 UP Alco 2-6-0 #39	\$104.99
BAC51811 B&M Alco 2-6-0 #1360	\$104.99
BAC51812 Wabash 2-6-0 #573	\$104.99
BAC51813 Lackawanna 2-6-0 #565	\$104.99
BAC51814 CN 2-6-0 #409	\$104.99
BAC51815 Southern 2-6-0 #7082	\$124.99
BAC51816 ATSF 2-6-0 #9448	\$124.99
BAC63201 WM Alco S4 Switcher #146	\$99.99
BAC63203 NYC/PL&E Alco S4 Switcher #6662	\$99.99
BAC63205 UP Alco S4 Switcher #1156	\$99.99
BAC63209 AT&SF Alco S4 Switcher #1523	\$99.99
BAC63212 Erie Lackawanna Alco S4 Switcher #528	\$99.99
BAC63214 C&O S4 Switcher #5109	\$129.99
BAC63215 C&NW S4 Switcher #1078	\$129.99
BAC63216 PRR S4 Switcher #8487	\$129.99
BAC63401 AT&SF S2 Switcher #2354	\$99.99
BAC63402 B&O S2 Switcher #9129	\$99.99
BAC63403 PRR S2 Switcher #8432	\$99.99
BAC63902 CP Alco RS3 #8438	\$112.99
BAC63904 Erie Alco RS3 #932	\$112.99
BAC63907 Seaboard Alco RS3 #1633	\$112.99
BAC63908 Santa Fe Alco RS3 #2099	\$112.99
BAC63909 Interstate Alco RS3 #31	\$129.99
BAC64301 ATSF F7A	\$109.99
BAC64401 ATSF F7B	\$109.99
BAC64302 NYC F7A	\$109.99
BAC64402 NYC F7B	\$109.99
BAC64303 NS F7A	\$109.99
BAC64403 NS F7B	\$109.99
BAC64305 PRR F7A	\$109.99
BAC64405 PRR F7B	\$109.99
BAC64701 CN FA-2	\$99.99
BAC64901 CN FB-2	\$99.99
BAC64702 NYC FA-2	\$99.99
BAC64902 NYC FB-2	\$99.99
BAC64703 EL FA-2	\$99.99
BAC64903 EL FB-2	\$99.99
BAC64705 B&O FA-2	\$99.99
BAC64905 B&O FB-2	\$99.99
BAC64706 PRR FA-2	\$99.99
BAC64906 PRR FB-2	\$99.99
BAC65301 PRR GG1 Green Single Stripe	\$154.99
BAC65302 PRR GG1 Red Five Stripe	\$154.99
BAC65303 PRR GG1 Green Five Stripe Black Jack	\$154.99
BAC65304 PRR GG1 Silver with Red Stripe	\$154.99
BAC65305 PC GG1	\$154.99
BAC65306 Amtrak GG1 #906	\$174.99
BAC65307 PRR GG1 Green Feathered Strp #4829	\$174.99
BAC65401 Central of Georgia ES44AC	\$149.99
BAC65402 Southern ES44AC	\$149.99
BAC65403 Lehigh Valley ES44AC	\$149.99
BAC65404 PRR ES44AC	\$149.99
BAC65405 Nickel Plate ES44AC	\$149.99
BAC65602 GM Demo GP7	\$109.99
BAC65604 ACL GP7	\$109.99
BAC65605 B&M GP7	\$109.99
BAC66001 Wabash SD70ACe	\$149.99
BAC66002 Erie SD70ACe	\$149.99
BAC66003 Central New Jersey SD70ACe	\$149.99
BAC66004 NYC SD70ACe	\$149.99
BAC66005 Virginian SD70ACe	\$149.99
BAC66802 Norfolk Southern GP38-2 #5555	\$124.99
BAC66803 CSX GP38-2 #2640	\$124.99
BAC66804 Alaska GP38-2 #2007	\$124.99

Hours: M,W,F 10-9 • T & Th 10-7 • Sat 10-5 •

Sun 10-5 (Nov. 1st-Dec. 24th)

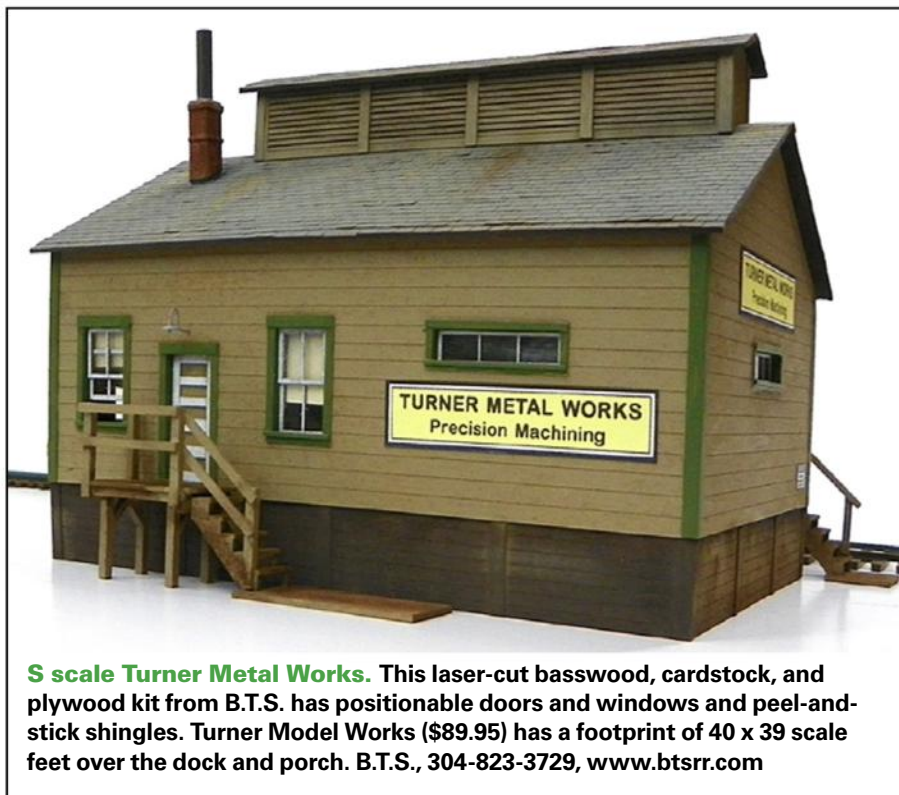
2343 West Chester Pike • Broomall, PA 19008

(610) 353-8585 • ESTABLISHED 1909

Prices Subject to Change Without Notice; Not Responsible For Typographical Errors

www.nicholassmithtrains.com

Model Railroader August 2016



S scale Turner Metal Works. This laser-cut basswood, cardstock, and plywood kit from B.T.S. has positionable doors and windows and peel-and-stick shingles. Turner Model Works (\$89.95) has a footprint of 40 x 39 scale feet over the dock and porch. B.T.S., 304-823-3729, www.btsrr.com

with removable roof, clear window glazing, plastic wheelsets and Magnetic couplers. Micro-Trains Line Co., 541-535-1755, www.micro-trainsline.com

■ **Bombardier bi-level commuter cars.** Caltrain, Coaster, GO Transit, Metrolink, and Northstar. Five road numbers per scheme (single cab car, single coach, and coach three-pack). Screw-mounted trucks, separately applied grab irons, and detailed interior. Single cars, \$46.98 each; three-pack, \$134.98. February 2017. AthearnN. Athearn Trains, 800-338-4639, www.athearn.com

■ **80-foot heavyweight baggage-horse car.** Chesapeake & Ohio (1941 horse express car with modernized doors, three road numbers); Atchison, Topeka & Santa Fe (1951 to 1953 converted steel heavyweight horse express car, Coach Green in four numbers and MOW silver in one); Southern Pacific class 80-BH-1 baggage-horse car (Dark Olive and two-tone gray with wood doors in two numbers each, solid gray with modernized doors in one number, and painted Dark Olive but unlettered with wood doors); and SP class 80-B rebuilt baggage-express car (two-tone gray with modernized doors and *San Joaquin Daylight* with multi-pane doors in two numbers each). \$48.95. Fall 2016. Wheels of Time, 866-737-9654 (fax), www.wheelsotime.com

N scale details and accessories

■ **40-foot standard height inter-modal container.** Gold Container, Hanjin, K-Line, Maersk Line, and Maersk Sealand. Six container numbers (two 3-packs) per scheme. \$29.95. Fourth quarter 2016. Atlas Model Railroad Co., 908-687-0880, www.atlasrr.com

■ **53-foot trailers.** Alliance Shippers Inc., Clipper Controlled Logistics, Roadway, Triple Crown, and Yellow. Three trailer numbers per scheme. \$19.95. Fourth quarter 2016. Trainworx Inc., 970-874-9747, www.train-worx.com



■ **Assorted horse-drawn wagons.** Amish buggy, \$14.95; Concord coach, \$18.95; cutter sleigh, \$10.95; IHC farm wagon, price to be announced; and milk and bread van, \$15.95. Etched-brass kits with snip, fold, and glue assembly. No soldering required. Etched Making A

Scene line. The N Scale Architect, 607-746-8416, www.thenarch.com

O scale freight cars

■ **Association of American Railroads 70-ton, three-bay hopper.** New paint schemes: Chicago, Burlington & Quincy (pre-merger lettering); Central of Georgia (wood-chip service); Chesapeake & Ohio (wood-chip service); Grand Trunk Western; and Union Pacific. Arched or flat end as appropriate; sprung, die-cast metal trucks; and removable load. \$57.95. Third quarter 2016. Trainman line. Atlas O, 908-687-9590, www.atlaso.com

O scale structures

■ **Assorted structures.** Ace Feed & Supply (footprint is 13 1/8" x 6 3/4"), Fairview Farm Dairy (9" x 11"), and Riverton Station (13 1/2" x 7"). Injection-molded plastic kits with snap-together main parts and decals. \$59.95 each. Hillside Structures Series. Third quarter 2016. Atlas O, 908-687-9590, www.atlaso.com

Z scale locomotives



■ **Electro-Motive Diesel SD70ACe diesel locomotive.** BNSF Ry. (post-2005 scheme, two road numbers) and Union Pacific (Western Pacific heritage scheme, one number). Can motor with dual flywheels, traction tires, light-emitting-diode headlights, and Auto-Latch couplers. American Z Line, 614-764-1703, www.americanzline.com

Z scale freight cars



■ **Atchison, Topeka & Santa Fe class CE-1 offset-cupola caboose.** Three road numbers. Factory-painted brass model with AutoLatch couplers and metal wheelsets. American Z Line, 614-764-1703, www.americanzline.com

► Club offerings



■ **The Eureka Co. United States Railroad Administration 40-foot double-sheathed boxcar.** Accurail HO scale kits decorated for the Illini Chapter of the Professional Car Society. Two paint schemes available. \$19.98 each plus \$6.80 shipping for one car or \$9.50 for two or more cars to addresses in the United States; \$15.50 for any number of cars to Canada; and \$23 for any number of cars to other countries. Check or money order payable and mailed to Illini Chapter PCS, 918 W. Colfax St., Palatine, IL 60067



■ **Assorted HO scale freight cars.** Accurail HO scale models custom-decorated for the Kankakee Railroad Museum. Bear Brand Hosiery Association of American Railroads 40-foot boxcar, Gohlke Coal offset-side twin hopper, Kankakee Ice Co. 40-foot steel refrigerator car (two road numbers), and Shaeffer Piano Co. 40-foot double-sheathed boxcar (two numbers). One number per scheme unless noted. Kits, \$25 each; assembled (with Kadet no. 5 couplers), \$30 per car. Shipping: single car, \$3; two cars, \$6 to \$9 (depending on location). Kankakee Railroad Museum, 197 S. East Ave., Kankakee, IL 60901 **MR**

CadRail

**THE RAILROAD
DESIGN PROGRAM**

Advanced
Layout
Design

CadRail.com

Sandia Software

104 Pequeno NW
Abq., NM 87107
505-821-0014

Internet DL \$89.95, Parcel Post with manual & CD \$129.95
US add \$8.00 S&H, all others add \$15.00 S&H.
Visa, MC, Dis, Am Ex, M.O., CK. Prices subject to change.

Tsunami²

SoundTraxx continues our legacy of innovative products with Tsunami2, a brand new line of digital sound decoders that have more sounds, smoother operation and some completely new ways to do more with your trains. The operative word is "operation", with three prototypical braking methods, the best-ever Dynamic Digital Exhaust™ for both Steam and Diesel versions and oodles (yes, oodles!) of amazing new sounds and effects. From the first DCC sound decoder, to the first Functional Brake, Equalizer - and a whole lot more - SoundTraxx has been leading the way in sound for your railroad for over 25 years.

SOUNDTRAXX®

141 Burnett Drive, Durango, Colorado 81301
(970) 259-0690 Fax: (970) 259-0691 Website: www.soundtraxx.com

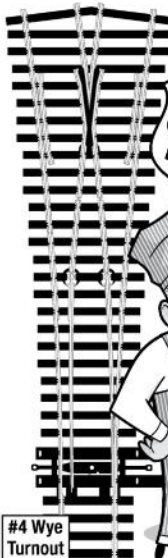
Tsunami2 Features:

- 32-Bit Processor capable of 16 simultaneous sound channels
- Flex-Map technology allows mapping any function to any function key
- Hyperdrive2 motor control
- Adjustable reverb
- Built in Equalizer
- 20+ Different Lighting Effects
- Steam, diesel and electric versions with multiple selections in each decoder
- Over 60 whistles, over 40 horns, multiple prime movers, chuffs, bells and more!

Think you've heard it all? Visit our website today! We've got something to make you giggle!

PECO HO Code 83 Turnouts

THE TRACK SPECIALIST'S '4 WORDS OF WISDOM'



**83
LINE**

1 DESIGN

High quality, fine detail - no ugly cast frogs. Design based on A.R.E.A. drawings and built to NMRA standards. Realistic and dependable - will serve your railroad for years!

2 CHOICE

Insulfrog or Electrofrog, and now Unifrog (for the new Double Slip) - all self-isolating, DCC friendly whichever format you choose and they work straight out the box!

3 AVAILABILITY

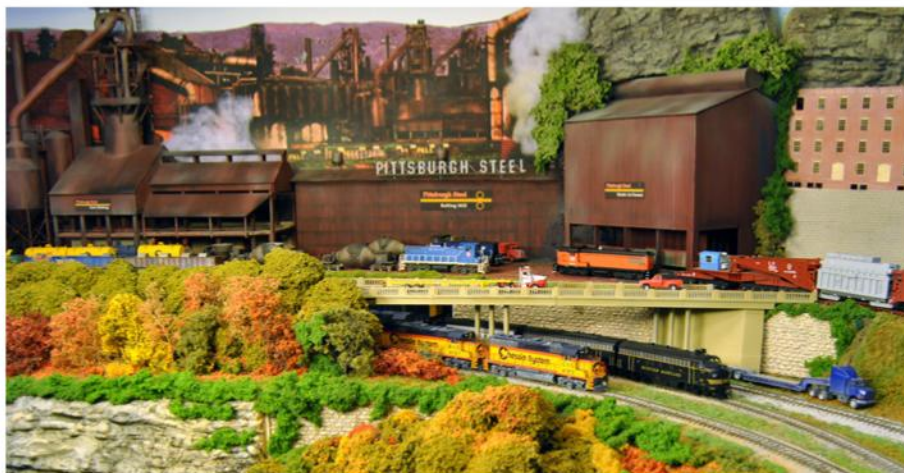
Always available, reliable supplies. Made in the UK by one of the world's most experienced track manufacturers.

4 PRICE

Great value for money - a top quality product that won't let you down, all for a fair price. Get wise, choose PECO!

#4 Wye
Turnout

Download free track templates from www.peco-uk.com



Doug Gainer's article about his layout in the June issue hit very close to home for one reader. Doug Gainer photo

Hey, that's where we go to watch trains!

I appreciated Doug Gainer's "Chessie Serves the Steel City" in the June *Model Railroader*. I live in Penn Hills, Pa., which Doug identifies as his childhood hometown, within shouting distance of the Bessemer & Lake Erie yards. My grandsons and I enjoy the chance opportunities while driving by to watch the operations of the B&LE and Union RR switchers. The pictures of the layout provide many recognizable references to the area.

Although my layout is not of the scope and breadth of Doug's, I enjoy modeling railroads with rolling stock decorated with the markings of local and regional lines, including many mentioned in Doug's article. Thank you for an enlightening, enjoyable look at familiar scenes depicted on your proto-free-lanced scale model railroad.

Richard Kruglak, Penn Hills, Pa.

Kibbitzing about kits

I was taken aback by your June editorial talking about someone not wanting to build kits and thinking they are too much effort or time.

Most of the pleasure I derive from the hobby (except for operating trains) comes from building. My East Winchester Railroad is comprised of kits. I, to this date, have only constructed two wood kits; but between Woodland Scenics DPM Landmark Structures, DPM Modular Building Systems, City Classics, and two Lund kits stands my railroad. And I am proud of how it looks.

Even my freight cars are either Athearn, Accurail, Roundhouse, or Bowser kits. Yes, I have purchased RTR freight cars from time to time.

To answer the gentleman's question of why spend hours and money on a kit; Because I built it.

Dave Wiley, Langhorne, Pa.

I read your editor's note in the June issue. I'm thankful that our hobby industry has developed avenues for all interested folks to enter into and enjoy regardless of ability and even physical, visual, and mental limitations.

I think it's important to remember there are many reasons why one may choose one particular way of constructing a model railroad and enjoying the hobby over another. It could be a special interest in one form of modeling, such as plastic structures.

I know from my own professional experience that it could be because of physical, visual, or even mental issues which limit one's ability to work on one model over another, or limit an individual's ability to construct anything at all. Yet he or she may thoroughly enjoy model railroads.

Therefore it's not at all important to ask why one may choose wood over plas-

tic kits, or pursue the art of scratchbuilding structures. Even store-bought, factory-built structures or model railroads are important for providing a way for folks to enjoy our hobby to its fullest.

*Richard Wardlaw,
Crescent City, Calif.*

Credit where it's due

I was excited to learn that the photo I submitted to Trackside Photos would be published in the July 2016 issue. The work isn't mine alone, but with my grandson Taylor Brake. Unfortunately, his name was inadvertently omitted in the photo caption. He has incredible modeling skills and attention to detail.

Dave Smith, Carmel, Ind.

Small is beautiful

In the 1990s I built my *uber* railroad. It was 12 x 24 feet, with two levels. After I married in 2005 I needed the room and tore my layout down.

In 2007 I went in an entirely different direction and I've never been happier. My current HO layout is 2'-0" x 8'-6", representing industrial switching in and around the city of Minneapolis. I operate it in three different eras: the late 1950s, the late 1970s, and modern times. The track and scenery are complete and the layout fully operational, a far cry from my big layout.

Small model railroads, if well conceived and designed, are a great way to introduce more modelers into our hobby and to encourage armchair modelers to start building.

I appreciate and respect those who have the time, space, talent and resources to complete large layouts. I wonder, though, if we are doing a disservice to modelers by implying this is what we should aspire to. Likewise, breaking away from 4 x 8-foot track plans (often glorified ovals) and exploring the operational possibilities of small shelf layouts seems a promising direction.

As more modelers face space limitations, limited funds, competing interests, and time commitments, perhaps small layouts are the way of the future for our hobby. Our brethren across the pond seem to have the jump on American modelers in this regard.

Dan Dossa, Eden Prairie, Minn.

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



Z SCALE LOCOMOTIVES / FREIGHT / PASSENGER

1:220



Original & Safety Cab Versions

SD70ACe

Heritage Versions



SD45

American Z Line



RELIABLE,
HIGHLY DETAILED,
IRRESISTIBLE.

AZL Distribution | Dublin, OH | 614-764-1703

www.americanzline.com | www.azldirect.com

ZEPHYR xtra

\$255 MSRP



All-In-One Throttle / Command Station /
Booster to run your layout!

Digitrax

Complete Train Control

**Digitrax Starter Sets
for great operation!**

View more at: www.digitrax.com

Super EMPIRE BUILDER xtra

\$355 MSRP



Super Empire Builder Xtra has everything you
need to get started in Advanced Digitrax
Command Control.

Super Chief xtra

\$455 MSRP



Maximum capacity, maximum features.
Take it to the Max with Super Chief Xtra!



Associate editor Cody Grivno captured this photo of a fairly beat-up looking end-of-train device bringing up the end of a string of Herzog ballast hoppers in Ackerville, Wis., on March 19, 2016.

What do end-of-train devices do and when were they first used?

Q I would like to know more about end-of-train devices. When were they introduced? Were they ever used with steam trains? And what information is transmitted to the engineer? I would also like to know what the significance of the body colors are; I've seen red, gray, and yellow.

John Blackburn, Birmingham, England

A End-of-train devices (also known as ETDs, EOT devices, or flashing rear end devices a.k.a. FREDs), were first used by the Florida East Coast Ry. in 1969, well into the diesel era, so they never saw service on steam-powered trains. At first these devices were simply safety

markers providing visual indication of the end of the train; even a red flag could be a primitive ETD for a transfer run or another short maneuver. Later, though, these devices became more sophisticated, being tied into the brake lines to monitor air pressure and relay this data back to the locomotive cab.

Eventually, two-way communication between the FRED and a console in the cab (colloquially called a "Wilma" in a "Flintstones"-based pun) enabled functions like GPS location and remote application of the train brakes in case of emergency. The development of the FRED both contributed to and was enabled by the demise of the caboose on American railroads.

As for the color of the FRED itself, it's likely just a matter of company policy and/or what color paint the manufacturer offered. The flashing light itself provides all the visibility required for safety.

Q I'm very new to model railroading, and have no idea where to start. I'm looking at HO scale, and will probably start with a 4 x 8 table. I want to start by buying a locomotive, but there are so many manufacturers, including Kato, Bachmann, Athearn, Walthers, and more. Is one company better than the others?

Frank Sanchez, Santa Clarita, Calif.

A These days, any of those manufacturers you list can be depended on to put out quality equipment. Your decision should probably be based instead on which railroad, and which locomotive,

catches your fancy. Though many model railroaders start out like you, not knowing where to start, as time goes on most of them settle on a favorite railroad on which to focus their modeling efforts and purchases. Start reading now and see if a particular era, locale, prototype railroad, or locomotive attracts you more than others. Then you can avoid purchasing cars, engines, and structures that won't fit in with your railroad later.

For more information about model railroading in general – including an explanation of the different scales, a glossary of terms, the basics of track and benchwork, and more – go to our Get

Started page at www.ModelRailroader.com/Beginners. There, you'll find helpful articles, videos, a downloadable booklet, and a place to sign up for our Basic TRAINing e-mail series. They'll get you started on the right – pardon the pun – track. Welcome to the world's greatest hobby, and happy railroading!

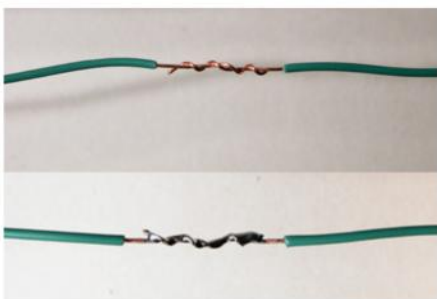
Q While running my main bus wires, I ran into a position where I came to the end of my spool and I need to continue the wiring. What is the best way to connect or splice the next section onto the first wire?

Alan Jenkins, no address given

Quick Tips videos



Looking for more model railroad-ing hints, tricks, and techniques? Check out our new video series, MR Quick Tips, in which associate editor Steven Otte breaks down how-to info into easy-to-handle 15-second chunks. Find them and other helpful videos on our Expert Tips page at MRR.trains.com/videos/Expert-Tips.



The "Western Union splice" is the best way to securely connect two electrical wires end-to-end.

A The best solution is what's called a "Western Union splice," named for the telegraph company whose linemen used it. Strip at least an inch of insulation from both pieces of wire to be spliced. Slip a piece of heat-shrink tubing (available from Radio Shack, Mouser, Micro-Mark, and most hardware stores) a good distance down one of the wires – you won't be able to do this later! Put a 90-degree bend in both pieces of wire, hook the bends together, and wrap each end around the shank of the other wire in opposite spirals. Secure the splice with solder, slide the tubing down over the splice, and hold your soldering iron near the tubing to shrink it in place.

Q On reading some background information on the Chicago, Burlington & Quincy RR before starting the Red Oak model railroad project [see the January 2015 issue –



NEW **SSMR Speed Monitor Network** with Speed Limit Software

- Train #s/MPH/Direction reported on computer
- Works alongside ANY Network
- Open source speed limit alarm software can be sent to cell phone

smithsouthwestmodelrail.com or ssmr.global
Customer Service:
Toll free: **866-496-2831**
Local and International: **214-382-0285**
Smith Southwest Model Rail®
3310 Keller Springs Road Suite 160
Carrollton, Texas 75006 USA



PRIME MOVERS BY RAPIDO **Dash 8-40CM "Draper Taper" in HO Scale**

With wife-approved pricing™
rapidotrains.com

Z-Stuff for Trains

Just connect two wires for a working signal!

www.z-stuff.net S-Scale

- LED lights HO-Scale
- Optical Sensors N-Scale



Orders:
ZstuffExpress.com **708-352-9105**
Z-Stuff for Trains 585-377-0925



Tortoise™
For 25 Years, Simply...
The BEST!
Slow Motion Switch Machine

MADE IN THE USA **800-6000 \$21.95**
6006 6-PACK \$126.00
6012 12-PACK \$245.00

- Enclosed Gear Drive Mechanism (NOT a Screw-Drive Machine!)
- Simple Mounting - All Linkage Included!
- 2 Sets SPDT Auxiliary Contacts

AT YOUR LOCAL HOBBY SHOP OR DIRECT
INCLUDE \$8.00 FOR SHIPPING & HANDLING
Send SSAE for more info or \$8.00 for complete 60 page Catalog & Application Book to:
CIRCUITRON
211 RocBaar Dr., Romeoville, IL 60446-1163

Micro Engineering Flex-Trak™ New Molds in Production

New molds have been completed for the following sizes of Micro Engineering Flex-Trak.

HO Code 100

HO Code 83

HO Code 70

HO Code 55

HO-HOn3 Code 70 Dual

HO-HOn3 Code 55 Dual

HOn3 Code 70 (last year)

HOn3 Code 55 (last year)

We have also improved the **On30 Code 83 & 70 Flex-Trak** with slightly larger spikes for better holding strength. New tooling has improved the fit of our **Code 83 & 70 Rail Joiners** which easily slide on the rail.

All sizes are in stock!

Micro Engineering Flex-Trak is made in the USA

ME Micro Engineering Company

1120 Eagle Road
Fenton, MO 63026
Phone 800-462-6975
Fax 636-349-1180

www.microengineering.com
service@microengineering.com

Reader Tip

As our vision worsens with age, we need more light to perform delicate tasks like reaching between freight cars to uncouple them. A short-ened bamboo skewer attached to a small LED flashlight with zip ties provides the light I need while keeping one hand free to maintain the slack necessary for uncoupling. Extra visibility helps to minimize damage to delicate car-end details like crossover platforms, air hoses, and cut levers. This handy tool can also be used to illuminate the trucks of a derailed car, read weathered car reporting marks, or read car cards and waybills during "night" operations.

Murray Bouschlicher, Iowa City, Iowa



Ed.], I came across a photograph of trains 12 and 7 (westbound mail) crossing at Red Oak. (Page 64 of Burlington Route Across the Heartland by Jeff Wilson, published by Kalmbach). The mail train has a caboose on the rear. Was it common for mail trains, even if composed primarily of "passenger" type cars, to have a caboose?

Malcolm Gauld, Aberdeen, Scotland

A Though it wasn't unheard of, the practice was by no means common. A caboose might be tacked onto a mail and express train if the train had no passenger cars (a mail-only train), or if the railroad didn't want to take a passenger car out of revenue service for use as a "rider car" (the more common practice).

Q When I was a boy (and ice and snow covered the earth), I purchased my first copy of *Model Railroader*. That issue had a wonderful article of a layout that was called the Ma & Pa. I believe it was a 5 x 10-foot layout. Alas at the time as a boy in the 1960s, I had neither the space nor the financing to build this layout. Now in the autumn of my life, those are no longer problems. Unfortunately, I can't seem to locate the track plan and articles associated with that layout. Could you please help me?

Roberto Lopez, Dublin, Calif.

A The freelanced Ma & Pa, or Manchester & Paradise, was a multi-part layout project that started in our December 1964 issue. It was touted

as "The model railroad with a future" because the series started with a simple tabletop oval with sidings, and added more track, scenery, and details as the series progressed. You can read these articles – and hundreds more – by subscribing to our All-Access Archive, at www.ModelRailroader.com/AllAccess.

Q I'm going to install a Bachmann uncoupling magnet under a section of Bachmann E-Z Track, which has a plastic roadbed. Will the magnet work through the plastic? I read that it will work through regular ballast.

Ray Malone Sr., Mobile, Ala.

A The plastic won't block the magnetism; the question is whether the plastic roadbed's thickness will put the magnet too far below track level. Bachmann makes an E-Z Mate uncoupling magnet specifically for use on this track, so it should work. But if you're worried, test the combination at the workbench before installing it on your layout.

Q I'm trying to find 3M transfer tape [see our August 2015 issue – Ed.], but can only find it online by the case. I would like to buy one roll to use to put shingles on my roof. I've tried all the resources in my area, including Wal-Mart, Hobby Lobby, Michaels, Office Depot, and Target, but no one carries this item. Hope you can help.

David Karlson, Dahlgonega, Ga.

A If you're only looking for a small amount of tape, you might find an alternative product in the scrapbooking

section of a craft store. It's called mono adhesive, and it's basically the same type of product as 3M's, except it comes in a lozenge-shaped plastic dispenser. You open the cover and roll it onto the surface, and the carrier tape is spooled up back into the dispenser. It's neat and easy, though you need a steady hand to apply the adhesive evenly. Give it a try.

Q Do plate-girder bridges have the home road name or logo painted on one side of the bridge or both?

John Streppone, Woodhaven, N.Y.

A That depended on the practice of the individual railroad. Since the point of the name or logo was to advertise the railroad, bridges in obscure locations might have no identifying marks at all. Likewise, bridges that are either severely rusted or recently repainted might have no legible markings. Bridges that spanned roadways were far more likely to carry a herald or road name on both sides. But other bridges might be labeled only on one side, if the other would not be easily observed. You can do what you like with your bridges, since as they say, there's a prototype for everything.

Q I have several Walthers passenger cars that kept derailing. I was told to make sure the cars were lubricated. I did that and most of the problems went away. However, a couple of the cars continue to derail. The wheels fit in my NMRA gauge fine. I operate on 28" radius curves. What's wrong?

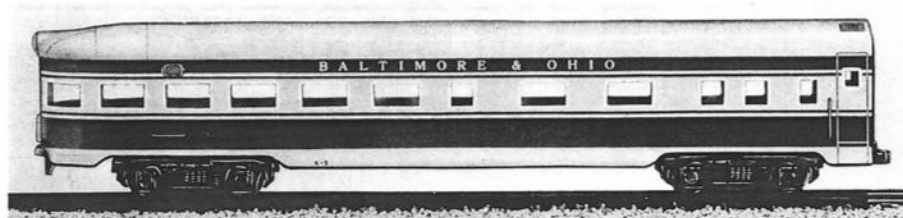
Don Fulton, no address given

A If all the wheels are in gauge, the next step is to make the same check on your track. If the cars tend to derail in the same few spots every time, the track in that area may be suspect. Also check the height of your coupler trip pins to make sure they aren't snagging on grade crossings or turnout frogs.

Finally, make sure the trucks can pivot freely. Low-hanging details like stirrup steps or brake gear might be interfering with them. And make sure their screws aren't too tight. One truck on each car should be able to wobble slightly so the car can track uneven rails.

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

Keeping pace with streamliners



This Varney observation car kit had one-piece stamped-metal roof and sides, which were striped and lettered. The kits included trucks and dummy couplers.

After World War II, railroads found themselves with tired, war-weary passenger equipment, some recalled from retirement to meet heavy traffic demands. Some prewar trains continued with streamlined rolling stock, while others relied on dated standard heavyweights.

Steam locomotives were quickly being replaced with sleek, colorful streamlined diesels hauling equally sleek streamlined equipment. Some railroads had stylish new dome cars, expected to lure riders to travel by rail in the fast-growing postwar economy. Flying for business or pleasure travel wasn't yet a serious consideration and was more costly for a family.

A 1953 HO-only catalog from American Model Railroad Equipment Corp. shows how quickly hobby manufacturers picked up on the trends with modern, up-to-date equipment. In 1953, one could buy streamlined passenger kits from American Model Toys (AMT), American Railroad Models, Blue Lines, Chester, Kasiner, Rail Chief, Sampson, and Varney.

Construction techniques and materials varied, along with what was included in kits. Only American Railroad Models, AMT, Rail Chief, and Varney supplied trucks with their kits.

American Railroad Models' cars had wood floors, ends, and roofs that supported painted and lettered stamped-metal sides. The kits included full diaphragms, trucks, and dummy couplers.

American Model Toys' kits had bodies with extruded aluminum sides and metal castings for ends. The models had dummy couplers mounted on Commonwealth streamline-style trucks, plus two integral light bulb sockets for interior illumination. American Model Toys was the only company with that option.

Rail Chief's wood floors carried one-piece extruded aluminum corrugated

bodies, metal ends, full diaphragms, and dummy couplers. The kits included trucks, but not underbody details.

Varney's models had one-piece stamped-metal sides and roofs that were striped and lettered. There were no diaphragms, but dummy couplers and Commonwealth streamlined trucks were included.

Blue Line cars had similar construction with one-piece formed, striped, and lettered stamped-metal bodies. Details were metal and plastic, but couplers weren't included. Trucks were optional.

Chester's kits had punched unpainted corrugated aluminum stamped sides. These were attached to wood bodies that accepted full diaphragms, plus plastic and wood details.

Kasiner's kits had wood floors with sheet metal or cast ends and one-piece extruded aluminum punched, painted, and lettered corrugated bodies. The kits included full diaphragms and dummy couplers.

Sampson's models had one-piece punched and extruded magnesium alloy bodies with plastic ends and wood floors. Cast-metal details, full diaphragms, and dummy couplers were included.

Various techniques were required to assemble the variety of materials in the kits. Many needed extra-cost additions: sealer, paint, decals, diaphragms, trucks, couplers, and other details, which added to their cost. Kits ranged from \$2 to


\$6.95; AMT's were the most costly. None were sold with interiors.

They were more complex to finish than today's simple out-of-the-box, ready-to-run choices. But then, this was an era when modelers expected to build rolling stock from kits or scratch. Ready-to-run models smacked of tinplate.

While we pretended to be scale modelers, compromises had to be made if streamlined passenger trains were to operate on home layouts with tight curves. That created the need for the truncated 60-foot "Shorty" passenger car, reluctantly accepted by hobby press reviewers and modelers alike. Consists could be assembled from baggage-mail, combines, coaches, day-nite coaches, roomettes, diners, and observation cars.

A 4 x 8-foot home layout couldn't hope to accommodate a complete consist of "Shorty" types, nor could many scale clubs handle standard-length cars. Many finished car models remained empty of both lights and interiors, which I saw on two 1950s- to 1960s-era West Island Montreal HO layouts I participated in as part of a small club in the 1980s.

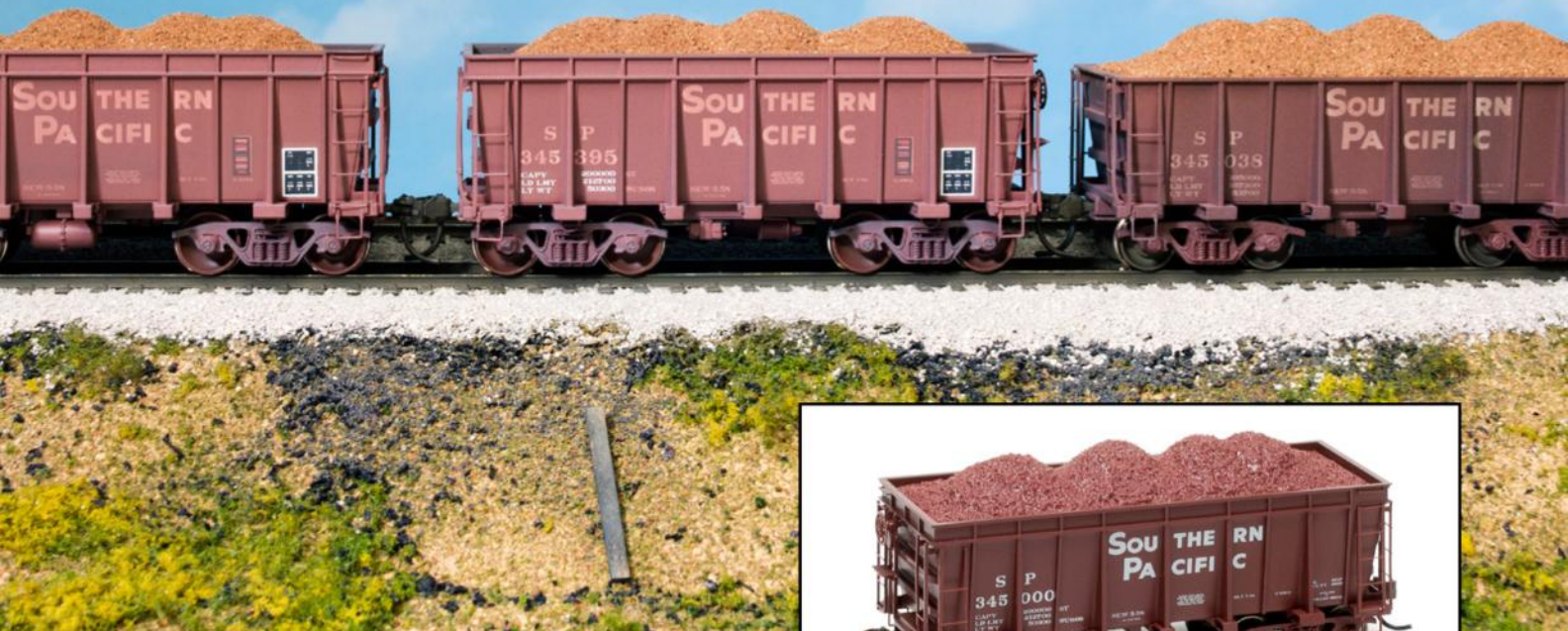
Only Kasiner, Rail Chief, and Sampson made "Shortys," full-length prototypes, and dome cars, which were desirable on any modern layout. Two companies, AMT and Kasiner, also sold on the O gauge tinplate market, which explains the somewhat different appearances of AMT's cars. They were essentially reductions from its larger versions.

Kits of this type and with these materials are long gone and are now collectibles. They're representative of the nostalgia for an era, and of what once was the most desirable modern passenger equipment for a hobbyist to run. How many of these early postwar kits still exist and are proudly run today? 



American Railroad Models included full diaphragms in its kits. The floors, ends and roof were wood, and the sides were painted and lettered stamped-metal.

How to renumber and weather ore cars



With decals and some airbrush weathering, Cody Grivno made stock Athearn HO scale 26-foot gondolas (inset) look like well-traveled ore haulers. Bill Zuback photos

One of my tasks for the Eagle Mountain RR project layout was finding equipment. I noticed scores of Southern Pacific class G-100-1 26-foot gondolas in the prototype photos associate editor Eric White found. I found a baker's dozen worth of the cars and set out to make them look like hard-working California ore haulers.

I worked on the cars in assembly-line fashion, dividing them into groups based

on body style. I worked on the low-side (circa 1958) cars first. Our layout is set between the late 1960s and early 1970s, so these cars would have been in service for a decade. I applied heavier weathering coats to those cars.

The cars with the 12" extensions would have been in service for just a few years by the late 1960s, so these cars look a bit cleaner. Since I purchased these cars individually, I had to renumber a few.

This gave me the opportunity to add some period-appropriate decals.

One word of caution with the Athearn gondolas. The ladders are delicate and pop off easily. Handle the cars with care.

If you have some gondolas or hoppers to weather for your model railroad, give these techniques a try. You may need to substitute a color or two based on the setting of your railroad, but the results should look just as good.

Step 1 Decals and weathering

We had three gondolas numbered 345000. On a small layout like this, cars with the same number would be hard to hide. Fortunately, all of the Southern Pacific class G-100-1 gondolas were in the 345000 series, so I only had to replace the last three digits.

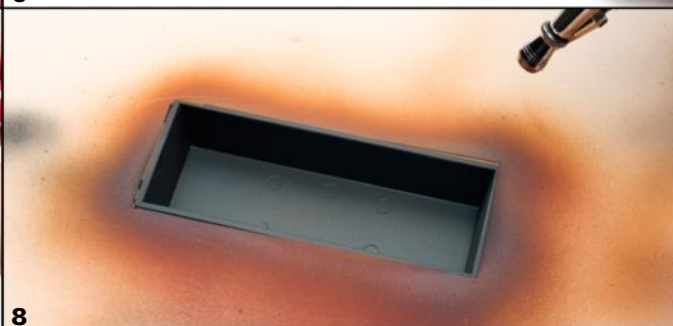
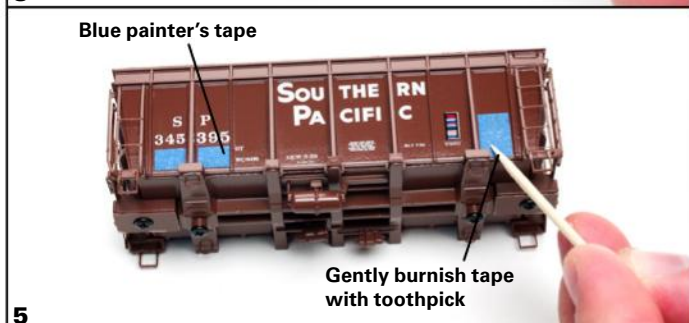
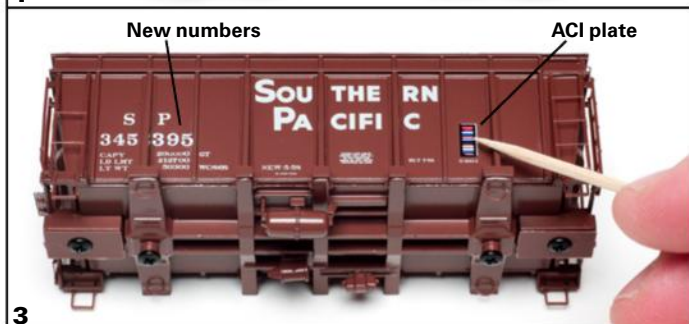
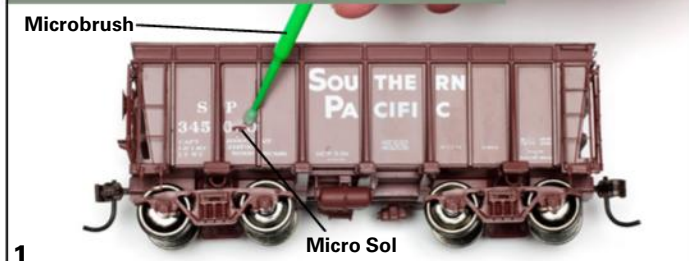
To remove the factory lettering, I covered the last three digits in Microscale Micro Sol. After a few minutes, the numbers began to soften and I was able to gently scrub them off with a Microbrush (1).

With the zeros removed from the side and end road numbers, I gently wiped the model with a cotton swab dipped in 70 percent isopropyl alcohol. This removed any impurities that would affect paint adhesion.

Then I sprayed the model with Model Master no. 4638 clear gloss. This provides a smooth, shiny surface for decals (2).

I let the clear gloss dry until there was no discernible odor before applying the decals. First, I used Microscale set 87-194 (Southern Pacific 26-foot ore cars) to put new numbers on the sides and ends. The decal numbers are a bit larger than factory printing, but the difference isn't too objectionable.

On the cars modified with 12" side and end extensions, I added Automatic Car Identification (ACI) plates from Microscale set MC-4280. The plates were applied between 1967 and 1977, appropriate for our layout's era (3).

Step 1 Decals and weathering (Cont'd)

Once all of the decals were in place, I sprayed the car with another coat of clear gloss. This seals the decals and prevents the thinned weathering colors from wicking under the decal film (4).

When studying prototype photos of SP class G-100-1 gondolas, I noticed the capacity, load limit, and light weight information had been updated on some of the cars and consolidated panels were added in the early 1970s. I re-created this look on a few gondolas.

First, I applied blue painter's tape over the data under the reporting marks and road number. I burnished the tape with a toothpick to prevent the weathering colors from wicking along the edges. I also covered the panel where the consolidated panel would be applied (5).

I weathered the sides and ends of the car with thinned (1 part paint, 9 parts 70 percent isopropyl alcohol) Model

Master Oxide Red (no. 4882) and Grimy Black (no. 4887). Since I'd be adding more decals to the car, I sealed the weathering with a coat of clear gloss.

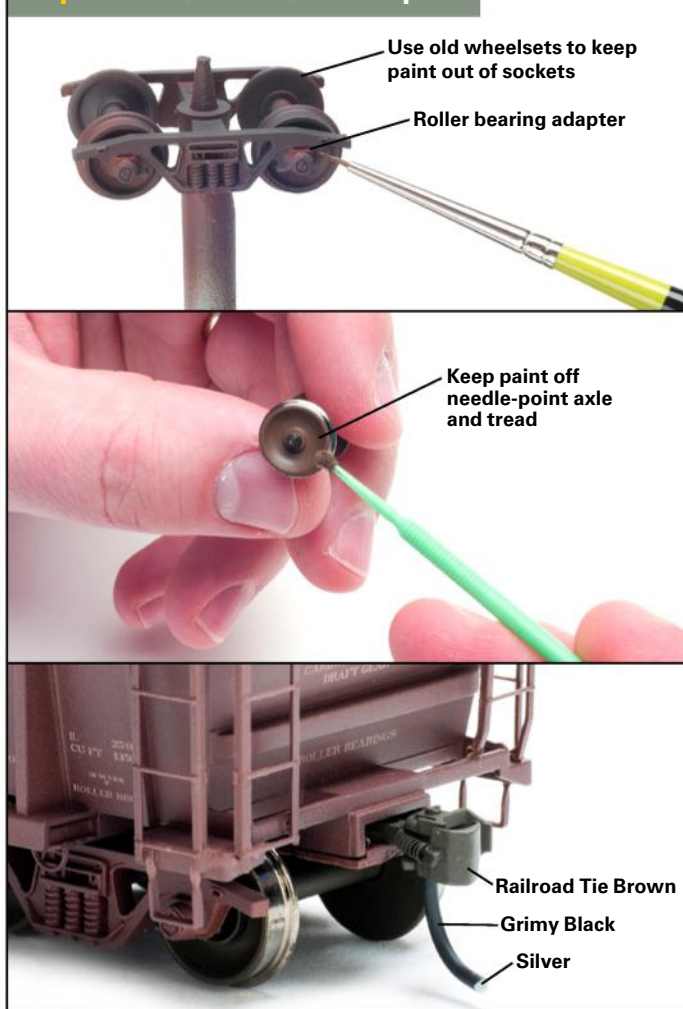
I removed the masking tape and applied the consolidated panel decal from Microscale set MC-5003 (6).

With the decaling complete, I sprayed the sides and ends of the car with Model Master clear flat (no. 4636). This gave the model a uniform, flat finish. As you can see, the white car capacity data and clean consolidated panel really stand out on the weathered car sides (7).

Finally, I turned my attention to the car's interior. Since I was weathering several cars, I cut a masking template from a manila file folder. Then I sprayed the interior full-strength Grimy Black. I followed that with thinned coats of Oxide Red, Rust (no. 4675), and Railroad Tie Brown (no. 4885) (8).

STEPBYSTEP

Step 2 Trucks, wheels, and couplers



The trucks on the gondolas are made of acetal plastic. Unfortunately, hobby paint doesn't stick well to that type of plastic. To remedy this, I sprayed the trucks with two light coats of Specialty Performance Products Plastic Adhesion Promoter no. SXA 1050 applied five minutes apart. [Use this in a well-ventilated area, wear personal protective gear, and follow all warning information printed on the can. – Ed.]

Ten minutes after the second coat was applied, I sprayed the trucks with thinned Grimy Black and Oxide Red. Then I used an 18/0 brush to paint the roller bearing adapters full-strength Oxide Red, as shown in the top photo.

Next, I cleaned the wheelsets with 70 percent isopropyl alcohol and a cotton swab to remove any impurities from the manufacturing process. I used a Microbrush to paint the wheelsets Railroad Tie Brown. I was careful to keep the paint off the wheel treads and the needle-point axle. Paint on the tip of the axle can impair the car's ability to roll freely.

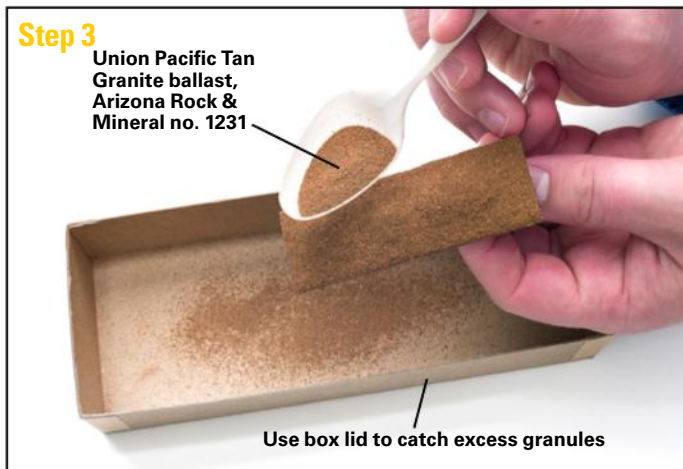
I painted the couplers in a three-step process. First, I used an airbrush to spray the couplers Railroad Tie Brown. I set the air compressor to 30 psi and held the airbrush away from the couplers so the paint was almost dry when it hit the surface. This prevents the paint from gumming up the knuckle spring, and it gives the coupler a realistic, gritty texture. If you want the coupler to look like it's newer, use a rusty orange color instead of Railroad Tie Brown.

Then I used a Microbrush to paint the trip pin Grimy Black. This captures the look of a faded air hose. Engine Black can be used to suggest a new air hose.

Finally, I touched the tip of the trip pin with a silver paint marker. This simulates a glad hand.

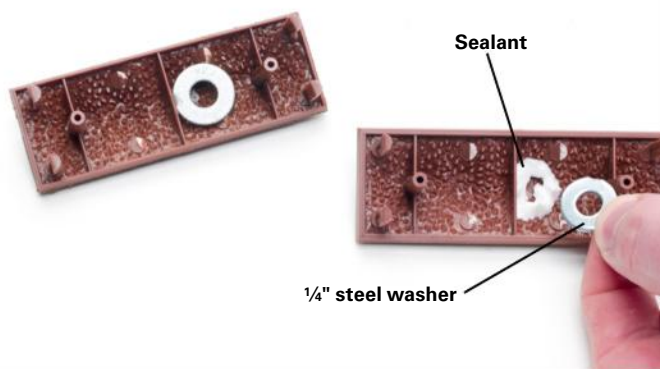
Step 3

Union Pacific Tan Granite ballast, Arizona Rock & Mineral no. 1231



Athearn's 26-foot gondolas include a removable plastic load. While the color looks appropriate for ore and the heaps look realistic, the shiny plastic doesn't.

I fixed this by coating the loads with thinned white glue (a 50:50 mix with water). Then I sprinkled Arizona Rock & Mineral Union Pacific Tan Granite Ballast (no. 1231) into the wet glue.



Once the load was covered, I wet the granules with 70 percent isopropyl alcohol. This broke the surface tension and helped the glue soak into the granules.

To make the loads easier to remove, I secured a 1/4" steel washer to the bottom with acrylic sealant. Now we can use a magnet to lift the loads out of the car, eliminating the need to pick the cars up off the layout. **MR**



**Buy Tickets Online Now
and Save Money!**
www.TrainShow.com

FOR INFO OR TO EXHIBIT AT A SHOW CONTACT:
280 Carlton Drive, Carol Stream, IL 60188
(630)-290-1962 · Info@TrainShow.com

	<p>July 23-24 Belleville, IL Belle-Clair Fairgrounds</p> <p>July 30-31 Pomona, CA Fairplex</p>		<p>July 16-17 • Monroeville, PA Monroeville Convention Center</p> <p>August 6-7 • Timonium, MD Maryland State Fairgrounds</p> <p>August 13-14 • Edison, NJ New Jersey Expo Center</p> <p>August 27-28 • Chantilly, VA Dulles Expo Center</p>				
	<p>DuPage County Fairgrounds 9am-3pm County Farm & Manchester, Wheaton, IL 60187 Largest Monthly Train Show in the US</p> <table border="1" style="margin: auto;"> <tr> <td>Aug 14</td> <td>Sep 11</td> <td>Oct 9</td> <td>Nov 13</td> </tr> </table>	Aug 14	Sep 11	Oct 9	Nov 13	<p>VISIT TRAINSHOW.COM FOR THE LATEST TRAIN SHOW DATES</p> <p>HAVE TRAINS TO SELL? CALL 630-290-1962</p>	
Aug 14	Sep 11	Oct 9	Nov 13				

microAIRWIRE® Wireless Battery Operation For HO

From the acknowledged experts in wireless, battery powered model railroading, comes a new series of AIRWIRE decoders small enough for HO scale. Imagine no layout wiring, no reverse loop nightmares, and no track or wheel cleaning. The first two members of the *microAIRWIRE* series offer slim designs suitable for narrow hood diesels. Use our award winning T5000 Wireless Throttle for operating or programming the microAirWire Booster or Motion Decoder - it can program any DCC configuration variable (CV). Plenty of expansion with 17 unique frequencies and 9999 addresses per frequency. Expect long running times with high capacity lithium batteries. Higher amperage versions coming soon!

μAW M15 - 1.5 Amp Motion Decoder

- ☒ 1.5 Amp Fully Protected Motor Driver
- ☒ 10V to 18V Battery Range
- ☒ Precision Motor Control with Cruise
- ☒ FWD/REV Headlights with Special Effects
- ☒ 4 LED Drivers with Special Effects
- ☒ Easy Programming with AIRWIRE Throttle

Only 0.6 x 2.4 x 0.25 inches



Download user manuals and information brochure
from the CVP website - www.cvpusa.com

μAW B15 - 1.5 Amp DCC Booster

- ☒ For TCS-WOW & Soundtrax HO Decoders
- ☒ 1.5A Continuous, 5A Peak, Fully Protected
- ☒ Stuck Horn Protection
- ☒ AIRWIRE Throttle Programs Decoders
- ☒ 10V to 18V Battery Range
- ☒ Easy and Simple To Setup And Use

CVP Products POB 835772 Richardson, Tx 75083 www.cvpusa.com



IN STORES NOW!



K4s

- HO SCALE
- DIE CAST METAL
- SOUND/DC/DCC
- AVAILABLE IN 9 #'s
- ORDER NOW**



WWW.BROADWAY-LIMITED.COM

1. The in-plant switcher pulls a cut of hot-metal cars from the basic oxygen furnace past empty slag cars sitting next to the blast furnace. The steel industry is the focus of the latest phase of Rick Crumrine's HO scale Waynesburg & Washington RR.



MAKING ALONG A PENNSY

Heavy industry doubles the size of the HO Waynesburg & Washington RR



STEEL BRANCH LINE

By Rick Crumrine • Photos by Lou Sassi



2. A Pennsylvania RR F7 diesel-electric locomotive noses past the crossing in downtown Canonsburg, Pa. Rick kitbashed or scratchbuilt most of the town's buildings.

My Pennsylvania RR-inspired Waynesburg & Washington RR started as a 17 x 18-foot HO scale layout set in the rolling rural landscape of southwestern Pennsylvania. Two of my distant relatives served on a committee that determined the railroad's route. While the prototype W&W was a narrow gauge line that ceased operations by the 1940s, my version survived into the 1950s as a standard gauge Pennsylvania RR branch line. [See "The way it might have been" on page 58 of *Great Model Railroads 2003*. The story is available as a free download at www.ModelRailroader.com. – Ed.]

Thanks to my wife, I acquired more trackage rights in our basement a few years after the GMR story was published. I wanted to use this new section to generate more freight traffic and provide more switching opportunities. I would use the new space to run the line north from the old terminus of Washington, Pa., to Canonsburg. Just south of Pittsburgh, Canonsburg was along the Pennsylvania RR Chartiers Branch.

The focus of the new Chartiers Branch/Canonsburg section of the layout is the steel industry. The freight traffic generated by this industry would provide a lot of operating opportunities for my W&W. Complete with a sprawling new steel mill complex, my layout now fills



3. Including the electric furnace on the left, most of the large structures on the layout are related to the steel industry. The cutouts in the fascia under Canonsburg (right) allow access to the Ohio staging yard.

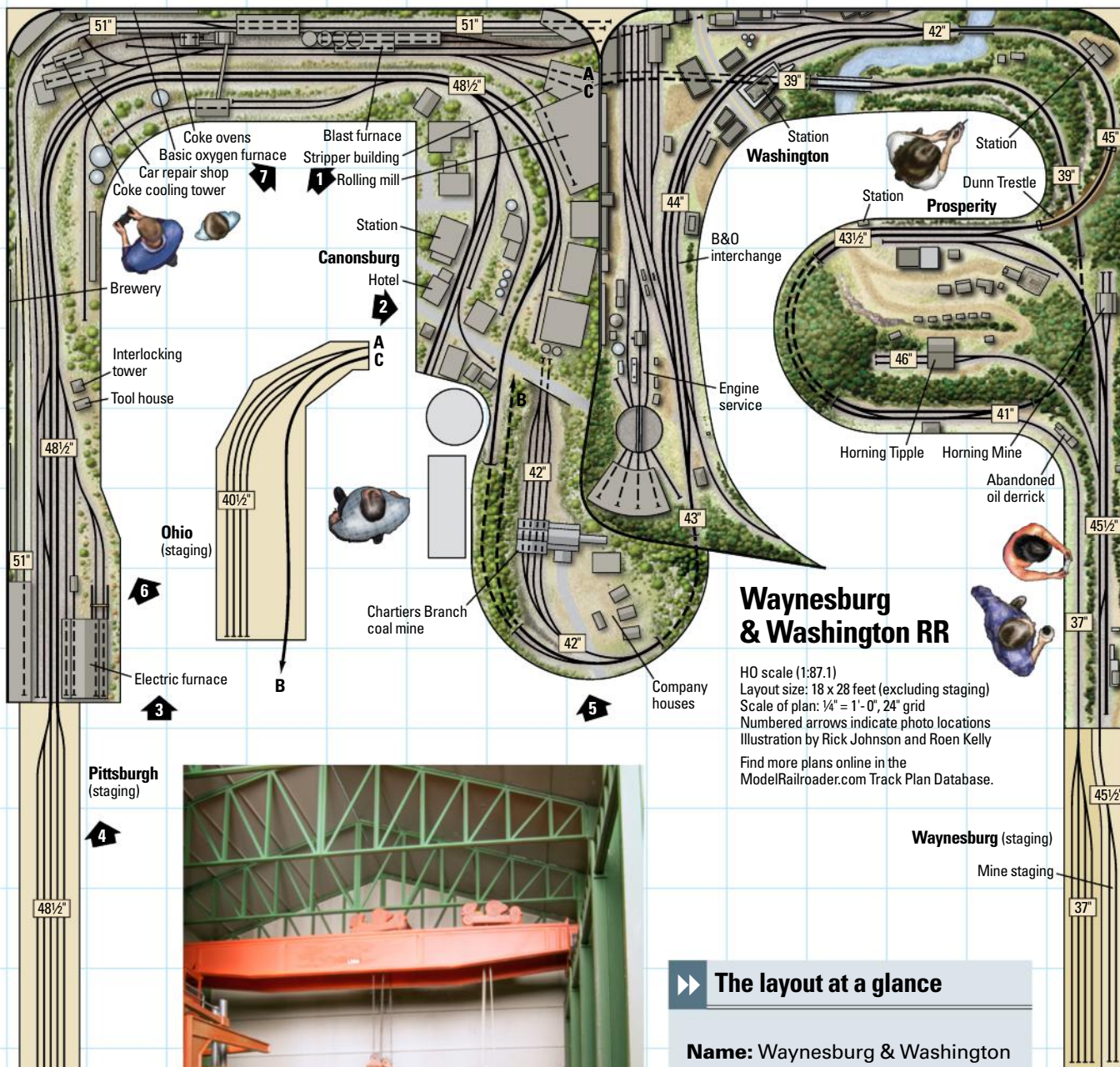
an 18 x 28-foot space, not including the three staging yards.

Planning and construction

Although I'd been inside a steel mill before, there was a lot about the industry I didn't know. Before I could start building Canonsburg, I had to do some homework. *The Modeler's Guide to Steel Mills* by Bernard Kempinski (Kalmbach

Publishing) and *The History, Making, and Modeling of Steel* by Dean Freytag (National Model Railroad Association) proved especially helpful. I also attended some of Dean's clinics at NMRA conventions and was fortunate to visit Dean's home and see his magnificent HO scale steel mill before he passed away.

With a better knowledge of the steel industry, I was ready to plan and build



4. Gondolas full of scrap metal wait on the unloading tracks at the electric furnace, while an overhead crane carries ladles of molten steel to fill ingot molds. Rick built the structure from a Walthers kit and detailed the interior.

The layout at a glance

Name: Waynesburg & Washington
Scale: HO (1:87.1)
Size: 18 x 28 feet
Prototype: Pennsylvania RR
Locale: southwest Pennsylvania
Era: 1956
Mainline run: 89 feet
Minimum radius: 18"
Minimum turnout: no 6 (no. 4 in some yards)
Maximum grade: 2.5 percent
Benchwork: L-girder and extruded-foam insulation board
Height: 39" to 47"
Roadbed: Homasote splines, extruded-foam insulation board
Track: code 83 handlaid and flex
Scenery: plaster over wire screen
Backdrop: Scenes cut out and pasted to 1/8" hardboard
Control: Digitrax DCC



5. Much of the coal traffic for the Hurst Steel coke works comes from the mine along the Chartiers Branch. The Pennsy GP9 leads its coal train through one of the many handlaid turnouts on the layout.

my layout. Originally the main line left the scenicked layout at the engine terminal in Washington and entered Pittsburgh staging under the basement stairs. I converted that area into the scenicked Chartiers Branch Mining Co.

Pittsburgh staging, as well as Waynesburg staging, are now located at each end of the main line, as you can see in the plan on the previous page.

After the Chartiers Branch, the line continues through Canonsburg, and Ohio staging sits directly below the town. Since I needed full access to the staging tracks, the L-girder and plywood benchwork I used on the rest of the layout wouldn't work for Canonsburg. Instead I built the town on a base of 2"-thick extruded-foam insulation board, which is lightweight, strong, and requires minimal support. Openings in

the fascia provide easy access to all the Ohio staging tracks.

Most of the large industries spread out along this section of the layout, including the blast furnace, rolling mill, and electric furnace, are part of the Hurst Steel complex. Hurst is my wife's maiden name. After all, I had to acquire the right-of-way for the layout from her!

Most of the steel mill, as well as other structures in Canonsburg and the Chartiers Branch, are kitbashed or scratchbuilt. I used many kits from Walther's recent steel mill series.

Roadbed, track, and wiring

As on the rest of my layout, I used Homasote spline roadbed for most of the main line through the Chartiers Branch and Canonsburg. This technique involves laminating strips of Homasote,

then laying the resulting roadbed on edge, bending it to the route of the main line, and securing it in place. I described my method in the GMR article. The resulting roadbed offers a smooth easement into curves, doesn't warp, and takes track spikes well.

For the staging and large, flat yards on the scenicked part of the layout, I used $\frac{5}{8}$ " plywood topped with $\frac{1}{2}$ " Homasote. For the town scene above Ohio staging, I laid the track directly on the foam board.

On the first phase of the W&W, I handlaid all the track. For the new section, I used flextrack but still handlaid all the turnouts. It seems that wherever I need to lay a turnout there's a curve involved. I find that ready-built turnouts aren't flexible enough, so they tend to dictate the track plan. By building a



turnout in place I can incorporate whatever curve I need and get a much smoother track flow.

I can build two turnouts in an evening at a cost of about \$4 apiece. When I need rail for a turnout, I simply strip the ties off a piece of code 83 flextrack. I build all the turnouts in place after first installing wood ties. I sand the ties smooth, then start laying rails.

The only place I didn't use scratch-built turnouts was in the town scene over Ohio staging. I found it easier to install ready-built turnouts on top of the foam board. Almost all turnouts use manual ground throws.

Running trains

I've wired the entire layout for Digital Command Control (DCC) using a Digitrax system. It's reliable and allows my train crews to easily follow their trains during operating sessions.

Operating signals on the W&W



6. The Pennsylvania RR used position-light signals that mimicked the position of a semaphore blade. Since a passenger train occupies the track on the left, the signal above it indicates "stop." The three vertical lights above the adjacent track show a clear signal.

All the signals on my layout are from Oregon Rail Supply (www.oregonrail.com). The firm sells complete kits, as well as parts, for accurate Pennsylvania RR position-light signals. In this type of signal, rows of yellow lights mimic the position of a semaphore arm to indicate the signal's aspect.

The Oregon kits include a special diode logic board to run the signals. However, I found it easier and cheaper to purchase the signal targets without the board. It's a bit more work to wire the LEDs without the circuit board, but I found that when building 30 signals, the cost savings really add up.

I use Signals By Spreadsheet products (www.signalsbyspreadsheet.com) to control the signals. This system uses software and a signal driver board (DIO) connected to the LocoNet of my Digitrax DCC system via a RR-Cirkits LocoBuffer USB interface. A Digitrax BDL168 LocoNet Occupancy Detector monitors 16 occupancy blocks on my layout and sends out 5 volts whenever a train is detected in one of the blocks. The DIO board then senses the 5 volts and changes the signal's aspect to the proper position.

The Signals By Spreadsheet system saved me a lot of time and minimized wiring. Programming the software is also straightforward. On my layout, I set the signals to show "stop" if a train is in the next block, "approach" if a train is two blocks ahead, and "clear" if two consecutive blocks are unoccupied. Digital Command Control and the products currently available have made it easier for me to have working signals on my model railroad. — R.C.

Most of my steam and diesel locomotive have DCC sound decoders. However, I've installed kill switches at all the staging tracks. I find it too noisy with all the locomotives in staging idling away.

My favorite part of the layout is the operating position-light signals. [See "Operating signals on the W&W" above. — Ed.] These Pennsy-style signals feature round targets with three lights that

change aspects to mimic the arm of a semaphore signal. I think these signals add a lot to the realism of the layout.

A typical operating session on the W&W lasts about three hours. There is enough work to keep four operators busy. I usually act as the dispatcher and answer any questions. Seeing the railroad operate as envisioned is an enjoyable part of the hobby for me.



7. It's a busy day at Canonsburg, Pa., as Pennsylvania RR no. 9250 pulls a cut of empty ingot molds from the steel mill's stripper building. Running the in-plant switcher is one of the busiest jobs on the layout.

For car movements, we use train orders and car cards. My train order forms are copies of an actual Pennsylvania RR Form 19. Traffic sometimes occurs where we didn't expect it, but that's railroading! Watching the trains pass and solving the same problems that real railroaders do is a lot of fun.

Supporting steel

The Hurst steel mill, industries in Canonsburg, and the Chartiers Branch coal mine keep two operators busy for an operating session. Much of this traffic involves unit trains full of the material essential to the steel-making process.



▶▶ Meet Rick Crumrine

Rick Crumrine has been a model railroader since age 5, when he received his father's American Flyer S gauge trains. Rick is on the board of directors for Division 7 of the National Model Railroad Association and is show chairman for the division's Fall Train Show. He lives in Cincinnati, Ohio, with his wife, Linda.

Great Lakes iron ore comes out of Ohio staging. Modeling prototype PRR practice, this traffic is represented by unit trains of hoppers filled a third of the way with ore. The train crew backs the ore train behind the electric furnace. The locomotive then picks up empties from the high line and heads back to Ohio.

All lime traffic comes from Pittsburgh staging. Like the ore train, the lime train crew swaps loads for empties on the high line.

Coke is produced in-house by Hurst Steel coke ovens. The coke cars are all staged off-layout at Pittsburgh staging. The leased in-plant switcher, usually a PRR Electro-Motive Division NW2, picks up loads and switches out empties.

The coke ovens require a steady supply of coal. The coal trains on the W&W come from two mines, either the Chartiers Branch mine or the Horning Mine at the far end of the layout on the way to Waynesburg staging.

Local freights bring in other raw material. Each day the electric furnace receives six gondolas full of scrap metal. Since this furnace also produces stainless steel, the locals deliver covered hoppers full of chromium. The in-plant switcher will then spot each hopper at the unloading shed.

Steel mill switching

Operating the Hurst Steel in-plant switcher is one of the busiest jobs on the railroad. The switcher picks up football-shaped hot-metal cars from the blast furnace and spots them at the open-hearth furnaces on the high line. One open hearth is at the far west end of the line and the other is near the mid-point at the bridge. There must be a spacer car

between the hot-metal car and the switcher to protect the train crews.

The switcher must also rotate slag cars. Slag is a mineral by-product of steel making, and molten slag is collected into special ladle cars. I haven't modeled the slag dumpsite, so during operating sessions, the crews run the slag cars to Pittsburgh staging.

One of the products Hurst Steel ships is coil steel. This means the switcher must pull empty ingot buggies from the stripper building and deliver them to the electric furnace. The switcher then picks up flatcars of full ingot molds and heads back to the stripper building, where the ingots are "stripped" from the molds and prepared for the rolling mill. A spacer car is also required when hauling ingots.

At the rolling mill, the ingots get rolled into thin sheets that are wound into steel coils and placed into gondolas. The switcher will pick up the loaded coil steel gondolas and spot them on the outbound track behind the electric furnace. One of the locals will then pick up the gondolas en route back to staging.

Locals also pick up and set out freight from other industries in Washington and Canonsburg. Additional trains come out of Waynesburg staging with loads destined for both towns.

We also model passenger service. A gas-electric "doodlebug" motorcar stops at every station between Waynesburg and Canonsburg. A passenger train runs from Ohio staging to Pittsburgh staging, making stops at Canonsburg and Washington. Later in the day, the train runs in the opposite direction.

On to the next phase!

Our round-robin group has been happy with the enhanced operations. This layout wouldn't be possible without the help of my friends Neal Horning, Jack Laubisch, and Tom Brueggeman.

I think of my layout as being built in phases. The article in GMR 2003 highlighted phase 1, and this article describes phase 2. By the time you are reading this, I hope to be well on my way with phase 3. This hobby keeps getting better and better! **MR**

Now on ModelRailroader.com

Visit the MR homepage to download a copy of Rick's 2003 GMR story as well as a computer desktop wallpaper image of the photo on page 26. Subscribers have the added bonus of an exclusive layout video.

ONE STOP SHOP



We Supply the World

AMERICA'S LARGEST
INTERNATIONAL MAIL ORDER
DISCOUNT TRAIN STORE

N, HO, O, ON30, S & G

SHOP ON-LINE 24/7

FOR YOUR FAVORITE PRODUCTS:

ATHEARN • ATLAS • BACHMANN • BROADWAY LTD. • DIGITRAX
INTERMOUNTAIN • KADEE • KATO • LGB • LIONEL • MAINLINE
MANTUA • MICROTRAINS • MODEL POWER • MRC • MTH • NCE
PECO • PIKO • PROTO • RAPIDO • SOUND TRAXX • TCS • TRAINLINE
WALTHERS • WILLIAMS • WOODLAND SCENICS • AND MORE...

SIGN-UP FOR OUR E-MAIL SALES

TRAINWORLD.COM

1-800-541-7010

e-mail: ORDERS@TRAINWORLD.COM

751 McDONALD AVE., BROOKLYN, NY 11218

HUGE INVENTORY • GREAT SELECTION • FAST SHIPPING

10% OFF IN-STOCK

HO, N & ON30 ITEMS

NO NEW RELEASES. CANNOT BE

COMBINED WITH ANY OTHER OFFER.

MENTION CODE WORD MRJA16

EXPIRES 8-15-16

HALFPRICEHOBBY.COM

**100's of HO and N Scale specials
at 50% off of M.S.R.P. at**

www.halfpricehobby.com

Regular Stock items always discounted
from 20 to 50% off with low flat rate
shipping of \$8.99

Featuring products from Athearn and other
quality brands

Special orders and pre-orders accepted at
regular discounted prices.

Please email service@halfpricehobby.com
for pricing and availability.

A Fine New Book!

American Car & Foundry Box Cars, 1960-1981

by Edward S. Kaminski

Complete history of AC&F's last manufacturing of box cars, 1960
to 1981, with complete production record and thorough photo
coverage. 256 pages, 466 photos (most color), 41 graphics.

Price: \$75

California residents add \$6.00 sales tax.

Free shipping, domestic individual orders; \$40 foreign (\$30 Canada)

Order direct: 11508 Green Rd., Wilton, CA 95693

• Visa & Mastercard orders: 1-800-305-7942 •

www.signaturepress.com • DEALER INQUIRIES INVITED



SIGNATURE PRESS

HAWKINS RAIL 37 YEARS OF SERVICE

- GRAIN IS MOVING AT HAWKINS RAIL! -

See 130 car unit grain train running on the in-store layout. Many out
of production items from estates. Providing same day shipment for
37 years! Call Jack Hawkins at 765-742-5577

See You at the UPHS Convention

3501 Union St., Suite 6. *Everything for the serious modeler.*

Hours: Mon-Fri 12-5, Sat 10-5

Closed Sun. Evenings by appointment.

ALL MODELS SUBJECT TO PRIOR SALE.

WE DO NOT HAVE A CATALOG. We ask that you call us
or send us your want list with SSAE. We will advise you
of the price, availability, and shipping charges. International
shipments made only to countries accepting insured
mail. We have no minimum order. Personal check orders
are held 4 weeks. MASTERCARD and VISA accepted.
Sorry, collect calls are not accepted, but feel free to call
with your railroad questions, model or prototype.



**HAWKINS
RAIL
SERVICES**

Mail to:
P.O. BOX 6808
LAFAYETTE, IN 47902
PHONE: 765-742-5577

MODERN UNIT TRAIN

Buffer Cars and Crude Oil Tank Cars



www.scaletrains.com

Learn more and order now at www.ScaleTrains.com and Select Retailers.

© 2016 ScaleTrains.com, Inc. ScaleTrains.com and Rivet Counter plus respective logos are trademarks of ScaleTrains.com, Inc.
ScaleTrains.com, Inc. 7598 Highway 411 Benton, TN 37307 844-9TRAINS 844-987-2467

Scene and photography by Ken Johnson.
Preproduction models shown



STOP. LOOK. WATCH!

See expert modelers in action with unlimited access to:

- Hundreds of how-to videos
- Exciting new series
- 3D track plans
- Product reviews
- Layout visits

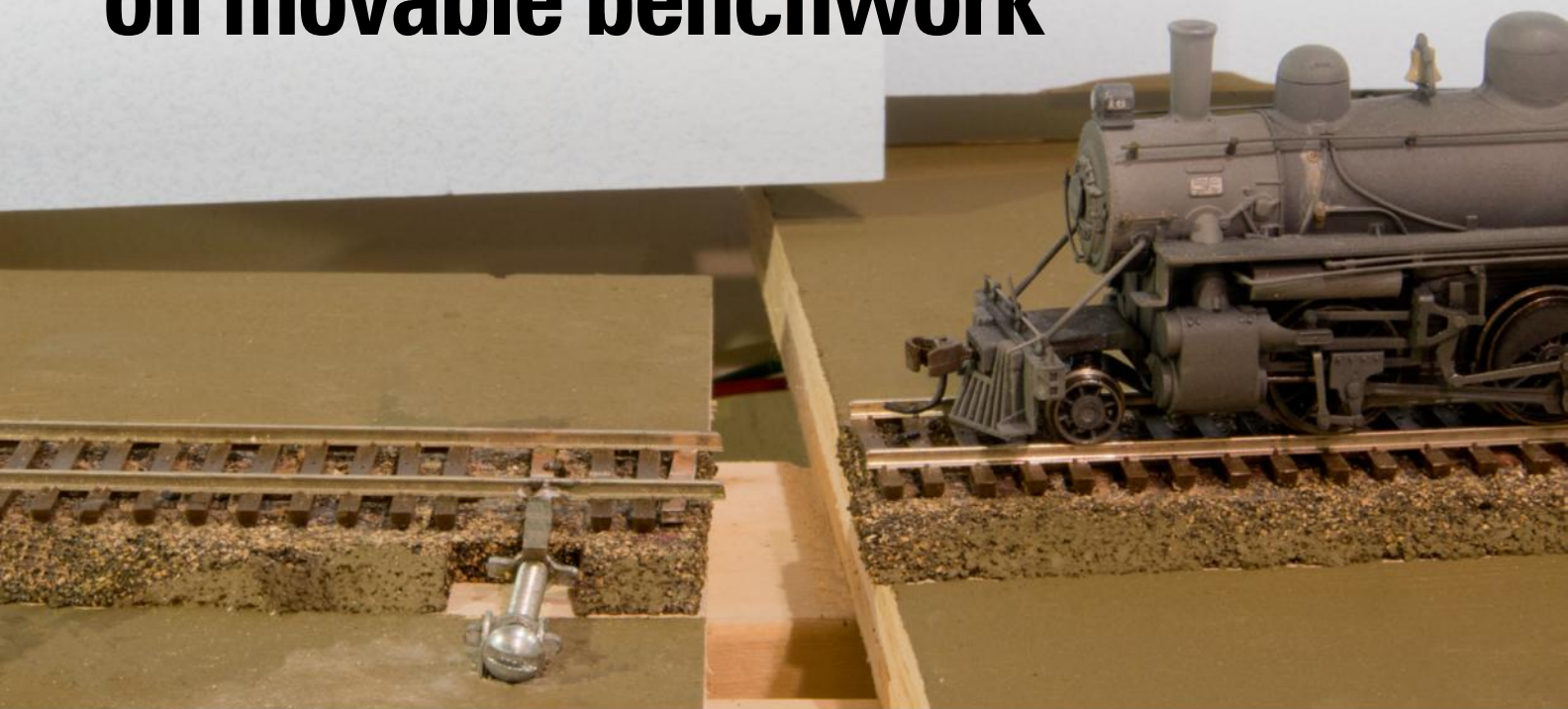
**NEW
VIDEOS
ADDED
EACH
WEEK!**

Join our community today at
www.MRVideoPlus.com/Member



P21150

ALIGNING TRACK on movable benchwork



Gerry Leone installed this simple and inexpensive track adjuster. It's on the movable benchwork that spans a doorway between his two layout rooms on his new HO scale Bona Vista RR layout, and makes derailments a thing of the past.

A few turns of a screw keep the track aligned on benchwork that swings up, down, out, or away

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

As I planned my new HO scale Bona Vista RR, it became painfully obvious that the mainline track would have to cross a 4-foot doorway opening. On two decks.

I toyed with the idea of having the upper deck lift up (drawbridge-style) and having the lower deck drop down, but that just seemed to be too much of a hassle – the railroad spans two rooms and I'd be in and out of that doorway half a dozen times in the course of an operating session. The best solution, it seemed to me, was to build benchwork that swings open on a hinge, just like a door.

The problem

This meant I'd need the four track ends on the swinging benchwork to line up perfectly with the track on the permanent benchwork every time the gate was closed. And I couldn't adjust the

position of the door by eye, because half the time I'd be on the outside and wouldn't be able to see the track.

Anyone who's suffered the problems of seasonal "breathing benchwork" knows getting four track ends to line up perfectly every time is a tall order. So this needed a foolproof solution.

After untold numbers of adjustments as temperature and humidity fluctuated throughout the year, I finally came up with a fairly easy solution: track ends that could be easily adjusted.

The solution

I realized the size of the adjustment needed to line up the tracks was miniscule – maybe $\frac{1}{32}$ " at best. But in HO scale, $\frac{1}{32}$ " is critical. So I had to find a way to fine-tune that adjustment and hold it. A fine-threaded bolt came to mind, but how to attach it to the track?

One day, while scratchbuilding turnouts in a Fast Tracks jig, the solution hit me: copper-clad ties, which are easy to solder to. I'd make the four ends of the tracks on the swinging door adjustable to match the rails on the permanent benchwork on both sides. (The adjusters could instead be put on the permanent tracks.)

Making the adjusters is simple. You only need two copper-clad printed-circuit (PC) board ties and two $\frac{1}{8}$ " toggle bolts (See **fig. 1**). Pre-cut copper-clad ties – basically just a narrow strip of PC board material – are available from Fast Tracks (www.handlaidtrack.com) or Clover House (www.cloverhouse.com). Or you could cut your own from a sheet of PC board material. Toggle bolts, used for hanging items on plasterboard walls, are sold at hardware stores.



Readers can watch the first episode of Gerry Leone's new monthly video series "Off the Rails" for free by visiting www.MRVideoPlus.com.

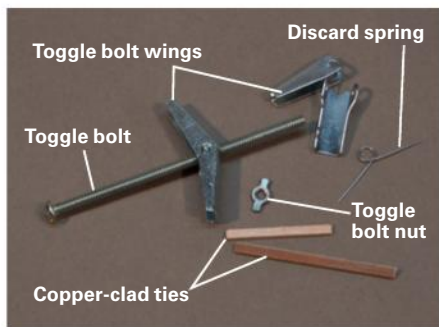


Fig. 1 All the pieces. The parts from two 1/8" toggle bolts and two copper-clad ties are the materials needed to make the track adjuster.

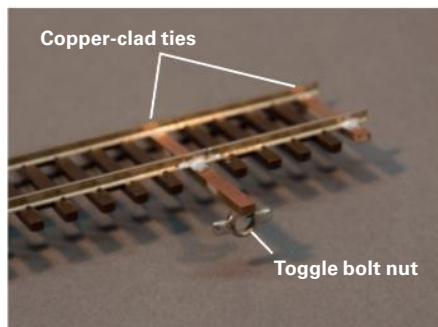


Fig. 2 Adding ties and nuts. Two plastic ties in the flextrack are replaced with copper-clad ties, which are soldered to the rails. The "nut" from a toggle bolt is soldered to a copper tie.

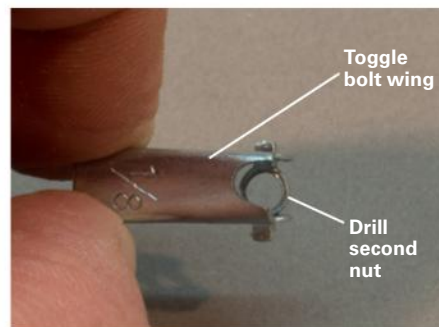


Fig. 3 Space for the bolt. The second toggle bolt "nut" is drilled out to remove its threads, and the slot in the toggle bolt "wing" is elongated to accommodate the bolt.

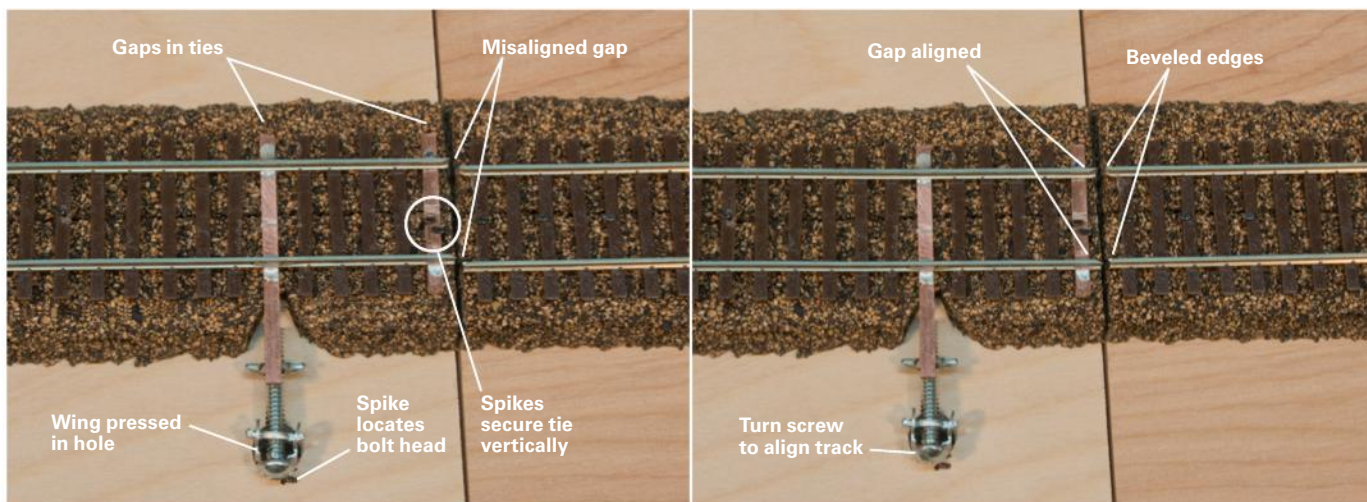


Fig. 4 All together now. The track adjuster is mounted at the point where the movable benchwork, on the left side of each photo, meets the permanent benchwork on the right side. A twist of a screwdriver brings track back into alignment.

Installation

To begin, I made sure about 6" of flex-track adjacent to the swinging door edge had nothing holding it down – it needs to be able to slide back and forth. I cut off the plastic tie adjacent to the benchwork edge – the last tie on the flextrack – and replaced it with a copper-clad tie soldered to the rails to hold it in gauge at the critical junction point.

I also replaced another tie farther back on the rails with a copper-clad tie that was about 1" longer than a regular tie (See **fig. 2**). It's important to file a narrow gap in the copper cladding before turning on the track power or there will be two shorts. To cut the gap, I used the corner of a small triangular file. A few swipes were all I needed.

Next, I disassembled both of the 1/8" toggles, and tossed out both springs and three of the four toggle "wings." I saved one wing, one bolt, and both of the small, threaded "nuts" that hold the bolt.

I soldered one of those threaded nuts to the underside of the longer copper-clad tie, as shown in **fig. 2**. I re-installed

the other nut in the toggle wing, chucked that assembly into a bench vise, and used a no. 28 drill bit (about .14" diameter) in a slow-moving drill to drill out the threads. While the toggle wing was in the vise, I used a round file to elongate the slot near the former toggle's hinge point (See **fig. 3**). Elongating this slot gives the bolt adequate space to move in and out without catching.

Next, I drilled a hole in the 3/4" plywood subroadbed on the swinging door, about 1" away from the end of the longer copper-clad tie. This hole needs to hold the toggle wing securely in place. For the size of toggle bolt I was using, a 5/16" hole worked great. I press-fit the toggle wing into that hole, so the nut was slightly above the subroadbed. After more than a year in operation, the toggle wing hasn't budged, but if it does, dripping some two-part epoxy into the hole will hold it.

I cut the bolt about 1/4" longer than the distance between the toggle wing and the nut that's soldered to the copper-clad tie. I then slipped the bolt through the unthreaded nut in the toggle wing,

and threaded it into the nut on the copper-clad tie.

To make sure the track stayed flush with the cork roadbed and didn't raise up, I added two spikes, one on either side of the copper tie next to the gate's edges. Just for good measure, I filed a small bevel on the insides of all four railheads. Last, I drove a spike into the subroadbed in front of the bolt head to keep the bolt flush with the toggle wing. That way, the track can also be pushed into alignment without the screw simply backing out.

Operation

Voila. Done. Simply use a screwdriver to move the track back and forth a small increment at a time to line up with the permanent track on the other side of the opening, as seen in **fig. 4**. The entire mechanism can be easily disguised by bushes, tall grass, or other scenery.

Periodically through the seasons, or before important operating sessions, I check to make sure the track is still aligned. If not, making an adjustment takes just a matter of seconds. **MR**



Upgrade a plastic freight car kit

Turn an easy-to-assemble car into a well-detailed model using these techniques

By **Mont Switzer** • Photos by the author

Plastic kits have long been a staple of model railroading. Though attractively priced, kits often feature molded details, a basic brake system, and simplified lettering. However, with a bit of work and a few detail parts, freight car kits can be turned from simple to stunning. In this article, I'll show you how I took a stock HO scale Accurail 40-foot refrigerator car and modified it to better match a Burlington Refrigerator Express prototype.

The Accurail double-sheathed refrigerator car is based on the Burlington Refrigerator Express (BREX) 75000 through 75999 series built by American

Car & Foundry in 1922. The cars were upgraded various times throughout their years of service. My model of BREX 75792 is based on a prototype photo that appeared in an Accurail advertisement. The car is known to have been in operation in the late 1950s, the period I model.

Underbody modifications

I lengthened the wheelbase of the Accurail underbody by one scale foot to match the wheelbase of the BREX 75000-series reefer fleet as originally built. To do this, I cut the underbody just inside both bolsters and inserted



Mont Switzer shares how he upgraded this Accurail HO scale kit (top) to more closely match a Burlington Refrigerator Express prototype. An example of a prototype car is shown in the black-and-white photo. Prototype photo from Bill Welch collection

.060" x .060" styrene spacers, as shown in **fig. 1** on the next page. I then shortened the ends of the underbody by .060" to maintain the proper car length.

Although this method of lengthening the wheelbase is difficult, it eliminated having to cut and lengthen the car's center sill.

Next, I reinforced the modified underbody by attaching a piece of .040" styrene to the floor with liquid plastic cement. When the cement dried, I trimmed the excess styrene.

Then I installed the weight furnished with the kit on top of the .040" styrene sheet using short screws.

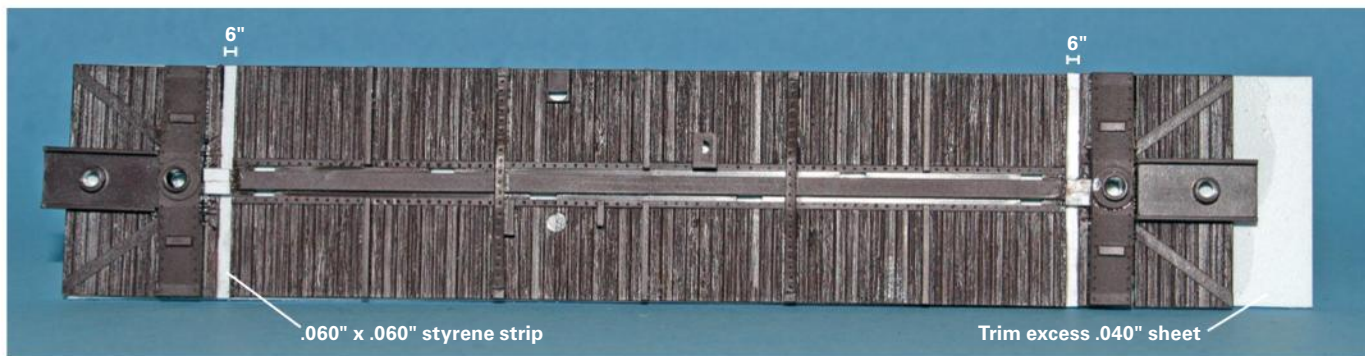


Fig. 1 Just a little longer. To match the prototype's wheelbase, Mont extended the underbody by a scale foot. He made the cuts behind the bolster to minimize damage to the fish-belly center sill.

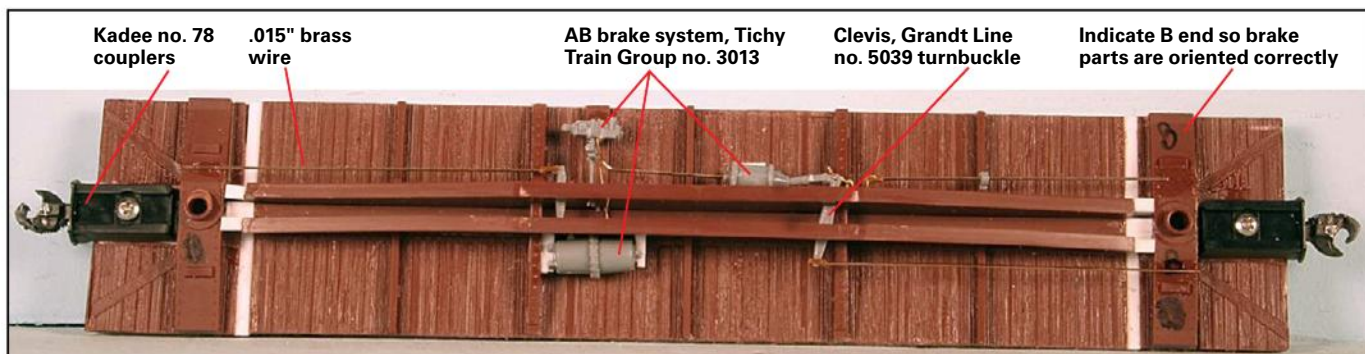


Fig. 2 Brake detail. Mont replaced the kit's K brake system with Tichy Train Group's AB brake set and .015" brass wire, as he did on a similar freight car. This particular model features Kadee no. 78 couplers.

The wheelbase extension pushed the coupler centers out .060" on each end. I used Kadee no. 153 short-shank couplers to compensate for this change.

Brake detail

The K brake system furnished with the Accurail kit is correct for cars in operation from the 1920s through the early 1950s. The car was then converted to AB brakes, which I re-created on the model, as seen in **fig. 2**.

The .015" brass wire air pipes and brake rods are important if your layout is set at eye level or higher, as they can be seen in profile. Don't forget to drill holes in the brake hardware for the pipes and rods before attaching them to the model. I omitted the train air line, as this detail is hard to add after the fish-belly center sill is installed.

I used Grandt Line styrene turnbuckles to model the brake rod clevises. I made up a sprue of brake rods ahead of time. See **fig. 3**. I secured the .015" brass wire to the styrene with cyanoacrylate adhesive (CA). Then I cut the turnbuckles in half. I trimmed the wire to length at installation.

Upgraded ends

I removed the molded ladders from the car ends with a no. 17 blade in a hobby knife. I then sanded any raised areas

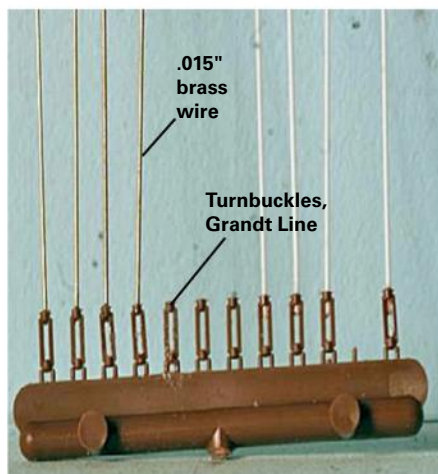


Fig. 3 From turnbuckles to clevises. Grandt Line turnbuckles are cored for .015" brass wire, making it easy to make large batches of brake rod clevises.

flush with the ends. I used the back of a no. 11 blade to rescribe the sheathing detail after removing the molded-on parts.

I retained some of the molded details, such as the poling pockets, the lower brake staff bracket, the corner straps, and the running board end supports. My car had the correct BREX number, so I preserved it, as shown in **fig. 4**.

With the molded parts removed, I added commercial and scratchbuilt detail parts, as seen in **fig. 5** on the next



Fig. 4 A close shave. Mont removed many of the molded end details using a no. 17 chisel blade and a hobby knife. He left some of the cast details near the bottom of the car.

page. When painted Boxcar Red, the parts blended right in. See **fig. 6**.

Roof modifications

The Hutchins roof on the Accurail reefer is correct for some of the cars operated by BREX during the late 1950s. According to fellow hobbyist Bill Welch, hatch covers that were carelessly opened could cause considerable damage to the steel roof sheathing. To protect the roof, hatch rests were added to full-size

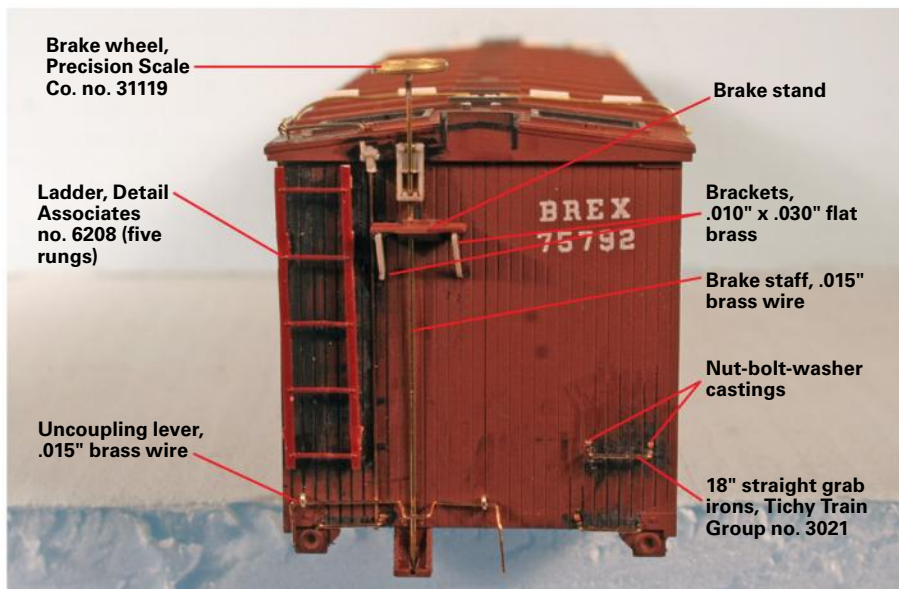


Fig. 5 Upgraded ends. A variety of freestanding detail parts improved the look of the car ends. Mont scratchbuilt some of the parts from brass wire.



Fig. 6 A perfect match. With all the detail parts applied, Mont painted the car end details Boxcar Red. He masked the reporting mark and road number prior to painting.

Beef up the brake staff



Tired of the brake wheel flying off the staff every time it's bumped? Mont Switzer's technique will put an end to brake wheel blues.

Because a brake staff sticks out above the car's roof line, it's easy for the brake wheel to get knocked off during regular car handling. However, in a few easy steps, you can make the brake wheel and staff a solid assembly that can withstand an occasional bump.

Start by purchasing a pack of Precision Scale Co. brass five-spoke brake wheels (no. 31119). Leave them on the casting sprues. Then lay them top down on a piece of soft pine and drill out the center of each wheel with a no. 75 bit.

Next, cut 2" lengths of .015" brass wire. Press a wire through each hole and into the soft pine. Add flux to the joint where the brake wheel and wire meet. Then apply heat with a soldering iron to the brake wheel while touching solder to the joint. Remove the iron when the solder melts.

After the solder joints have cooled, remove the wire from the wood and trim it just above the brake wheel. This simulates the look of a nut-bolt-washer casting on top of each brake wheel.

Cut the brake wheel from the sprue and clean it up with a file. Then trim the wire to length and install the vertical brake staff with a drop of cyanoacrylate adhesive. Finally, paint the brake wheel and staff with your favorite brand of paint that matches the body color. — *M.S.*

75000-series cars. Bill developed a clever way to model the rests using flat brass, styrene strip, and nut-bolt-washer castings, as shown in **fig. 7** on the next page.

I completed the rooftop details by adding Sunshine Models etched-brass hatch cover latches and staples formed from .010" brass wire. See **fig. 8**.

Side details

Accurail's separate sides make it easy to remove the molded-on grab irons and ladders using a no. 17 blade. As I had on the ends, I rescribed the joints filled by the molded parts with a no. 11 blade, using a machinist's square as a guide.

Then I installed a styrene panel above the door opening, rivets on the panels above and below the doors, 18" straight grab irons with .020" rivets, metal stirrup steps, and a six-rung ladder. All the modifications are shown in **fig. 9**.

I finished detailing the side by adding door tie-back latches, which I made from .040" x .060" pieces of .005" styrene. After cutting the styrene, I bent the latches to 45-degree angles.

I carefully attached each tie-back latches to the car side with solvent cement. I further secured each latch by drilling a no. 75 hole and installing an .020" rivet. See **fig. 10**.

Finally, I added tack boards left over from another project to the sides of the car. I painted the new side parts Reefer Yellow.

Wrapping it up

I weathered the car using a technique shown to me by fellow hobbyist Greg Martin. I ran a sharp no. 2 pencil into all

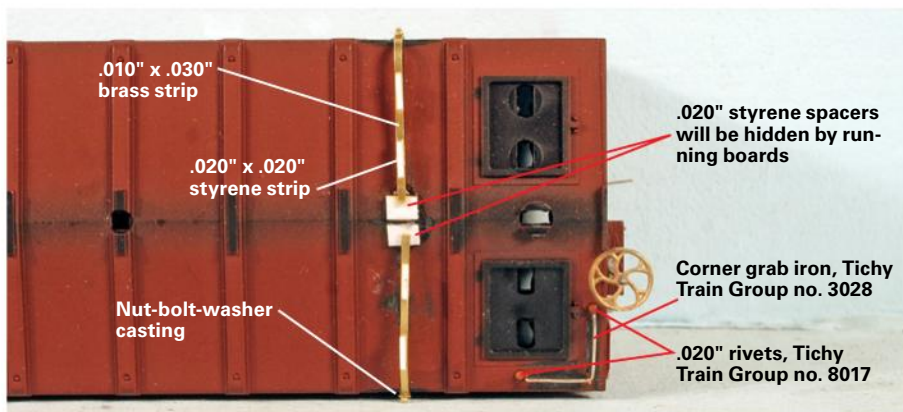


Fig. 7 Stop the dents. To prevent roof damage from roof hatches that were carelessly opened, the full-size reefers were equipped with hatch rests. The rests are easy to re-create with brass and styrene.

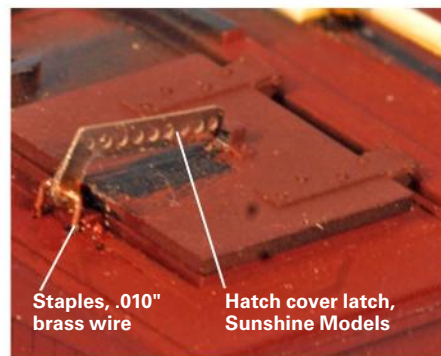


Fig. 8 Seal the hatches. The final rooftop details Mont added were for the hatch covers. He secured the Sunshine Models hatch cover latches to the roof with brass wire staples.

Materials list

Evergreen styrene

120 .020" x .020" strip
153 .060" x .060" strip
9040 .040" sheet

Detail Associates

6208 six-rung ladders

Grandt Line

5039 turnbuckles

Precision Scale Co.

31119 five-spoke brake wheel

Sunshine Models

hatch cover latches

Tichy Train Group

3013 AB brake set
3021 18" straight grab irons
3028 corner grab irons
8017 .020" rivets

Miscellaneous

.010" brass wire
.010" x .030" brass strip
.015" brass wire
Boxcar Red paint
Nut-bolt-washer casting
Reefer Yellow paint

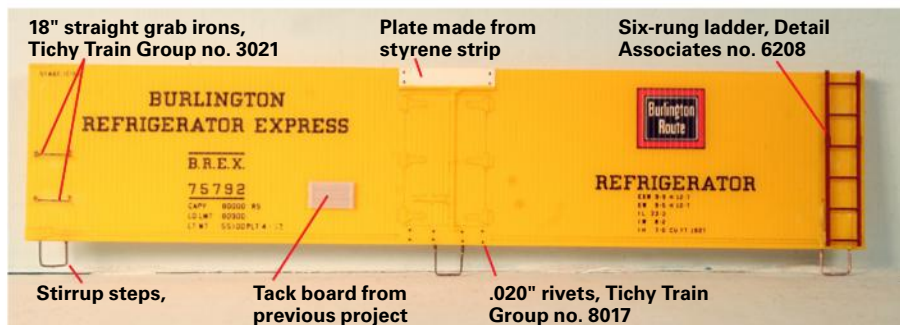


Fig. 9 Side upgrades. Mont removed the molded details using a no. 17 blade. Then he added a variety of plastic and brass detail parts.

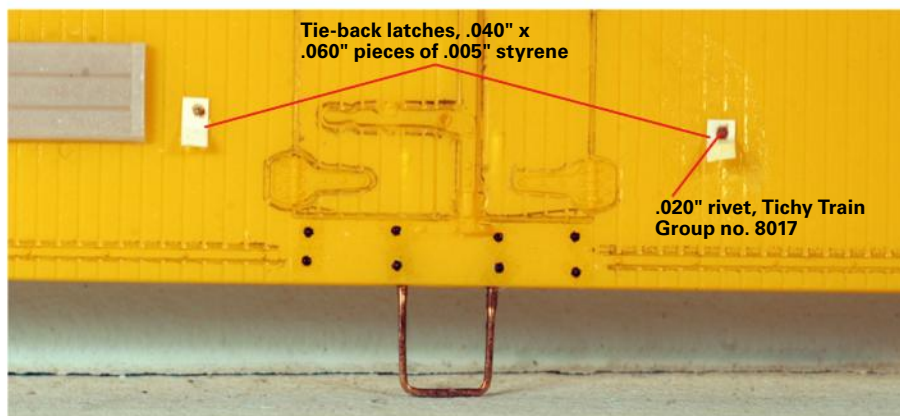


Fig. 10 Hold the doors. A small but often-overlooked detail on refrigerator cars are the tie-back latches. Mont made these from .005" styrene and .020" rivets.

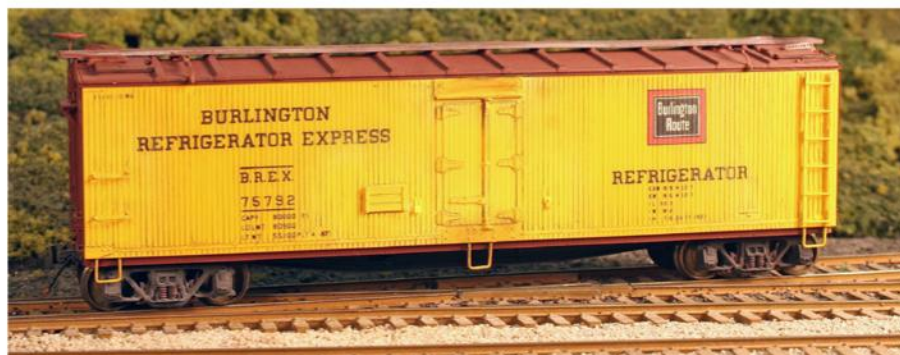


Fig. 11 Pencil it in. Mont weathered the reefer by running a sharp no. 2 pencil into the crevices and scribed areas. The graphite helps highlight the details, and any errors can be fixed with an eraser.

crevices and scribed areas to highlight these details. See **fig. 11**.

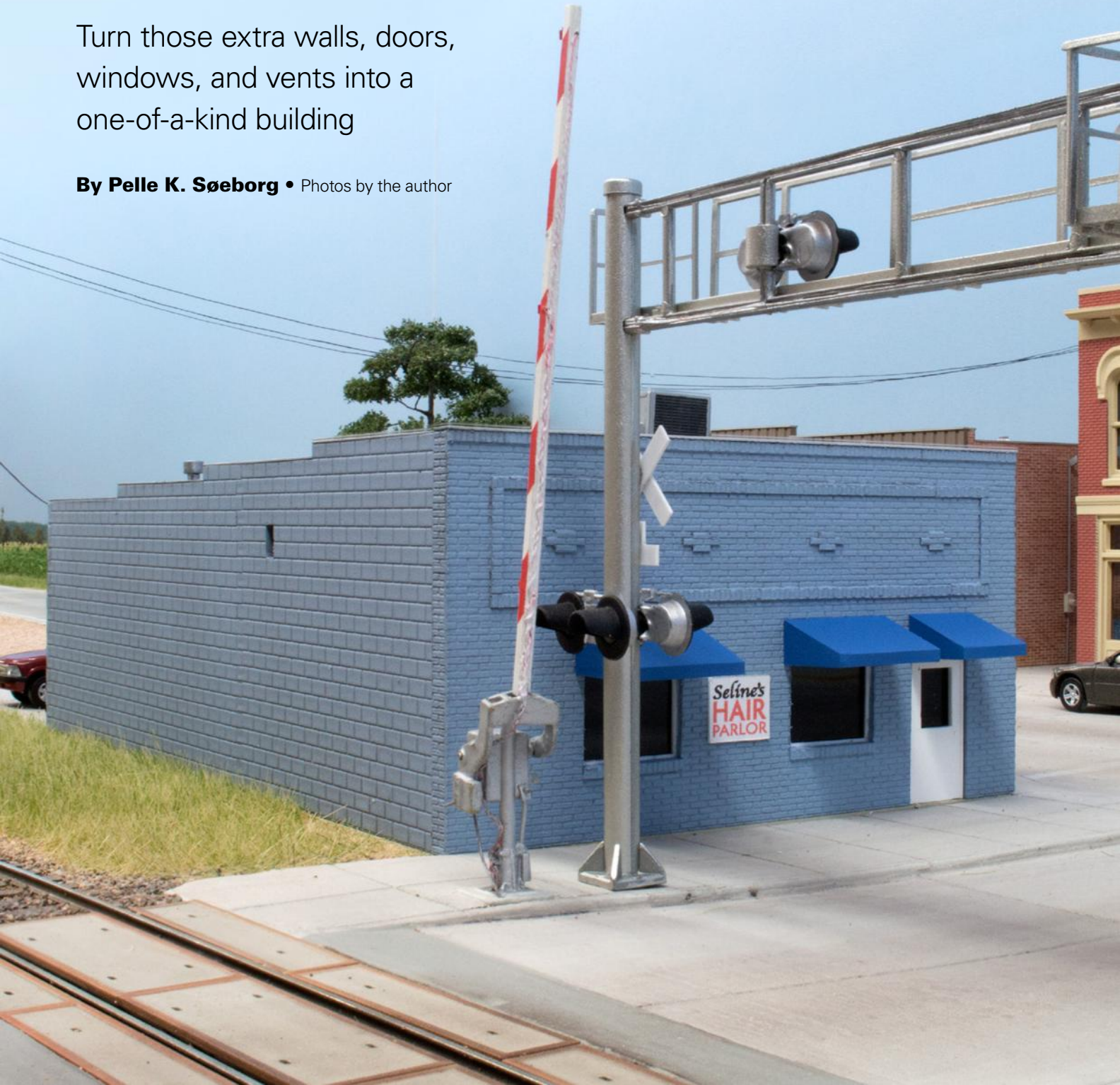
Detailing projects like this yield an excellent looking model that's well within the skill level of most modelers. So grab a kit, some detail parts, and photos and head over to the workbench. [MR](#)

Mont Switzer lives in Middletown, Ind. His article on adding tractors to a flatcar ran in the February 2016 MR.

BUILD A SIMPLE STRUCTURE FROM LEFTOVERS

Turn those extra walls, doors,
windows, and vents into a
one-of-a-kind building

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





Pelle Søbørg turned leftover parts into Seline's Hair Parlor. The trackside structure is part of his new HO scale Union Pacific layout.

Many of us have boxes of leftovers from kits and scratch-building projects. You know, the ones filled with wall sections, doors, windows, and vents, among countless other items. When I needed a trackside structure for my new HO scale Union Pacific layout, I looked in my parts boxes instead of buying a new kit.

Though Seline's Hair Parlor is free-lanced, it was inspired by small town buildings I've seen on my trips to the Midwest. Many of these buildings have a brick facade and side and back walls built from block or other cheaper material.


Fortunately, my parts boxes contained the materials I needed to capture that look. I found a partial sheet of Monster Modelworks clean brick Lazerboard [resin-impregnated cardstock – *Ed.*] from a convenience store that I scratch-built a while back. There wasn't sufficient material for an entire building, but enough for a facade.

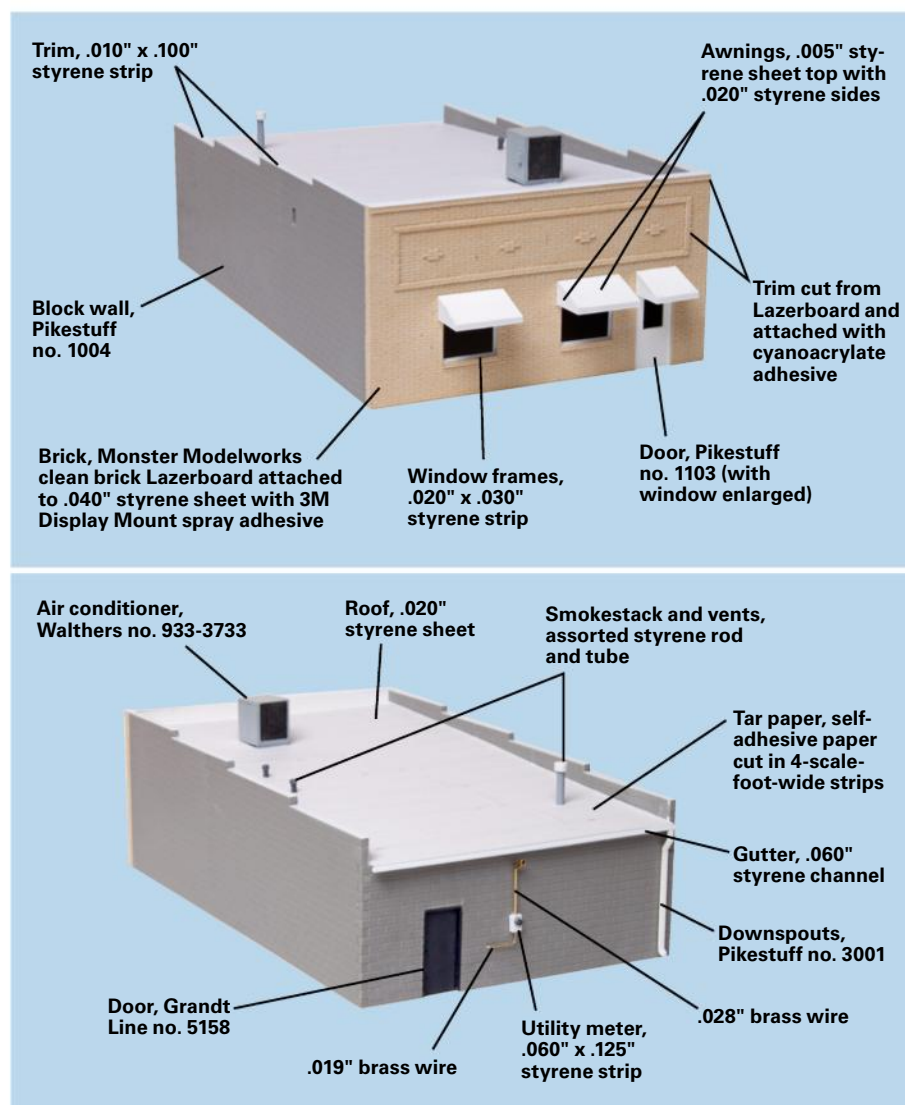
I also found some concrete-block wall panels from Pikestuff that I could use for the side and back walls. In addition, I found two doors and an air conditioner that would look appropriate.

Since the raw materials used on the building were in a variety of colors, I used an airbrush to spray the entire structure primer gray. Then I sprayed the walls light blue and the front door white. I left the rear door primer gray.

I airbrushed the roof Model Master Gunship Gray with Skin Tone Dark Tint added. I finished by weathering the walls with a dark gray wash.

To complete the project, I added window glazing and a computer-generated sign.

This project proved a great way to use up some of the leftover parts that I'd been accumulating. I hope this article inspires you to turn those bits and pieces you've been saving into a structure you won't find on any other model railroad. 



Scratchbuild a **WOOD TRESTLE AND TRUSS BRIDGE**

The prototype spanned a wide valley on the
steam-era Stockton & Copperopolis RR

By **Don Ball** • Photos by the author





A westbound train steams onto the Stanislaus River bridge on Don Ball's HO scale Stockton & Copperopolis RR, set in 1895. Don scratchbuilt the bridge following prototype photos and plans. The vintage phone in the background is used during operating sessions.



The Stanislaus River bridge is seen in an 1880s photo, looking south toward Oakdale. Oakdale Museum & History Center photo



Fig. 1 Temporary crossing. The site of the future river was crossed with a temporary plywood bridge.

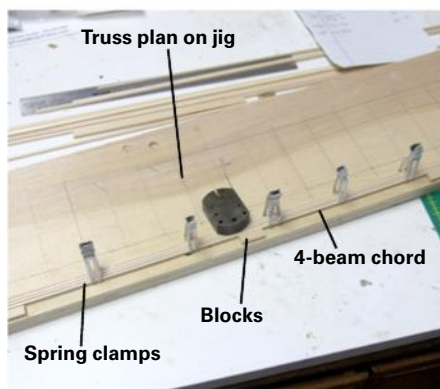


Fig. 2 Truss template. Don built a jig for the truss assembly. At the bottom, the glue is drying on the first chord.

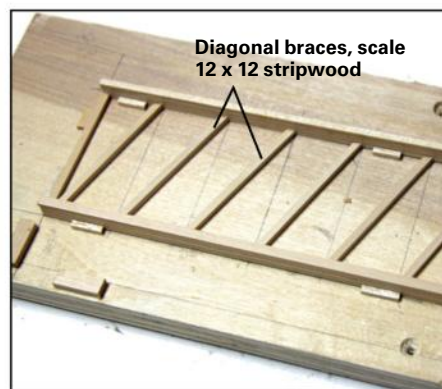


Fig. 3 Members meeting. Don sanded the diagonal members to ensure they all had the same angle.

Spindly wood trestles crossing mountain gorges have always fascinated model railroaders. In the early days of railroading, it was the cheapest way to get a railroad across a river or valley and on to its destination. Railroads could, and often did, come back later to fill in the area under the trestle or replace it with an iron, steel, or masonry substitute.

When the Stockton & Copperopolis RR was building south from Stockton, Calif., the Stanislaus River Valley was the chief obstacle in the path to Oakdale. In a few weeks in the fall of 1871, the railroad bridged the river with two 150-foot Howe truss bridges and more than 500 feet of approach trestle.

When I was planning my model of the Stockton & Copperopolis, I definitely wanted to include this signature bridge. For several years, only a small strip of temporary plywood carried the track over the river-to-be (see **fig. 1**), but it was good enough to hold operating

sessions. Fortunately, I had the room for an almost scale-sized structure. While few of us have the room for an 8-foot-long bridge, the same techniques can be used to build any length of structure.

To start with, I needed some dimensions. At first, I considered estimating dimensions from a photograph, but I found out the California State Railroad Museum had an original drawing of the trestles showing the spacing of the bents. The drawing also showed the topography of the landscape, which helped me get the look of the countryside right. The only difference between the prototype and my model would be the 30" radius curve at one end of the bridge.

Construction begins

The job started by laying in some plywood where I wanted the level of the river to be. Since the layout was set in the summer, the water level would be low.

I laid out a chart showing each bent and its height based on the prototype drawing. Next, I marked the locations of each trestle bent and bridge pier. Risers cut from 1 x 4s were installed to support

the bents and piers. The heights of these risers were determined by subtracting each bent height from the rail-to-water-level dimension. I installed the 1 x 4s about 1/4" shorter so I could fine-tune the base of the piers and bents with shims.

While the glue on the risers was drying, I built a jig for the truss sides. I needed a total of four sides for the two bridge spans, and a jig would ensure that they would be identical. I drew a bridge on a flat piece of wood and glued stripwood scraps to it to hold the truss members in place (**fig. 2**).

The first two assemblies to place in the jig are the top and bottom chords. These pieces are both made up of four pieces of stripwood spaced slightly apart by pieces of .015" thick styrene. The prototype bridges used 1 1/2" iron washers. These were to prevent water from accumulating between the chord members and causing rot.

The diagonal truss members (seen in **fig. 3**) are made from 8 x 8 and 12 x 12 scale lumber. I used a small sanding disk with a fence clamped at the right angle to put the required angle on these pieces.

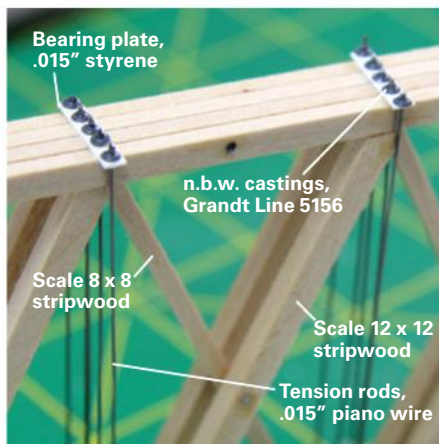


Fig. 4 Truss side. Once the wood elements were glued securely, Don added wire tension rods.

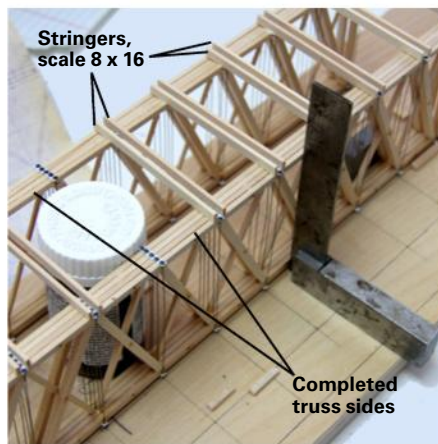


Fig. 5 Side by side. Don braces the truss sides square and evenly spaced while they're joined with stringers.

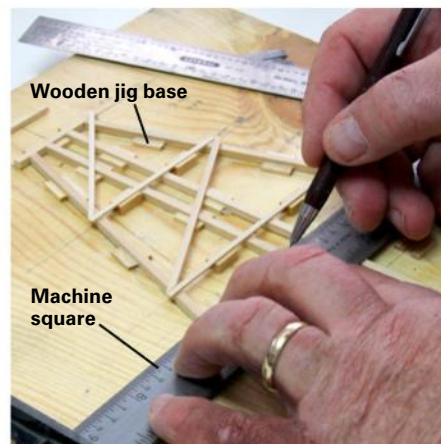


Fig. 6 The jig is up. Don built all the trestle bents on the same jig; the only difference between them is the height.

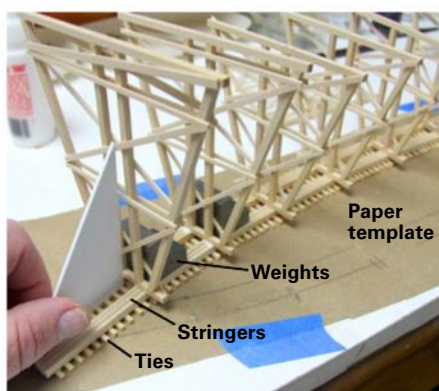


Fig. 7 Joining parts. After marking the track curve on paper, Don cut and glued stringers to follow the curve.



Fig. 8 Cribbing pier. On the prototype, the bridge piers were made from 12 x 12 wood cribbing.

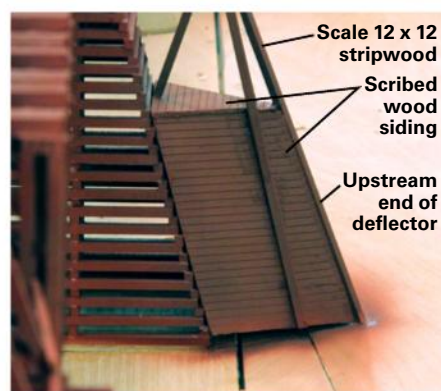


Fig. 9 Debris deflector. Don used scribed siding to make a deflector. This protected the pier from debris.

When the glue was dry, the truss side could be removed from the jig and the tension rods added (**fig. 4**). To model the tension rods, I glued bearing plates of .015" styrene across the top and bottom chords. Grandt Line 5156 nut-bolt-washer castings were then glued to the styrene. The castings have a .020" hole in the center that made them ideal for my purposes. I drilled .020" holes through the bearing plates with a no. 76 drill and ran pieces of .015" diameter music wire from one chord to the other. The truss side was now complete.

I built another jig to hold the truss sides the correct distance apart while I glued scale 8 x 16 stringers across the top to hold the assembly together (**fig. 5**). Note that these stringers are clustered around the tension rods, not uniformly across the length of the bridge. The X-bracing (8 x 8 pieces) was now glued in place both internally and on the bottom of the bridge.

Trestle bents and piers

Each of the trestle bents is built identically. The only difference is their

heights. To build them uniformly, I laid out another jig on a piece of wood. Two vertical columns are oriented directly beneath the rails (later bridges with heavier loads used three columns). The two outside columns, to prevent lateral movement of the bridge, have a batter of 1:4. The batter of a column is the angle at which the column is sloped outward for each vertical foot. It's expressed as a ratio, similar to a turnout's frog number. In this case, the column slopes out 1 foot for each 4 feet of height.

The horizontal braces on the bents are the same, but the diagonal braces vary depending on where in the bent they are. To assemble the bent, the members are glued together in the jig and, when dry, the bent is cut to the correct height according to the chart I developed earlier (as shown in **fig. 6**).

The horizontal stringers on which the bridge ties ride are made similarly to the chords, with the individual members separated by .015" styrene pieces. My prototype used three members; other bridges used more, depending on the load the bridge was designed to bear.

When the glue was dry, I taped two stringer lengths down on the workbench and marked the locations of the bents. On my bridge, each bent is spaced 20 feet apart. I assembled the trestle upside down, gluing the bents to the bottom of the stringers.

For the curved section, I used a piece of kraft paper and rubbed a pencil over the rails to transfer the shape of the curve to the paper. With the bent positions marked, I could cut and glue lengths of stringer material to match the curve (**fig. 7**).

If your prototype had stone or concrete piers, use them, but the piers supporting my prototype bridge were built with 12 x 12 cribbing (**fig. 8**). The north end of the bridge rested on a pier made of three ordinary trestle bents side by side. Because this pier was on dry land, it didn't need to resist current flow as the other piers did.

On bridges like this, a deflector was usually placed on the upstream side of the piers to keep debris from collecting on the flat front of a pier. I built a deflector from scribed wood siding and scale



Fig. 10 Rising to the occasion. Don cut 1/4" wide shims to bring the trestle bents up to the rail heights.

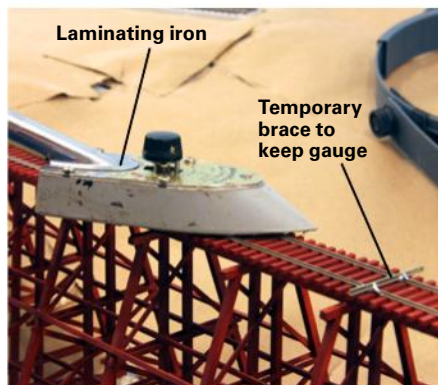


Fig. 11 The heat is on. Don used a laminating iron to heat Barge Cement and glue the rails to the ties.

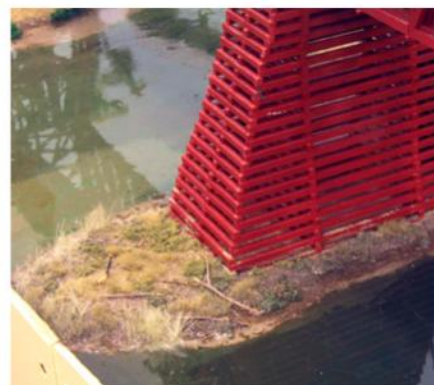


Fig. 12 Surrounding scenery. Don made a sandbar around the central pier before pouring the resin river.



A train rolls over the completed Stanislaus River Bridge. The red color represents fireproof paint, used before creosote.

12 x 12 stripwood, and installed it on the center pier (**fig. 9**).

Final assembly

Whether to paint or simply weather the bridge is up to the builder. Creosote, used today to preserve wood bridges, was unavailable in the 1890s time period that I model. Instead, my bridge is painted an oxide red color to represent asbestos paint, which was used at the time to retard fire.

Assembling the whole bridge can be a bit tricky. In retrospect, I think the best way would be to do so before the track is laid. However, my track was already in place. I temporarily soldered small pieces of rail across the rail tops to keep the gauge. Then, I carefully removed the plywood subroadbed, roadbed, and ties, leaving the rails hanging in space.

There were four pieces of bridge to join together: the north trestle, the two truss bridges, and the south trestle. I leveled the bents and brought them to the proper height with 1/4" wide shims cut down from standard carpenters' shims (**fig. 10**). I coated the shims with glue and slid them together beneath each bent. As I added each section, I made sure that it was not only level, but in alignment with the other sections. With the bridge structure in place, the bridge ties can now be laid on the stringers.

To attach the rails to the ties, I coated the bottom of the rails with Barge Cement, an all-purpose adhesive, and let it dry. I then placed the rails on the ties and heated them with a small heat sealing iron, used in installing laminate countertops (**fig. 11**). The heat melts the cement, which glues the rails to the ties

when it cools. After this step, I removed the temporary scraps of rail keeping the rails in gauge.

Additional details such as water barrels and walkways can now be added. Though guardrails are now standard, they weren't used on this bridge.

I wanted to depict the river at a low-water stage, so I made a sandbar around the central pier and planted grass, weeds, and a few bits of driftwood (**fig. 12**). Finally, I painted the river bottom a dark green and poured Magic Water, a two-part resin product, to model the river water itself. **MR**

Don Ball is a frequent contributor to Model Railroader, its special issues, and other hobby publications. His HO scale Stockton & Copperopolis was featured in Model Railroad Planning 2011.

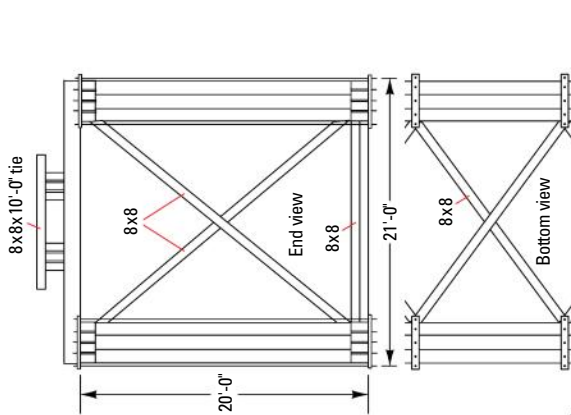
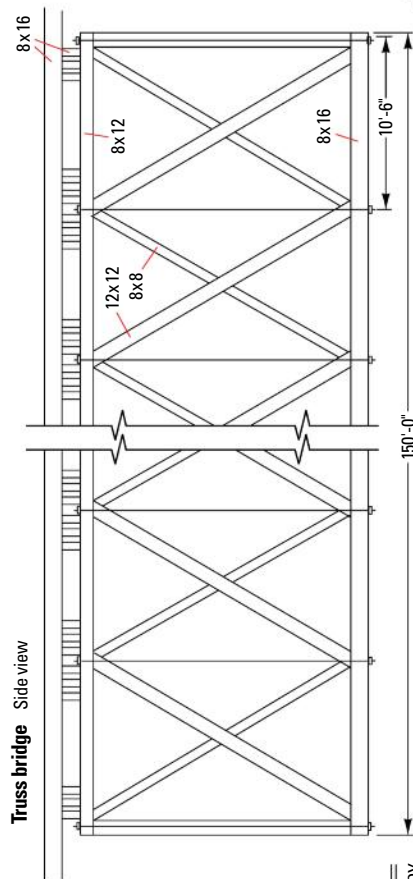
Now on ModelRailroader.com

Download and print out these plans for your own use from our website, www.ModelRailroader.com.

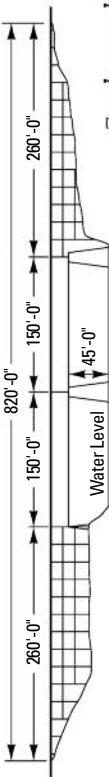


Drawn for *Model Railroader* magazine by
DON BALL AND RICK JOHNSON
Magazine purchaser may have photocopies of these drawings made as an aid to personal model making but does not have the right to distribute copies of the drawings to others. Contact *Model Railroader* regarding commercial use of these drawings.

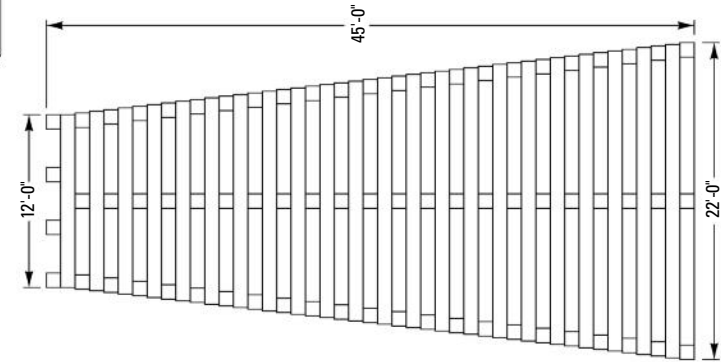
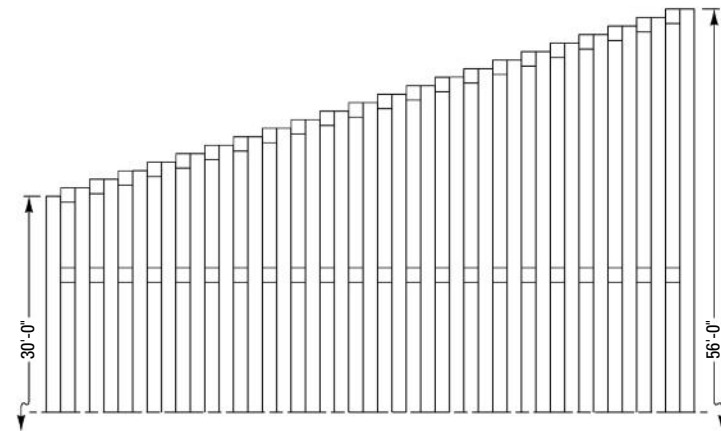
Truss bridge Side view



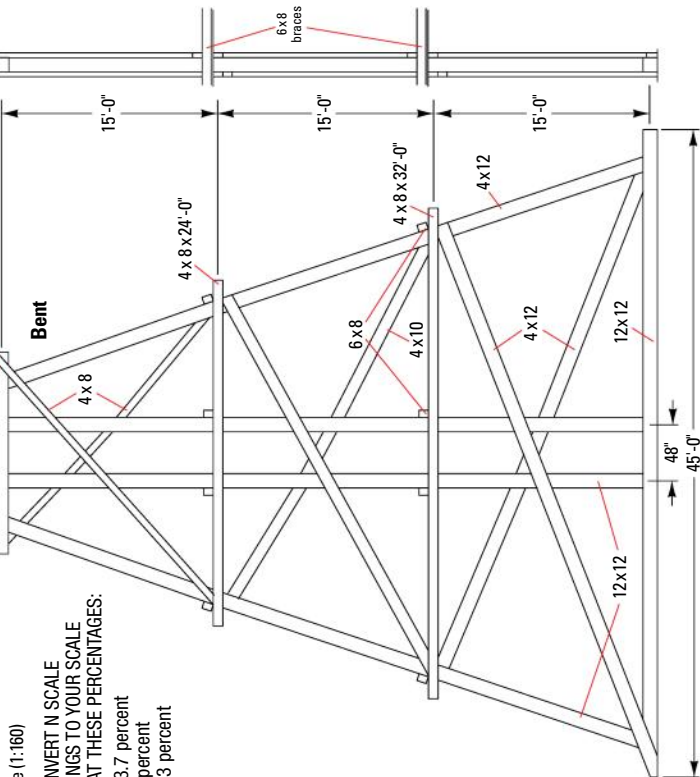
Stanislaus River Bridge



Bridge pier (half)



N scale (1:160)
TO CONVERT N SCALE
DRAWINGS TO YOUR SCALE
COPY AT THESE PERCENTAGES:
HO 183.7 percent
S 250 percent
O 333.3 percent





7 helpful hints to better bridges

Mark Dance used computer-aided drafting to help him make this model of the Canadian Pacific's Farr Creek bridge for his N scale Columbia & Western Ry.

These tips will help you adapt commercial materials to the situations on your layout

By Mark Dance • Photos by the author except as noted

The Columbia & Western Ry. is an N scale model of the Canadian Pacific's Boundary Subdivision as it existed in 1970. [The layout was featured in *Great Model Railroads 2016*. – Ed.] The CP's path through the mountains of southern British Columbia required massive bridges to get the rails across the lakes, rivers, streams, and creeks of the area. I knew capturing the character of the prototype would require modeling many of these impressive bridges, even though I'd never built a bridge in any scale.

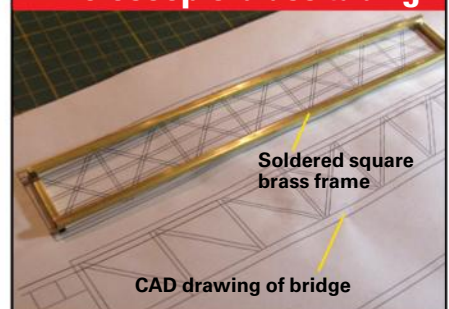
My plan was to design the six large bridges the layout would require in a 3-D computer-aided design (CAD) program and then print them on a commercial rapid prototyping machine. In the end, I turned to traditional scratchbuilding and "part-bashing," and I'm glad I did.

It turned out I really like building bridges, and their construction has brought me a lot of satisfaction. Not everything turned out as designed, of course, and some things turned out even better than planned. So I'd like to share seven helpful hints I learned should building big bridges be in your modeling future.



The Canadian Pacific relocated the Farr Creek bridge, a unique link-and-pin truss, from Calgary. Scott Calvert photo

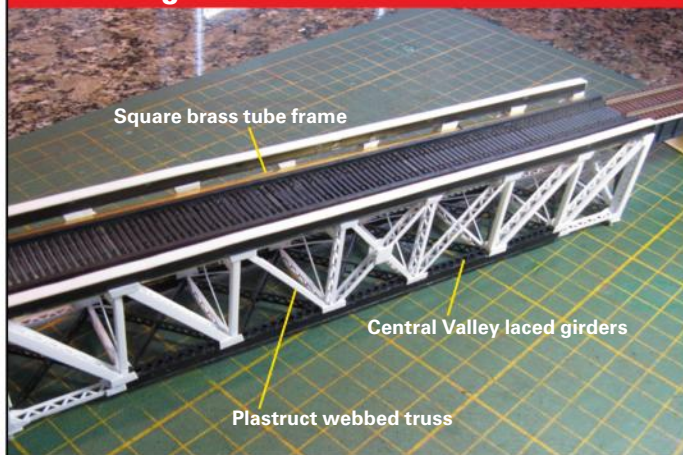
1. Telescopic brass tubing



Building a model bridge around a soldered frame of telescopic brass square tubing or channel improves strength, stiffness, and flatness, and simplifies aligning and attaching multiple spans together. The basic frame of the Slocan Creek bridge is shown laid out on a print from the bridge's CAD drawing.

The prototype didn't have a similar rectangular frame, and in many cases the design of the model may need to diverge from the prototype because of differences in material, space, model strength, or assembly. Styrene webs and rivet decals will be added to this frame so it resembles the prototype's side girders.

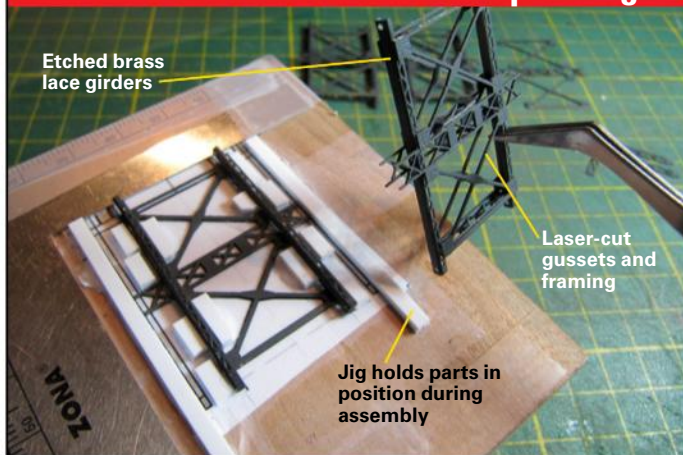
2. Laced girders



Prototype truss bridges, especially those constructed in the early 20th century, were frequently constructed from riveted laced girders to save on weight and material while providing adequate strength and stiffness. While they look elegant, the thought of lacing each girder can be overwhelming. Fortunately, styrene and ABS parts from Plastruct, and girder assemblies from Micro Engineering and Central Valley Model Works, may be modified to suit the model.

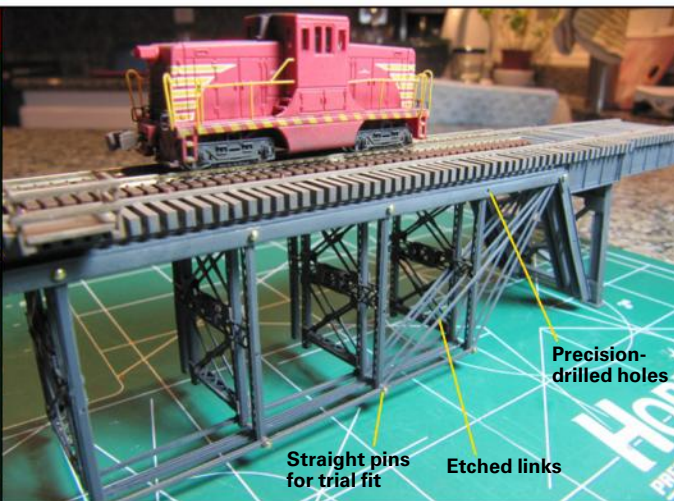
Parts made from these sources are shown attached to the brass frame of the Slocan River bridge. I increased the size of the Plastruct or Central Valley elements with thin webs made from Evergreen styrene, while heavier double-laced girders were simulated by gluing two single-laced elements back-to-back.

3. Precise treatment for link-and-pin bridges



With more than 300 links to be assembled into a model of the link-and-pin Farr Creek bridge, it required special techniques to hold the necessary center-to-center tolerances across all components. The bridge's CAD design accurately laid out all the components and assured clearance for its various interwoven elements.

Links and the laced vertical members hang from holes in the soldered brass channel frame that were located to within .001" and cross-drilled on a knee mill. The two-



dimensional design of the links and laced members were extracted from the master CAD file and sent to a custom etching house for etching from .005" thick brass.

Meanwhile, parts for the central box girder assemblies were extracted from the CAD file and laser cut by RS Laser in Oregon from .015" laser board. Assembly of all these parts took two weeks, with the remaining girder and rocker bent elements fabricated from Micro Engineering and Central Valley parts and styrene extrusions.

4. Abutments and piers are models, too

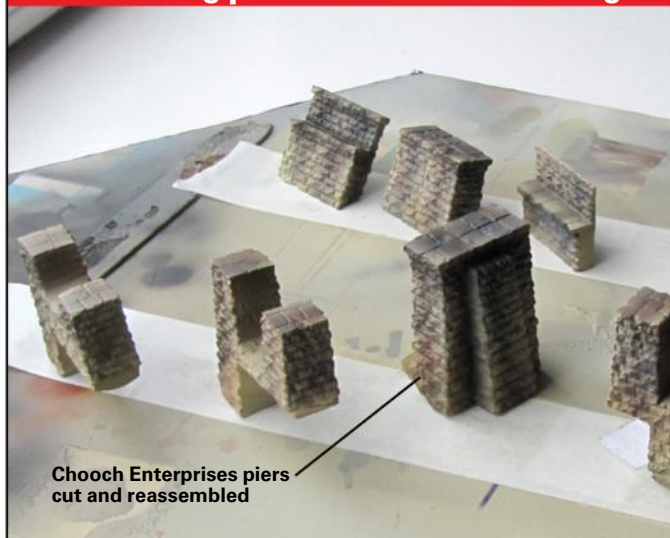


Concrete abutments may look like simple structures, but in many cases the prototypes had complex geometry to serve multiple purposes including bridge support, track support, and retaining earth and ballast. Their sloping surfaces provide strength while shedding water, loose rock, and snow.

I sometimes cast abutments from plaster in wooden forms, but prefer to construct complex abutments, such as the one shown under the Slide bridge model at left, from various thicknesses of balsa wood sheets glued together at the correct angles to match prototype plans.

A thin coating of two-part epoxy wood filler on the surface of the assembly adds texture and creates slightly rounded fillets in the corners, which also add strength. When dry, the wood filler is sanded and filed to flatten and smooth the surface where needed.

5. Kitbashing piers from Chooch castings

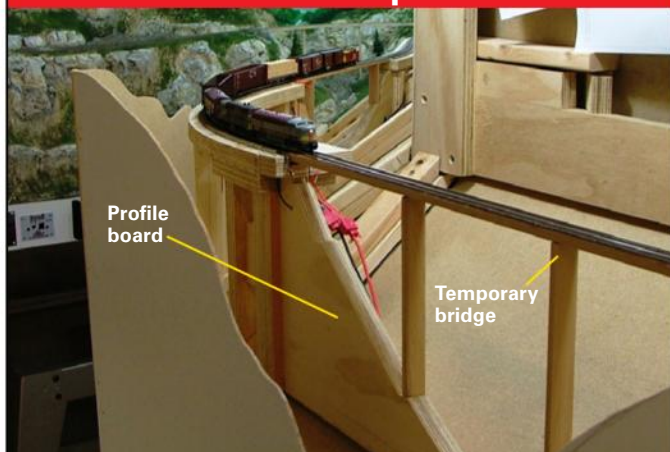


Every span is supported by a pair of abutments or piers, so when you make a lot of bridges, be prepared to make even more abutments and piers. The CP was fond of using locally quarried stone, adding an additional wrinkle to the construction of all these support elements.

I fabricated the assortment of piers, pedestals, and abutments shown in this photograph for the McCormack and Barr Creek bridges from Chooch Enterprises resin castings. The castings were cut and filed to match their prototypes and, where larger structures were required, multiple castings were glued to each other with two-part epoxy. [Always cut and sand resin in a well-ventilated area. It's also a good idea to wear a respirator and eye protection, too. – Ed.]

Where new mortar lines or stone surface details were needed, or where two castings were blended together, I used a motor tool with a small deburring bit to carve the individual stones and mortar lines in short order.

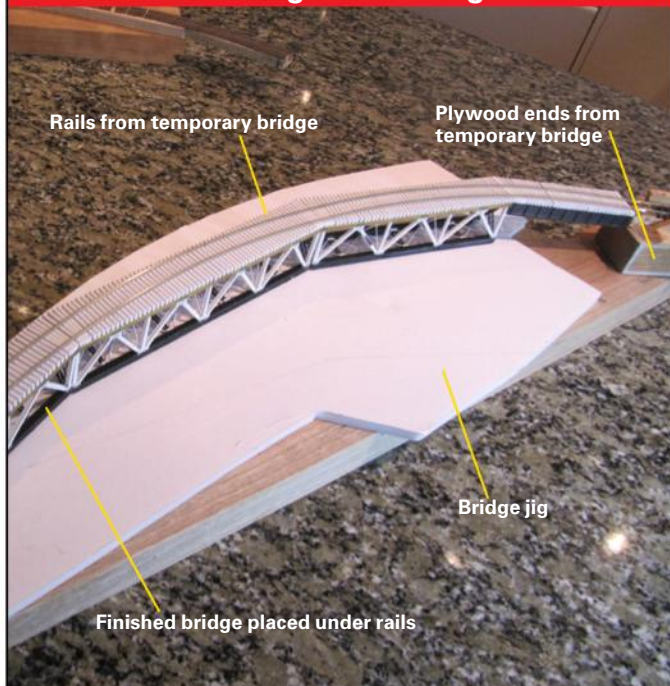
6. The benefits of terrain profile boards



Under many of the large bridges, I built profile boards from plywood when the roadbed was installed. Spanning the proposed bridge distance and accurately cut to follow the terrain in the layout's CAD file, the profile boards provide a known reference surface beneath the track upon which the bridge piers, abutments, and pedestals can rest, as well as establishing the desired scenery contour under the bridges.

Temporary spans were put in place to support the track while the scenery around and under the bridge areas was completed. After years of operations, when the time came to install the finished bridge, small holes were made in the scenery and the bridge's piers and abutments dropped in place on top of the waiting surfaces on these profile boards.


7. Get more mileage from bridge stand-ins



The initial benefit of laying track across a temporary span in advance of a big bridge being finished is obvious: get those trains running! However, there may be additional benefits, such as mocking up different versions of the bridge or even using the track as a jig for construction of the final bridge.

The temporary bridge spans for all the Columbia & Western's large bridges were cut to fit into notches in the permanent roadbed, allowing them to be easily removed.

In the case of the curved McCormack Creek trestle, shown at left, the temporary span was additionally used to create a jig to hold the rails while the final bridge spans were slid underneath. With the temporary bridge surface and ties cut away except for the ends that mate into the layout's roadbed, the jig held the rails at the correct curvature while the final bridge was positioned under them and tacked in place using Pliobond contact adhesive to attach the rails.

Guardrails were also added while the bridge and track were in the jig. The completed bridge was then dropped back between the notched roadbed and above the finished scenery on the layout without any distortion or having to make any adjustments. 

LC2xx series DCC decoder for HO scale



High Performance
High Compatibility
Multi-lighting function output

- Conforms with NMRA specifications and is certified by the NMRA DCC
- DCC standard decoder is suitable size for HO scale locomotives
- Offers 4 to 6 100mA function outputs with short circuit protect
- Includes Back-EMF with client motor control
- Operates on a 28 step adjustable speed table
- Supports long address and bit mode program

www.anemodel.com



CONFORMS TO NMRA STANDARDS

ZYCON MODELS
Limited Run Model



International 7600 Vacuum Truck

NEW 1/87th (HO) Scale!



4 Versions Available

Fully Assembled & Factory Painted

Zycon Models specializes in HO scale heavy equipment replicas and selling brass & diecast models through Ebay. If you have railroad brass models, heavy equipment replicas or are interested in selling an estate collection please contact me.

Dan Goins
Zycon Models
Cell: 214-458-4048

Ebay Seller ID
zyconmodels
Website: www.zyconmodels.com
Email: dgoins187@aol.com



Call **TODAY** to order! 1-800-466-3131

Storage Boxes
Foam Lined
Self Closing
Fully Assembled




<u>HO Scale</u> Holds 16 Cars - \$23.95
<u>N Scale</u> Holds 48 Cars - \$23.95
<u>Tote Bags</u> \$31.95
Plus S&H

AXIAN TECHNOLOGY
623-580-0800
fax: 623-580-8008
21622 N. 14th Ave. • Phoenix, AZ 85027-2806

www.axiantech.com

Patented U.S.A.

CABOOSE HOBBIES
A Real Toot!



Denver • Colorado • U.S.A.

World Famous Since 1938!

.COM

Xuron® – Precision Tools You Can Trust



Made in the USA

Supporting the industry since 1989

Trusted by model railroad enthusiasts worldwide

Purchase from your favorite hobby retailer.

Subscribe to the Xuron Blog to be automatically enrolled in frequent product giveaways.

xuron.me/modelrr

XURON CORP.






STYRENE SHAPES & SHEET

Use the Modeling Materials Preferred By Professionals. Styrene Plastic Shapes and Sheet Assemble Faster, Easier and Stronger Than Wood or Metal.

Visit our Website: www.plastruct.com
Or send \$5.00 for our 144 page, VOL 10 Catalog.

Plastruct

1020 South Wallace Place
Dept. MRR
City of Industry, CA 91748

TCS WOWKits

Everything you need at one low price!

Complete WOWKits are now available for much of the Athearn, Kato, and Atlas HO-Scale lines.



All Inclusive! MSRP \$129.95

WOWSteam

- 5x NEW Chuff sets (9 total)
- 60+ Different Whistles
- Steam Version 4 Now Available
- 45+ Different Bells

Upgrade your WOWSound (Steam or Diesel) decoder to the latest version.

Visit www.TCSDCC.com for more information

BENCHWORK in a HURRY



Use Our Simple Modular System
You Design Any Size Layout
For Any Gauge Track
We do the Woodworking
Easy to Assemble

Sievers BENCHWORK
PO Box 100
Washington Island, WI 54246
920-847-2264

www.sieversbenchwork.com

Railfanning the COLORADO



ROCKIES



Inspired by the Denver & Rio Grande, this HOn3 layout sprawls across five rooms

By Dave Rickaby

Photos by the author

While some model railroaders hew closely to a prototype, and others follow their own freelanced plans, John Mellowes walks a middle path with his HOn3 Rio Grande Summit Line. John's fictional railroad is set in southwest Colorado around 1940. Although John likes the Rio Grande Southern, his layout is primarily based on the operations of the Denver & Rio Grande Western.

John was introduced to model railroading by his dad, who had a large O-27 Lionel layout. When John bought his parents' home in 1976, he started to build his own layout. This layout, and the one his father built in his new home, were open for tours during the National Model Railroad Association's 50th national convention, which was held in Milwaukee in 1985.

A slim mining line

Why narrow gauge? John discovered narrow gauge railroading during several trips to Colorado, where he fell in love with the "chunky" look of the locomotives. John thinks HOn3 is the perfect scale because the equipment looks good on 24"-radius curves, a size that lets him fit a lot of layout into his basement.

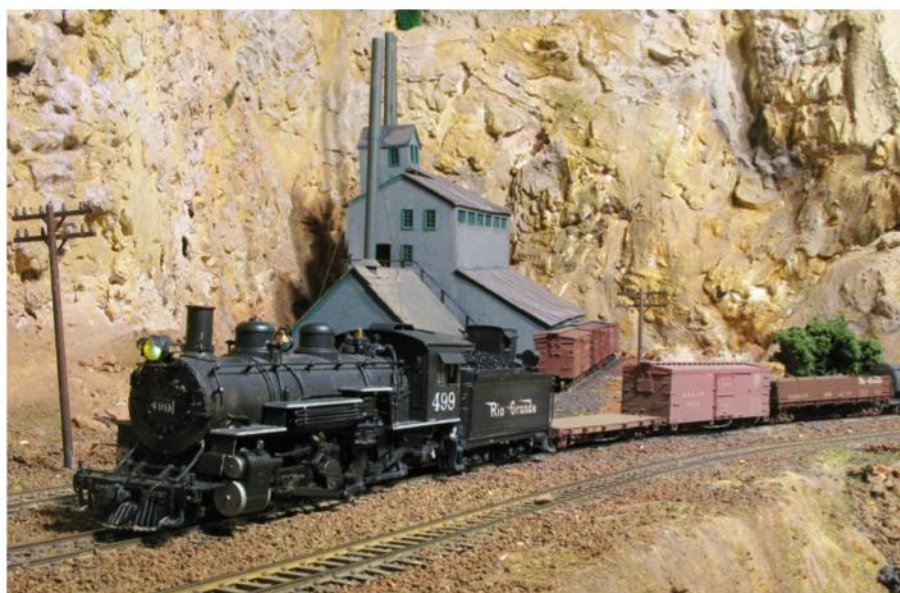
Slow speeds and short trains are dictated by the steep grades. John knew his layout would have to be built in multiple elevations and wanted to avoid multiple decks with helixes. To create his long mainline run, he had to build his tracks clinging to the sides of the mountains and traversing scenes more than once.

John surmises that his line was built to serve the mines on the layout, which produce gold, silver, iron, lead, and vanadium ores, and the communities that grew around them. Other industries served include agriculture, livestock, and small manufacturers.

1. Denver & Rio Grande Western no. 484, a 2-8-2 Mikado, departs Ridgway with the eastbound *San Juan Express* on John Mellowes' HOn3 Rio Grande Summit Line layout. The narrow gauge layout winds through five rooms in John's basement.



2. Mikado no. 494 pulls a westbound stock extra over a trestle near the town of Vanadium. The locomotive is a brass model from Westside Models. The stockcars are by Blackstone Models.



3. A manifest freight passes the ore smelter in Vance. The smelter, like many of the structures on the layout, is scratchbuilt. John's rockwork is plaster cast in rubber molds. He landscaped the layout using the zip-texturing method.

Though the layout doesn't follow a prototype, John named the stations and towns on his model railroad after ones on the RGS, such as Ophir, Placerville, Ridgway, and Rico. He's also scratchbuilt some structures seen on the RGS, such as those in Telluride and Placerville.

Ore trains, livestock extras, and general freight trains continually serve the mountainous communities. Also, since his Colorado is a rugged region with few roads, passenger service is important.

One trip over the line

John's Rio Grande Summit Line makes its headquarters in Alamosa, a dual-gauge terminal that connects with

the standard gauge D&RGW. Heading west, trains pass through Vance, which is home to a large ore smelter. From there, they proceed through a deep canyon and emerge at Rio Grande Junction.

Leaving Rio Grande Junction, the grade stiffens to a 2 percent climb, the maximum on the route. Winding back and forth through the mountains we arrive at Black Mesa, a mere station stop.

The line continues its climb to Summit through several tunnels and across dry washes. Arriving at Summit, trains travel through the snowshed covering the depot and turntable. From there, they can either head down the branch through Keystone to Telluride, or

continue downgrade to San Juan, home of a sawmill and coal mine.

From San Juan, the main continues downgrade to enter the next room, passing through Gato on the way to Rico. Rico is home to a stock pen and stamp mill. Leaving Rico, trains again enter a new room, where we find Placerville. Here are an ore mine, stock pen, and several small industries.

Then it's on to the final room and through the town of Vanadium, which boasts a mine producing the town's namesake ore. Finally, trains arrive at Ridgway, the railroad's western terminus, where the railroad serves two mines, an oil depot, and a cattle pen.

Engine houses are located in most of the large communities, with depots, water, and coaling facilities throughout. It takes a train a full hour in real time to travel the entire route.

Construction

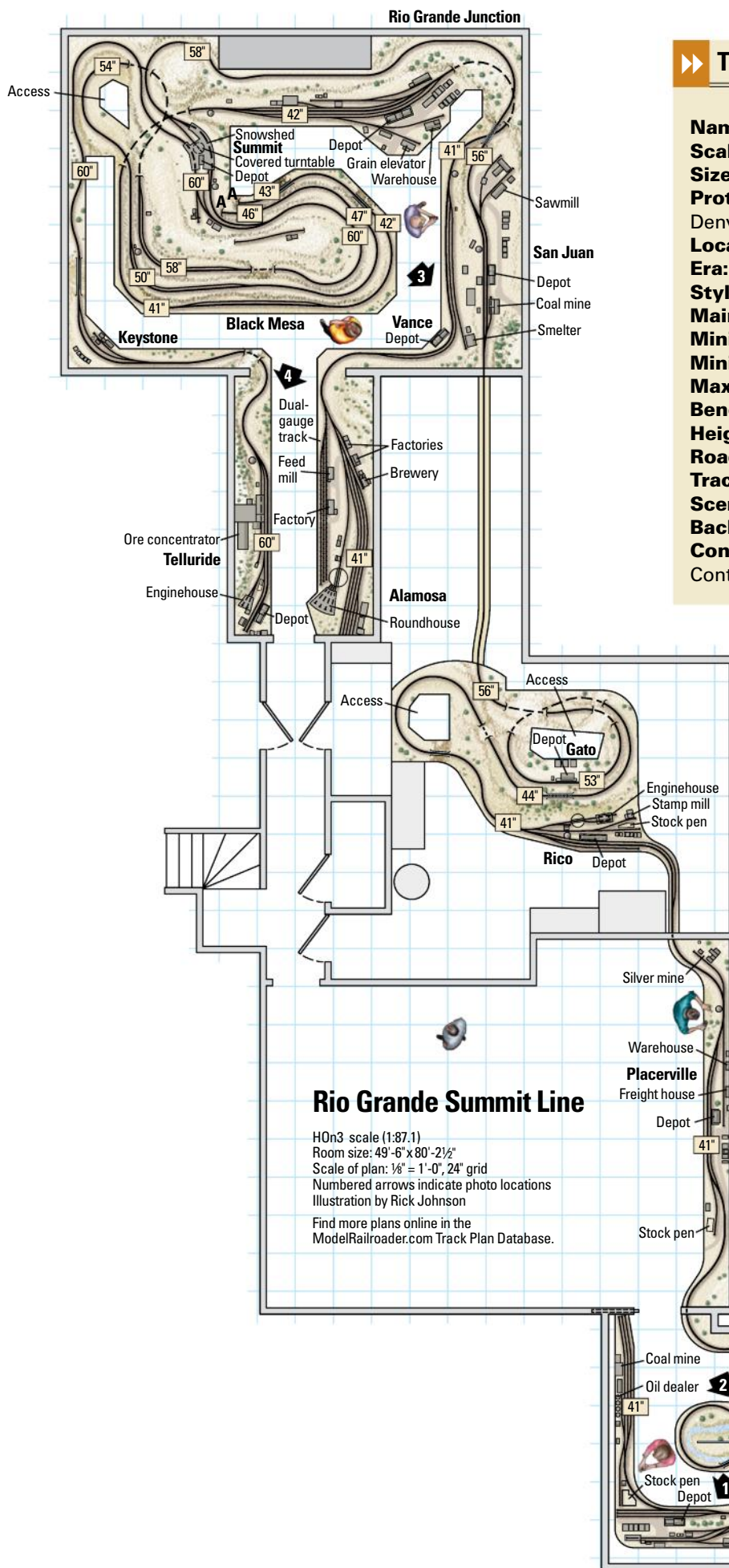
The track is Shinohara code 70 flex-track. John's turnouts are all no. 6. John included dual-gauge track and turnouts in Alamosa, which was prototypical for that town, to demonstrate the difference in size between the standard and narrow gauge equipment.

The layout is built on open-grid benchwork with risers for both the subroadbed and the scenery. The $\frac{3}{4}$ " plywood subroadbed is topped by cork. The benchwork is made from 1 x 6 lumber on most of the layout, the exception being 1 x 4s in the Ridgway room.

To make his landforms, John dipped industrial paper towels in Hydrocal and layered them over a webbing of masking tape and wadded-up newspaper. He topped it with a layer of molding plaster.

A good friend of John's, Brian Holtz [whose Denver & Rio Grande Western layout was featured in the April 1982 issue of *Model Railroader* -Ed.], was instrumental in helping John with his scenery. The rockwork was cast with plaster in rubber molds. John colored the rocks with zip texturing. [Introduced by Linn Westcott in the April 1965 MR, zip texturing involves sprinkling dry pigments onto wet plaster. -Ed.] He also used Woodland Scenics ground foam.

To give the image of forced perspective, John used smaller pine trees in the background. Though he built a few using the bottle-brush method, most of his trees are commercially made. John says that when building a large layout, time is an important consideration. On a layout this size, making every tree by hand would have taken too long.



» The layout at a glance

Name: Rio Grande Summit Line

Scale: HOn3

Size: 49'-6" x 80'-2½"

Prototype: freelanced, inspired by
 Denver & Rio Grande Western

Locale: Southwestern Colorado

Era: 1940

Style: walkaround

Mainline run: 420 feet

Minimum radius: 24"

Minimum turnout: no. 6

Maximum grade: 2 percent

Benchwork: open grid

Height: 42" to 60"

Roadbed: cork

Track: Shinohara code 70

Scenery: hardshell

Backdrop: photo backdrops

Control: NCE Digital Command
 Control



4. Serving the coal and ore industries is the main purpose of John's model railroad. Here D&RGW no. 461, a Blackstone Models Mikado, pulls a string of boxcars past the Telluride ore concentrator. The train will join the main line at Summit.

One of the most interesting structures on the John's layout is at Summit. Based on one that existed in Marshall Pass, John scratchbuilt a snowshed with a station and covered turntable inside it.

All of the wooden trestles are scratch-built and the iron bridges are brass models. The backdrops are from Backdrop Warehouse and Faller. John's layout is lit with incandescent track lighting.

Making it run

When John first built the layout in 1976, he wired it for block control and ran his trains using direct-current throttles from PSI. After a time, he switched to an Model Rectifier Corp. system with a walk-around throttle.

Meet John Mellowes

John was born and raised in Milwaukee and attended Cornell University in New York. After a stint in the U.S. Navy, John joined the family business, Charter Manufacturing, where he served as CEO for 30 years. He lives with his wife, Linda, with whom he raised two sons. John's other hobbies include traveling and golf. He's a member of the National Model Railroad Association, North American Prototype Modelers, and American Association of Private Car Owners, owning four full-sized, restored passenger cars.



In 2011, he started the conversion to Digital Command Control (DCC). As his first test, he wired the Ridgway room for DCC and had decoders installed in two of his locomotives. Conversion went slowly at first, because John was reluctant to install decoders in all of his locomotives himself.

John later converted the rest of his layout to DCC, but since not all of his locomotives had been upgraded, he wired the system through a toggle switch. Flipping the switch could let him run either under DC or DCC.

By 2012, he finished installing SoundTraxx Tsunami sound decoders in all his locomotives. He now operates his NCE DCC system with Pro Cab tethered throttles.

Switching to DCC was a real game-changer for John, allowing him to follow trains around the layout much more easily. He thinks that vigilant maintenance is key to making a DCC layout more reliable, and therefore, more enjoyable.

Most of John's locomotives are brass models from Westside Models, including eight K-36s, six K-37s, and two K-28s. John's three K-27 Mikados are from Blackstone Models.

John finds that every locomotive runs differently, each one having its own "personality." He also has some older, non-operating locomotives he uses for static display purposes on the layout.

All of his current freight cars are from Blackstone, though his original fleet came from Pacific Traction Models. Once his mainstay, these cars are also now used on the layout as static models.

The passenger cars for his two *San Juan Express* sets are brass models from Precision Scale Co. This equipment is

rounded out by two open platform cars from Blackstone.

John has 18 locomotives, 15 passenger cars, and about 120 freight cars. Several of his cabooses have lit marker lights. The lights on these cars operate on track current picked up through the wheels.

Built for railfanning

Although John will run the layout by himself or with a few friends, and has opened the layout for tour groups, he's never held a formal operating session. He first wants to learn more about how real railroads operate.

When he runs the layout it isn't in any set order or sequence, and with very little switching. He built the layout to primarily watch trains run through the scenery as a scale railfan. He plans to join a monthly operating group to experience their layouts and how different types of operation are approached before coming up with an operating scheme for his own railroad.

What John really likes about the hobby is that it fills his need to be creative. He sees it as a challenge to fit a model railroad into a given space.

It's a common saying that a model railroad is never really finished, and John isn't afraid to tear a section out and rebuild it if he thinks he can improve upon what's there now. But overall, John is satisfied with what he's accomplished.

John belongs to the majority of model railroaders who will tell you that model railroading is a journey. It's a fun and challenging hobby, and he knows that when it becomes frustrating, all he has to do is flip the lights off and walk upstairs. When the sun rises tomorrow, his quest will continue. **MR**

Squeezing sound into an SW1 switcher



A pair of Walthers SW1 switchers picks its way into Charlottesville Yard with a string of cars on Larry Puckett's HO scale Piedmont Southern layout. This month, Larry explains how he added Digital Command Control and sound to these compact models.

Back in 1993 when Walthers first released its SW1 switcher, Digital Command Control (DCC) with sound wasn't an option. Since then, squeezing large sound decoders and speakers into the locomotive just didn't seem realistic. However, recent advances in speaker and decoder miniaturization, along with reader requests, convinced me it was time to give it a try.

Just what made it possible? First came sugar cube speakers. These little devices range in size from about 8mm x 12mm to 13mm x 18mm and larger, and produce excellent sound for their size. Then last year, SoundTraxx released the Econami ECO-100 micro sound decoder, which is about the same size as the N scale decoder I'd previously used.

I initially planned to install an ECO-100 decoder in my vintage 1993 SW1. However, after a few quick measurements, I realized my only option would be to install the decoder in the cab. The Mashima flat can motor Walthers used in the model was just too tall for much of anything else to fit under the hood. And although I might've been able to fit a

sugar cube speaker in the cab as well, it likely would've been a troublesome installation, so I started to look for options.

I discovered in the 2014 release of the SW1, Walthers used a much smaller motor, which also allowed much shorter truck gear towers. I quickly ordered a newer model, and after it arrived I found that both an ECO-100 and sugar cube speaker would easily fit under the hood.

At that point I had both the old and the new models, which left me with the conundrum of what to do with the old SW1. I finally hit upon a solution. The Southern Ry. had several SW1 locomotives with multiple-unit capability, so I decided to operate these two models that way. Let's go through the steps of installing decoders and speakers in each locomotive. Next month, I'll speed-match and consist them for back-to-back operation.

On the old model, my first move was to cut a chunk out of the fuel tank big enough to fit the speaker facing down toward the track. I used a

13mm x 18mm TDS SuperSonic speaker from Tony's Train Exchange, securing it in the opening with double-stick foam tape (see **fig. 1** on the next page).

Because the TDS speaker is recessed into its enclosure, it has a slightly shorter profile than some of the other 13mm x 18mm sugar cube speakers I've used. I soldered two wires to the contacts on the speaker and ran them up the end of the motor, securing them with cyanoacrylate adhesive (CA).

For the decoder, I selected a TCS Z2, a Z scale decoder about the size of my little fingernail, yet rated at 1 amp. No, it doesn't have sound, but we'll get to that in a bit.

I soldered the orange and gray wires to the motor contacts and the red and black wires to the right and left pickup wires, protecting the joints with heat-shrink tubing. A small square of double-stick foam tape holds the little decoder firmly in place on top of the rear truck (see **fig. 2**).

Since I was rewiring the model, I replaced the old lightbulbs with more efficient and longer-lasting light-emitting diodes (LEDs). However, instead of my usual 3 mm golden-white LEDs, I tried a new product, surface mount LEDs from Ngeineering (www.Ngeineering.com).

These neat little devices come in bright white (N1021) and golden incandescent (N1022C) versions, plus there are even smaller micro and nano versions for tighter applications. For my HO scale installation, I ordered the company's standard size golden incandescent version (see **fig. 3**).

The trick to soldering wires to miniature components like these is to find a way to firmly hold them during the process. My solution was to attach a piece of double-stick tape to a flat surface, then place the LED on it bottom-side-up to hold it.

The application note on the Ngeineering website suggests laying the wire across the solder pad to the LED, soldering it in place, then bending it up. After attaching the wires, I glued the LEDs to the rear of the lenses using CA and held the wires in place with Kapton tape (see **fig. 4** on page 59).

To drop the current down to an acceptable level for the LEDs, I needed

to add a resistor on the negative leads. Using the calculators on the Ngeengineering website, it said I only needed a 440Ω, ½ watt resistor. However, I found this far too bright, and doubled the resistance using a 1KΩ, ½ watt surface mount resistor (NC1001), shown in **fig. 3**. This combination not only gives me more than enough brightness, it means the LEDs will last the rest of my lifetime and the resistor will not even feel warm when in use.

Since I was experimenting with surface mount devices, I decided to use another Ngeengineering product. Along with a handful of 1KΩ, ½ watt surface mount resistors, I ordered mounting boards (N8106). The latter are small circuit boards for mounting the resistors and attaching wires, also seen in **fig. 3**.

I stabilized the board using the double-stick tape trick and attached the surface-mount resistors with a tiny drop of CA, then soldered the resistors to the mounting pads. Finally, I attached the white and yellow decoder wires to the forward and rear light negative wires by connecting them to the resistor mounting boards and attached these to the inside of the shell, shown in **fig. 4** on the next page. I then soldered the blue wire to the two positive LED wires.

Next, I moved to the 2014 model. To prevent mixups, I marked the various wires before removing the existing circuit board. The wires are all either red or black, and some on the trucks are reversed, so you can't go by color alone. Pay special attention to the polarity of the wires that go to the LED headlights.

After removing the circuit board, I installed the ECO-100 decoder on top of the motor using double-stick foam tape (see **fig. 5** on the next page). I then connected the orange and gray motor leads, and the red and black track pickup wires. As with the old SW1, I made up the resistor boards and soldered the white and yellow wires to them, then connected the negative wires from the front and rear LEDs, respectively, followed by connecting the positive leads to the blue wire.

Next, I connected the purple speaker wires to the solder tabs on the speaker, which I placed over the front truck. I stabilized the speaker by inserting a paper shim between it and the frame. With all the wires connected, I gave both

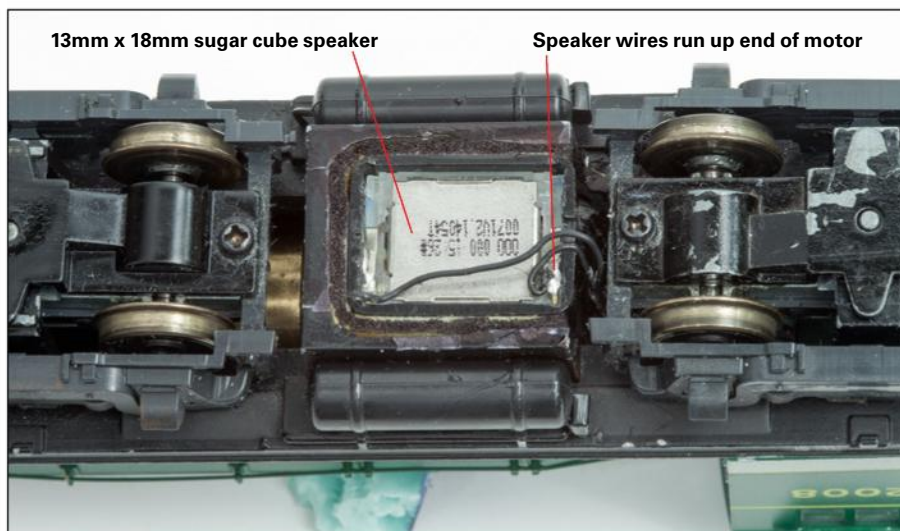


Fig. 1 With a little help from his friend. Larry's friend Doug Miller milled a space in the fuel tank of the early SW1 big enough for a small speaker.

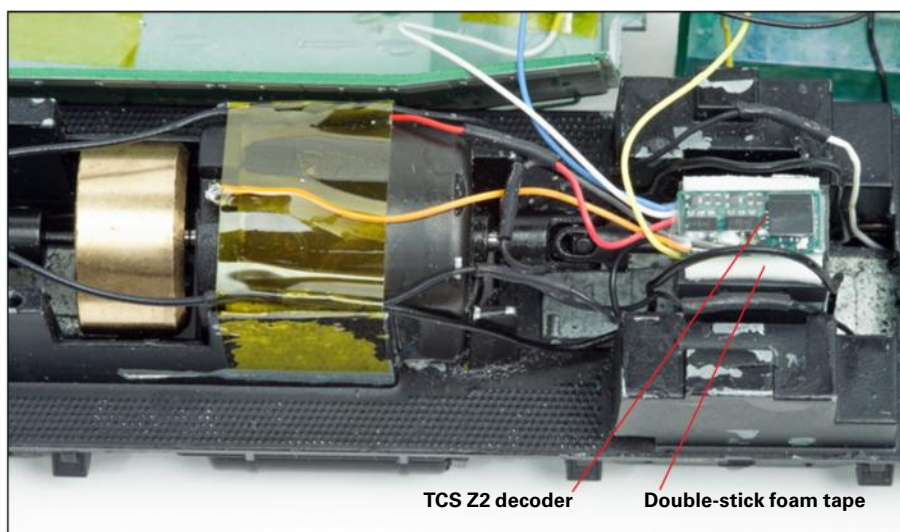


Fig. 2 Every little thing. A tiny TCS Z2 decoder powers the Mashima can motor and lights in the early Walther's SW1 switcher.

locomotives a test run to make sure they operated in the correct direction and the lights responded properly. I also programmed the addresses to match the numbers on the models.

As you probably noticed, both locomotive models have speakers, but only one has a sound decoder. Since these locomotives are to be operated as a pair in a consist, I powered the speakers in both with the output from just the one ECO-100 decoder. In the May 2016 DCC Corner column I mentioned that you can operate two speakers from one decoder, although each will receive only half the wattage.

You can use either series or parallel wiring, and in this case I wired them in

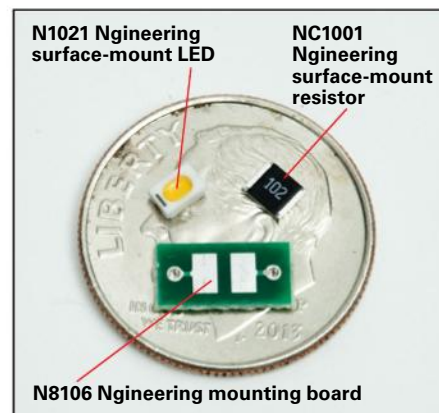


Fig. 3 Here comes the sun. These surface-mount components make installing the lights much easier and produce less heat than incandescent bulbs and full-sized resistors.

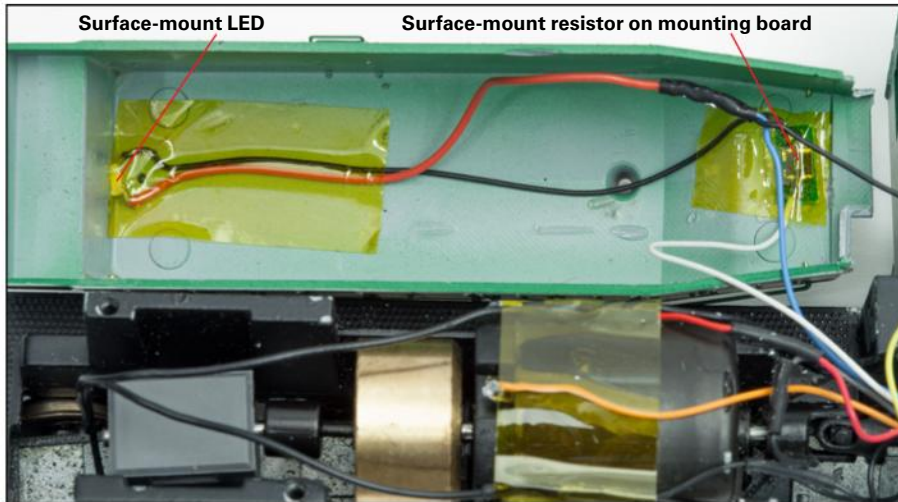


Fig. 4 We can work it out. The surface-mount resistor circuit boards are attached to the inside of the shell with Kapton tape. Larry cemented the LED to the back of the headlight lens, then used Kapton tape to stabilize the wires.

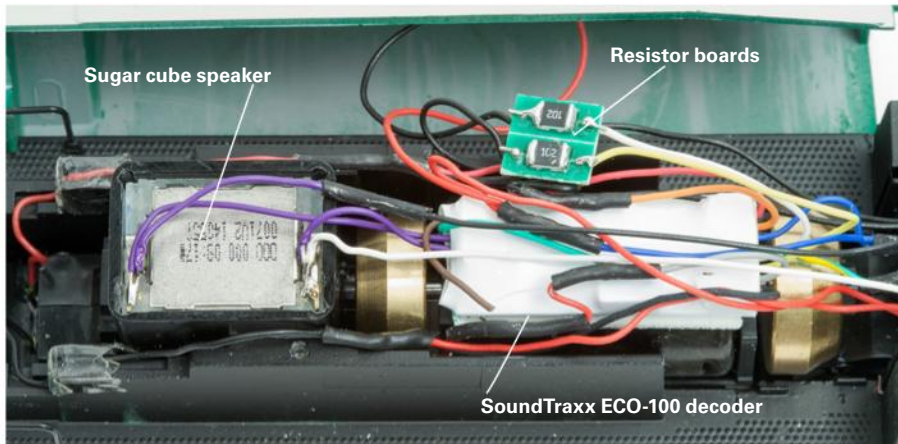


Fig. 5 And your bird can sing. Larry installed an ECO-100 decoder in the new SW1 switcher to power it and to provide sound in both locomotives. In this case he left the surface mount resistors sitting on top of the decoder.

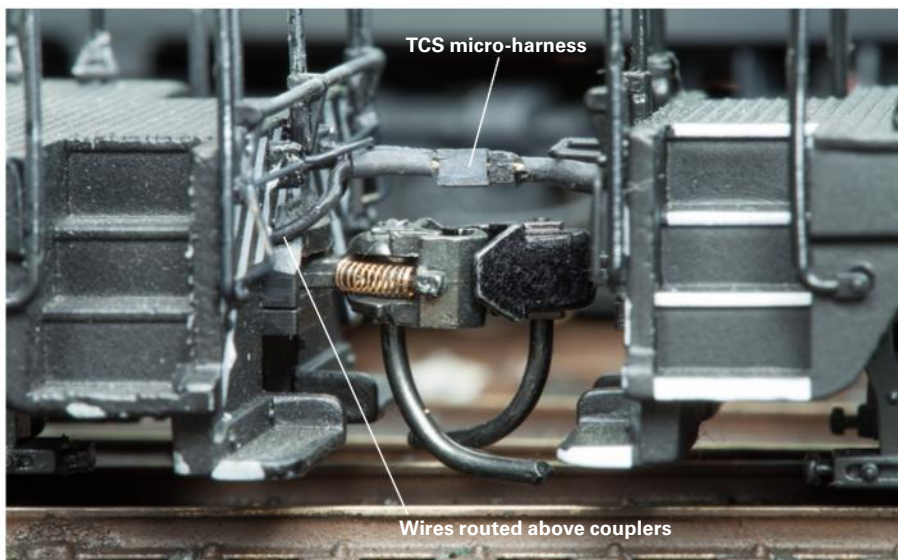


Fig. 6 Come together. A TCS two-wire harness provides the electrical connection for sound between the locomotives.

parallel. This cut the speakers' 8Ω impedance in half. I chose this method so that if I ever separate the locomotives, the sound-decoder equipped model won't have to be rewired, as would be the case if the speakers were wired in series. Also, SoundTraxx recommends the parallel configuration in its literature.


Operating both speakers off one decoder required running a pair of wires between the two locomotives. I used a TCS micro harness for this job so I could quickly and easily separate the locomotives for maintenance and programming.

I soldered the free ends of the harness in the new model to the tabs on the speaker along with the wires from the decoder. In the older model, I attached the two free ends of the harness to the wires I had soldered to the speaker contacts earlier.

The TCS harness has a black and a white wire, so I colored the first inch or so next to the connector black using a felt tip marker to camouflage it a bit. I then shaved off a thin sliver of plastic from the top edges of the coupler mounting boxes and slid the harness wires in alongside them.

This arrangement placed the harness wires and connectors on top of the couplers so they don't get fouled on the coupler trip pins (see **fig. 6**). With everything installed, I replaced the shells on the chassis and moved to the programming track.

Programming these disparately different decoders so the models operate essentially as a single unit required some pretty fancy maneuvering that would take more space than I have room for this month. Next month, I'll go over how to speed-match the locomotives so they'll operate at the same speeds throughout the throttle range. I'll use three-step speed curves, along with forward and reverse trim settings.

Once that's done I'll set the decoders up so that the headlights are bright when moving forward and dimmed in reverse. I'll also use advanced consist to turn off the rear lights when in a consist, program the advanced consist address, and add consist acceleration and deceleration rates. In the meantime, visit my website (www.dccguy.com) for more on this project. 



EMD E9A

EMD E8Bm



Pullman-Standard 56-seat coach

Pullman-Standard Strata-Dome coach



Budd Strata-Dome sleeper

Budd 16-4 sleeper

Strata-Domes and sleek E units highlight Walthers HO scale *Capitol Limited*

The Baltimore & Ohio RR's flagship train, the *Capitol Limited*, comes to life in HO scale as Walthers finishes up its accurately detailed model of "The Cap" as it appeared in the late 1950s. The series features newly tooled B&O passenger cars and prototype-specific Electro-Motive E-units that sped the train between Chicago and Washington, D.C. Both the E9A and E8Bm units are powered and available with SoundTraxx Tsunami decoders for sound effects on Digital Command Control (DCC) and direct-current (DC) layouts.

The prototype. Inaugurated in 1923, the *Capitol Limited* was the signature train of the Baltimore & Ohio RR for 48 years. After World War II and into the 1950s, B&O retired much of its heavy-weight fleet in favor of new lightweight, streamlined equipment. The Walthers HO version models the *Capitol Limited* consist after it was combined with *The Columbian* in 1958.

In the 1950s, the B&O was the only eastern railroad to offer dome-car service, and a Strata-Dome sleeper served

on the *Capitol Limited* of this era. In addition to a Slumbercoach and other cars, The Cap also gained a Strata-Dome coach from *The Columbian*. The dome coach was based on a Pullman-Standard design from General Motors' 1947 *Train of Tomorrow*. The domes of both cars were 7 inches lower than that of similar cars found on Western roads, such as the Union Pacific, because of the low clearances along the B&O main line.

Some of the cars, including the Budd-built Strata-Dome sleeper and the Pullman-built blunt-end observation car, were purchased new from the Chesapeake & Ohio after that company's *Chessie* streamliner train was cancelled. The twin-unit diner was also originally built for C&O, but was soon sold to the New York Central. In turn, the NYC sold the cars to B&O. A comprehensive history of the postwar *Capitol Limited* can be found in *Baltimore & Ohio Passenger Service, 1945-1971 – Vol. 2: The Route of the Capitol Limited* by Harry Stegmaier (TLC Publishing).

The B&O ended its passenger service with the advent of Amtrak in 1971. How-

ever, in 1981, Amtrak introduced its own Chicago-to-Washington, D.C., *Capitol Limited* that still runs today.

The models. The HO scale 85-foot cars included in the Walthers series are a Pullman-Standard baggage-dormitory-coffee shop-lounge; a Budd 24 single-, 8 double-bedroom Slumbercoach; a PS *City* series 56-seat coach; a PS Strata-Dome 42-seat coach; a PS kitchen-dormitory; a PS 56-seat diner; a Budd Strata-Dome 5-roomette, 1-bedroom, 3-drawing room sleeper; a Budd 16-duplex roomette, 4-bedroom sleeper; a PS 10-roomette, 6-bedroom sleeper; and a PS 5-bedroom, buffet-lounge-observation car.

With the exception of the 10-6 sleeper and the Slumbercoach, all the cars are newly tooled. The cars' dimensions match the prototype inside and out, as compared to prototype drawings and interior diagrams in *The Pullman Standard Library* and *The Passenger Car Library* (RPC Publications, Inc.).

The paint and lettering on each car is accurate per prototype photos. The blue,

►► More reviews & videos

At www.ModelRailroader.com

subscribers can read more than 750 previously published reviews and watch more than 150 exclusive product demo videos.

Dana Kawala



PS baggage-dormitory-coffee shop-lounge

Budd Slumbercoach sleeper



Pullman-Standard kitchen-dormitory

Pullman-Standard 56-seat diner



Pullman-Standard 10-6 sleeper

Pullman-Standard 5-bedroom buffet lounge observation car

gray, and gold colors used are consistent throughout the set. The plated finish on the cars with fluted sides does a credible job simulating polished stainless steel. Each car includes car name and number water-slide decals.

The PS blunt-end observation car includes an accurate replica of the *Capitol Limited* tailsign flanked by two separately applied round B&O Capitol Dome heralds. The car also has non-functioning marker lights.

The plastic models follow the same modular construction as other Walther's HO passenger cars, including the kitchen and diner cars reviewed in our October 2015 issue. The walls, ends, and roof are separate, with a one-piece molded interior and some separate wall partitions.

For adding figures, the roofs are removable by using a chisel blade in a hobby knife to disengage the locking tabs along one side. The instruction sheet indicates the location of the tabs.

For me, the Strata-Dome cars are the standouts of The Cap. As with the other cars in the series, all the handrails are factory applied. The domes also include non-functioning models of the roof-mounted searchlights that illuminated the landscape at night, as well as the ice-breakers used to protect the domes under low-clearance tunnels and bridges.

Each car features all-wheel track power pickup for the addition of interior lighting. Walther's sells interior lighting kits for \$15.95 each. Steel weights between the chassis and interior give the cars heft and complete the lighting circuit.

On straight track the diaphragms almost touch. The cars rolled easily through no. 6 turnouts and 24" radius curves. User-installed coupler draft-gear boxes allow the cars to handle 22" radius curves, but this also increases the distance between the cars.

Last of the E units. An HO scale EMD E9A leads the Walther's *Capitol Limited*. The prototype for our review sample is one of four E9As delivered to the B&O in 1955. The last of EMD's successful E-units, the 2,400 hp E9A had two 567C diesel engines.

Visually, the prototype E9A is nearly identical to its predecessor, the E8A. The main spotting feature on the E9A is a flush-fitting headlight with a gasket around the headlight case. The Walther's model reproduces this feature.

B&O rostered six E8Bms, as well as 5 E8Am units, that were built using generators and other parts from traded-in, 1937-vintage EA diesels. These locomotives were derated to 2,000 hp compared to 2,250 hp for a new E8.



The observation car includes an accurate tailsign and heralds. The rear light is non-functioning.

Both the Walther's E9A and E8Bm match prototype drawings in *The Model Railroader Cyclopedica: Vol 2, Diesel Locomotives* (Kalmbach Publishing Co., out of print). Both models are specifically detailed to accurately match their B&O prototypes. These most prominent of these details include flush-mounted number boards and the raised B&O herald on the nose door of the E9A.



The ends of the Strata-Dome cars include separate icebreaker details and non-functioning spotlights.

Many separately applied details complement the well-defined molded detail of the plastic body shell, including wire grab irons, Nathan M5 airhorn, and etched-metal side air intake grills. The plastic truck sideframes feature sharp detail, including the brake cylinders, journal covers, and a General Steel Castings builder's mark molded in. The E9A unit's front truck correctly has an automatic train stop (ATS) pickup shoe on the engineer's side.

Both locomotives are accurately painted, according to prototype photos. The colors match those found on the passenger cars. Lettering is clearly printed, including the PE-6 and PE-4X classification, under the road number, on the E9A and E8Bm respectively.

Performance. Removing the couplers on either E unit allowed me to lift the plastic body shell off the die-cast metal chassis. The models feature the same upgraded mechanism as other recent Walthers E units. All the metal wheels pick up track power and all the axles are powered.

The A-B pair can easily handle a typical *Capitol Limited* consist. Our review sample hauled our 10-car test train up a 3 percent grade and negotiated number 6 turnouts through a yard ladder. Walthers also sells an additional A-B set and single A unit.

Now on ModelRailroader.com

Subscribers can watch the *Capitol Limited* in action. Click on Videos at www.ModelRailroader.com.

During speed tests in DC and DCC, both the A and B unit accelerated smoothly, as shown in the charts at right. The model's top speed matches one of the prototype's gear ratios. However, our B unit accelerated about 5 scale mph faster than our A unit during DCC testing. I easily speed-matched the two units by lowering the forward and reverse trim configuration variables (CVs 66 and 95) for the B unit. Fine-tuning the decoder's motor control, including setting up speed tables, and many other topics are covered in the free online user's manuals available at www.SoundTraxx.com.

Both units are factory-programmed to address 3, but I easily changed their addresses to their locomotive numbers, then advance consisted them under a single address. With both locomotives m.u.'d, I then programmed CVs 21 and 22 so that I had control of the functions under the consist address.

Two round 28mm speakers mounted on the chassis provide clear sound even at the maximum volume setting. I could also independently set the volume level for each effect.

The Tsunami accurately reproduced the sounds of the prototype, from the staggered startup of twin 567 diesel engines to the melodious blast of the Nathan M5 air horn. Other effects include a coupler clank and dynamic brake fan. I appreciated that Walthers had the Tsunami train brake feature set up by default. In addition to triggering a brake squeal/release sound, pressing F9 would actually apply or release the brake independently from the throttle.

Function buttons also control the A unit's headlight, headlight dimmer, and number boards. All lighting is provided by light-emitting diodes (LEDs).

When operated on a DC layout, the locomotives' effects are mostly automatic. The engine rpm sounds rev up or down with the throttle setting. A forward horn signal (two toots) or reverse signal (three toots) sounds before the locomotive moves. The bell rings when the locomotive moves under 20 scale mph. Unfortunately, the sound is interrupted whenever the direction button is switched. Using an analog sound controller, such as an MRC Tech 6, would provide more function control and programming options for DC users.

The rumble of the 567 diesel engines brought a smile to my face as I ran the locomotive on our DCC equipped

▶ Walthers Capitol Limited

Price: DCC sound equipped locomotives: \$569.98 (E9A/E8Bm set), \$299.98 (E9A unit only). DC, no sound locomotives: \$369.98 (E9A/E8Bm set), \$199.98 (E9A unit only). Multiple road numbers available. Passenger cars: \$69.98 to 79.98 each.

Manufacturer

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

Era: 1958 to 1965 train consist

E-unit features

- All-wheel drive and pickup
- Constant LED lighting
- Die-cast metal chassis
- Five-pole skew-wound motor with dual brass flywheels
- Metal Proto-Max knuckle couplers at correct height
- Painted crew figures in cab
- Scale 36" metal wheels in gauge
- Weight: 19 ounces

Car features

- Body-mounted Proto-Max couplers at correct height
- Minimum radius: 24" (22" with optional draft gear)
- Scale 36" metal wheels in gauge
- Weight: 7 ounces, matches NMRA RP-20.1 (The baggage-dorm-coffee shop-lounge and 56-seat coach are .5 ounce too light and the Strata-Dome sleeper is .5 ounce too heavy)

Walthers HO E8/E9 (single unit)

Drawbar pull		2.2 ounces	
		15 HO scale passenger cars	
Scale speed (DC)		Scale speed (DCC)	
Volts	Scale mph	Speed step	Scale mph
7.75 (start)	6	1	3
9	38	7	24
10	58	14	48
12	85	28	85

layout. For many of us, this HO scale *Capitol Limited* is the closest we'll get to being trackside as a B&O Strata-Dome Dieseliner speeds by. Walthers got the details right for this iconic train. – Dana Kawala, senior editor



New handrails and DCC sound on Rivarossi U28C

The 2,800-horsepower General Electric U28C was a transitional locomotive. As such, it shared components with its predecessor U25C in its early production, and its successor U30C in late production. Rivarossi is taking advantage of this circumstance to offer an early production U28C based on its previous U25C.

Dimensions matched published figures in the 1966 *Car and Locomotive Cyclopedia* (Simmons-Boardman) for a U25C. Comparing the new U28C with Rivarossi's U25C, the only detail difference is a change in handrails. The newer model sports flexible engineering plastic parts in place of the etched-metal railings and stanchions of the earlier model. The U25C carbody and detailing is correct for the NP and Burlington units that later became BN property.

The plastic handrails are finely molded to scale dimensions and are securely attached to the walkways. The walkways are new castings as well, to accommodate the new handrails and their prototypical mountings. The mechanism was unchanged from the earlier U25C release. We reviewed that locomotive in the February 2015 *Model Railroader*.

Our Rivarossi U28C was equipped with an ESU LokSound Select dual-mode sound decoder. Using a direct-current (DC) power pack, engine start-up sounds commenced at 6V, and the locomotive started moving at 7V. Using a Bachrus Model Train Speedometer, I measured a low speed of .2 scale mph.

On our Digital Command Control (DCC) test track, the U28C started moving in speed step 1 at .2 scale mph, reaching a prototypical top speed of 72 scale mph in speed step 28.

▶▶ Rivarossi U28C

Price: \$299.99, DCC and sound equipped; \$219.99, DCC-ready

Manufacturer

Rivarossi
Distributed by Hornby America
3900 C-2 Industry Drive East
Fife, WA 98424
www.hornbyamerica.com

Era: 1966-1981 as decorated

Roadnames: Burlington Northern, Chicago, Burlington & Quincy, Northern Pacific

Features

- Die-cast metal chassis
- Five-pole can motor with flywheels
- LokSound Select decoder
- Turned metal wheels with NMRA RP-25 profile, in gauge
- Weight: 1 pound, 4.1 ounces

HO scale U28C

Drawbar pull		4 ounces	
		56 HO scale freight cars	
Scale speed (DC)		Scale speed (DCC)	
Volts	Scale mph	Speed step	Scale mph
7	.2	1	.2
9	12	7	16
10	25	14	43
12	72	28	72

With an excellent sound decoder, Rivarossi's well detailed U28C advances another step with its finely molded handrails. Subscribers can watch a video of the U28C at ModelRailroader.com. — Eric White, associate editor

SHOWCASE-EXPRESS
Wall to Wall Expandable Display Case
Case Sizes Available: Z, N, HO, S, O, G #1 & Standard

HO Gauge Shown

Lighting Kits & Backgrounds Available

Join Top to Bottom or End to End

1-866-464-5535

WWW.SHOWCASE-EXPRESS.COM

UP M-10002

HO Scale

The Coach Yard

Committed to Excellence

www.thecoachyard.com

KALMBACH
HOBBYSTORE

Find More of What You're Looking For

Shop for books, DVDs, downloads, gear and other products related to your favorite hobby.

Visit
KalmbachHobbyStore.com

P27901

Model Rectifier's Light Genie makes programmable lighting effects easy



▶ Light Genie lighting controller

Price: \$49.98

Manufacturer

Model Rectifier Corp.
80 Newfield Ave.
Edison, NJ 08837
www.modelrectifier.com

Features

- AAA batteries included
- Controller board dimensions: 1" x 2 1/2" x 3/8"
- 2.4 GHz radio remote works through walls and benchwork

Now on ModelRailroader.com

Visit our web site to watch a video demo of the MRC Light Genie.

Adding special lighting effects like flashing signals, flickering gas lamps, warning strobes, and rotating beacons to your model railroad has never been easier, thanks to Model Rectifier Corp.'s new Light Genie. The compact receiver can control 12 light outputs, each of which can power multiple bulbs or light-emitting diodes (LEDs), enough to light a small town. The system is controlled with a 2.4GHz hand-held remote that works through walls and benchwork, at a range of up to 90 feet.

The guts. The Light Genie consists of two main components, the receiver (a printed-circuit board the size of a pack of gum) and a remote control. Also included are wiring harnesses, resistors for use with lightbulbs and LEDs, batteries for the remote, mounting screws for the board, and self-stick Velcro for attaching the remote to your layout's fascia. The system will work with almost any manufacturer's light fixtures of any scale, including MRC's own.

Five sockets on the board accept plugs on the wiring harnesses. Each corresponds to a lighting zone. Three zones have wires to drive two outputs each, for such applications as basic structure lighting or alternately blinking lights on

a police car. Two have three outputs each, which are suited for more complex lighting effects like three-color traffic signals or the chase lights on a theater marquee.

You'll notice I'm saying "outputs" instead of "light-bulbs" or "LEDs." That's because each output can handle multiple lights, if wired in series (the instructions warn against wiring lights in parallel).

The remote, about the size of a garage-door opener, has eight buttons. Buttons 1 through 5 turn each lighting zone on or off; button 6 is the master power button. (A less ambiguous label might be helpful for infrequent operators.) Buttons labeled with up and down arrows control brightness as well as accessing programming functions.

Each remote is bound to its own receiver, so multiple Light Genies can be used on one layout without interference.

Special effects. The value of the Light Genie lies in its 20 available lighting effects programmed into the receiver board. With a few keypresses, a connected light can be made to flash like an



Light Genie receiver



Light Genie remote control

arc welder, blink like a strobe, flicker like a gas lamp, even build and fade like a lighthouse beacon.

The speed of the effects can be controlled independently for each zone, so if you have multiple strobes, they won't all flash at the same tempo.

One of the coolest applications is traffic light sequencing, in which two sets of traffic signals can be synched to show red in one direction while cross traffic has the green.

Although a flashing grade crossing signal is one of the suggested applications for the Light Genie, the receiver board has no provision for input from a track occupancy detection circuit. The flashers would have to be turned on and off manually.

Modelers wanting complex lighting effects like flashing police-car lights or flickering campfires on their layouts used to have to buy separate controller circuits for each type of light, or design and wire their own. Thanks to MRC, your wish is the Light Genie's command.
—Steven Otte, associate editor



EVERYTHING IS BETTER WITH **ANSWERS** FROM VIDEO PLUS



In Ask MRVP, viewers get answers from host David Popp and other experts for *all* types of questions. From track and wiring, to structures and scenery, to locomotives and rolling stock maintenance, you'll get answers and demonstrations that will help you put your layout back on track! With as many as 10 questions addressed in each episode, you're sure to discover something new each time!

 **Subscribe now at MRVideoPlus.com/intro**

Original programming | Interactive viewing experience | Non-stop model railroading entertainment

PRODUCTREVIEWS

QUICKLOOK

Atlas N scale National Steel Car 50-foot plug-door boxcar

Price: \$22.95 (undecorated, \$18.95)

Manufacturer

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

Era: 1975 to present

Road names: Canadian National, British Columbia Ry., and Grand Trunk Western. Four road numbers per scheme; also available undecorated (5,111- and 5,277-cubic-foot capacity).

Comments: Following the HO scale version, Atlas has released its National Steel Car 50-foot plug-door boxcar in N scale. The model has prototype-specific ends (nine or 10 corrugations), doors (9- or 10-foot), side sills (deep or shallow), and trucks (70- or 100-ton).

The Atlas model is based on a car built by National Steel Car between 1975 and 1980. More than 1,000 of the 50'-6" single-plug-door cars were built. The 100-ton cars were used in paper

service. Grand Trunk Western used 70-ton cars in food service.

The one-piece plastic body has molded ladders, door hardware, and steps. The brake wheel and see-through crossover platforms are separately applied. The underbody is separate with molded details.

A body bolster and draft-gear box assembly fits over the truck boss. Simulated cushioned draft gear boxes that more accurately model the prototype are included.

Straight from the box, the distance over the strikers is a scale 52'-3". Installing the cushioned draft gear brings the distance to a scale 55'-9", spot on for this car.

Our sample is decorated as CNIS no. 413020 (the IS stands for International Service). All but the smallest lettering is legible under magnification.

The model's dimensions closely follow data published in the July 1985 *Official Railway Equipment Register*.



The lettering placement matches prototype photos I found online.

Canada is a bilingual country, and Atlas correctly lettered the car CANADIAN NATIONAL on one side and CANADIEN NATIONAL on the other.

Most of the model's weight (1.2 ounces) comes from a piece of steel screw-mounted to the underbody from the inside. The car is properly weighted per National Model Railroad Association recommended practice 20.1. The metal wheelsets are correctly gauged. The body-mounted Accumate couplers are at the correct height.

Atlas has done a fine job on this Canadian-style 50-foot plug-door boxcar. Additional road names were announced in March and are scheduled for release later this year. – *Cody Grivno, associate editor*

QUICKLOOK

Atlas Trainman O scale 60-foot observation car

Price: \$114.95

Manufacturer

Atlas O
378 Florence Ave.
Hillside, NJ 07205
www.atlaso.com

Era: 1929 to mid-1970s

Road names: New Jersey Department of Transportation; Atchison, Topeka & Santa Fe; Chesapeake & Ohio; Chicago & North Western; Denver & Rio Grande Western; Long Island Rail Road; and New York, New Haven & Hartford. Two car numbers or names per scheme; also available unlettered (black or black and green).

Comments: A 60-foot, four-axle heavyweight observation car is the latest addition to the Atlas O Trainman line. The ready-to-run model has a one-piece injection-molded plastic body with a separate wall on the observation end, a plastic underbody with molded details, and factory-

installed wire grab irons. Other features include sprung, die-cast metal trucks; rubber diaphragms; and interior lighting.

The model is based on the Jersey Central Lines observation car *De Vico*. The prototype was used on the road's passenger train, *The Blue Comet*, that operated between Jersey City and Atlantic City, N.J. In later years, the car became New Jersey Transit car no. 1178, decorated in the scheme shown on our sample.

The car has a tan injection-molded plastic interior attached to the floor with screws. Brass contacts on the trucks pick up track power for the interior lighting. The wires are well concealed between the plastic interior and underbody.

The model's paint is smoothly applied with sharp color separation, and the printing is legible. The lettering placement matches a 1976 proto-



type photo in *CNJ/LV Color Guide to Freight and Passenger Equipment* by Craig T. Bossler (Morning Sun Books Inc., 1994).

The car weighs 20 ounces, which is correct per National Model Railroad Association recommended practice 20.1. The scale 36" metal wheelsets are correctly gauged. The couplers are mounted at the proper height per NMRA standards. The 60-foot observation car is a good complement to the 60-foot coach, combine, railway post office, and baggage cars already in the Atlas O Trainman line. Like those models, this heavyweight observation car can handle a tight 36" radius curve making it a suitable passenger car for most O scale layouts. – *C.G.*

ON OPERATION

Implementing Rule 99

Rule 99 speaks with ponderous weight to train crews. Its most important instruction reads, “When a train stops under circumstances in which it may be overtaken by another train, or when other conditions require flag protection, a member of the crew must go out immediately a sufficient distance to ensure full protection.”

Full protection meant saving the rear-end crew the sight of a headlight suddenly splitting their markers and burying itself two cars deep in their train. This made most crews extremely reverent of the rule. A flagman who hesitated to perform his duties risked baptism by his conductor in language that would make most preachers cringe.

Ralph Fischer was an experienced Boston & Maine man who wrote of his railroading in *Vanishing Markers*. He conveyed the urgency of Rule 99, devoting the first full chapter in his book to it. Some of his recollections will make your hair stand on end. Others will make your sides ache.

He describes a night in the Connecticut River Valley when a minor sideswipe occurred because dense fog so limited sight that an engineer passed the fouling point of his siding before stopping. Rain or snow similarly affects visibility.

Imagine driving in such conditions, hands gripping the wheel, wipers vainly trying to slap rain aside, eyes flashing at the rear view mirror in search of approaching headlights. This, no doubt, resembles the anxiety a crew felt when their train stopped suddenly and the head end whistled out a flag.

Routine stops, as to set out or pick up a car, could produce the same urgency. John Treen, a Susquehanna veteran, told me how he jumped off a freight to flag a following train. “Those men were fast runners,” referring to the approaching crew’s train handling. His heart leapt to his throat as he heard them whistle for a road crossing not far behind, forcing him into a run over loose ballast, stumbling over ties. He flagged them down breathlessly.

Rule 99 deserves the same respect on our layouts.

How does one determine a “sufficient distance?” The engineer might slow his train so a flagman could swing off in



Second 47 is stopped outside Veedersburg, Ind., on Tony Koester’s HO scale Nickel Plate Road, and its crew has established Rule 99 protection with a pushpin “flagman.” Jerry Dziedzic photo

advance of the stop, saving him steps. The flagman would then use his knowledge of the railroad’s physical characteristics, pacing off telegraph poles to estimate distance. A sufficient distance factors in curves that might obscure a flagman. Higher speeds increase stopping distances, so a sufficient distance in 40 mph territory is much greater than one in 20 mph territory.

Flagging equipment included flags, fusees, lanterns, and torpedoes. Torpedoes (“guns,” as some roads called them) were devices attached to the rail that exploded when wheels rolled over them, alerting enginemen and crew members who might have missed a visual signal because other duties distracted them. Torpedoes are challenging to model, but flags and fusees are easily represented.

A red pushpin makes a simple way to place a flag on a layout, as in the photo above. (You’ll note the “flagman” is quite close to the caboos. Most of the time, this wouldn’t be a sufficient distance, but I put it there so the photo would include both the pushpin and the train. A flagman who stayed that close to his train would be accused of “short flagging.”)

View blocks and return curves on peninsulas increase the sufficient distance on a layout. Keep momentum, braking, and the skill of other crews in mind. Does your host set up long coasting momentum on engines? How quickly can braking stop a train? Do the

other crews know what function the host has mapped braking to?

Several manufacturers sell circuit boards designed to simulate fusees with light-emitting diodes. Identify strategic locations at which to install them, where trains typically make stops on the main track, and mount pushbuttons to activate them. A typical fusee burned for 10 minutes. A flagman wouldn’t strike a fusee unless he saw or heard a train approaching. This adds another dimension to their use. Instruct your crews to ignite the fusee with the pushbutton only when necessary to do so.

I limited this discussion to protecting a stopped train against following trains. When a train is moving under circumstances in which it may be overtaken, perhaps because of engine trouble, Rule 99 demands that flagmen drop lighted fusees at proper intervals to slow following trains.

Vanishing Markers tells the tale of the conductor who discovered that dropping a lighted fusee through the drain pipe of the caboos’s sink helped it stick upright in a tie. His flagman was headed to the rear platform to drop a fusee when the conductor stopped him. “Here, I have a better way to do that,” he said – innocently unaware that the caboos assigned to their run that day had an elbow in its drain pipe.

Neither heroic effort nor exclamation of biblical proportion extinguished the excitement that fusee kindled. **MR**

TRACKSIDE PHOTOS





◀ Canadian National SD40-2W no. 5304 leads a unit train of cylindrical grain hoppers westward through the foothills of British Columbia. Tom Bielefeld of Tucson, Ariz., photographed the action on his freelanced N scale layout, loosely based on the CN from Vancouver to the Canadian Rockies. The locomotives are by InterMountain and Walthers; the cars are from Bachmann and InterMountain.

Want to see your work in Trackside Photos?

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



▲ In the summer of 2014, Minnesota Commercial B23-7 no. 1971 spots chemical tankers for unloading at a facility in Minneapolis. Glyn Thomas of Philadelphia modeled the HO scale scene after a real location. He also shot the photo. The engine is by Atlas; the tank cars are from Walthers and Roundhouse. The unloading platform is from a GLX Scale Models kit.



◆ Western Maryland GP9 no. 25 idles next to the Moselburg, W.Va., yard office. Steve Bittinger of Charles Town, W.Va., rebuilt the large scale locomotive from a USA Trains high-nose GP7, converting it to a low-nose model and adding battery power, sound, and radio control. Steve photographed the engine on his WM Deer Park Subdivision layout.



▲ The Southern Pacific's daily afternoon local passes through "Outlaws Corner" on its way to the big city. The scene takes place on the HO scale layout built by members of the IGMKaarst model train club in Kaarst, Germany. The area got its name because its builders were dubbed "outlaws" for choosing to model American prototypes. Rosi Mayer-Bischoff of Dusseldorf, Germany, took the photo.

► A Union Pacific 4-8-8-4 Big Boy pulls the UP steam excursion train over a bridge in Eagle Valley. Alwyn Spence from Northern Ireland staged and photographed the runby on his 5 x 8-foot HO scale Eagle Valley layout. The locomotive and cars are Rivarossi models; the bridges are by Atlas.



FIND
MORE
FREE
MAGAZINES

[HTTP://SOEK.IN](http://soek.in)



Any Time. Any Place. Any Topic.

MR ALL-TIME DIGITAL ARCHIVE

No matter where you go, *Model Railroader* can go with you. With the All-Time Digital Archive you have immediate access to the latest digital issue of *Model Railroader* and the ability to reference every issue since January 1934 in our online library.

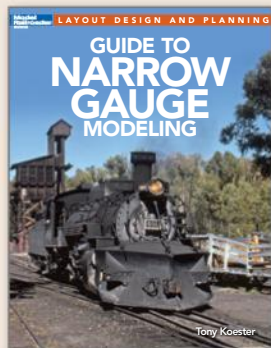
Only *Model Railroader* magazine subscribers can explore this comprehensive resource. Don't miss out on nearly a century's worth of model railroading information and tips available for you to read in digital format.



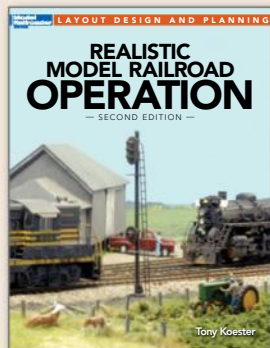
P28381

ADD THE ALL-TIME DIGITAL ARCHIVE NOW!
ModelRailroader.com/AllAccess

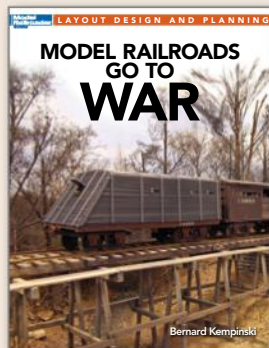
Build a Realistic Railroad



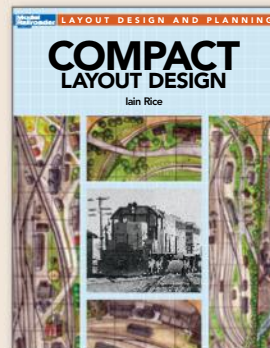
#12490 • \$21.99



#12480 • \$19.99



#12483 • \$19.99



#12487 • \$21.99

Buy now from your local hobby shop!
Shop at **KalmbachHobbyStore.com**



2BKMR

P27434

Get the gear the pros wear

Look like a pro when you work on your model railroad.
Our *Model Railroader* gear from Model Railroader Video Plus will help you operate your railroad in style.



MR Apron
\$24.99



MRVP Mug
\$9.99



MR Hat
\$15.99



Onward T-Shirt
\$15.99

Order Now at KalmbachHobbyStore.com/gear
While supplies last! Price does not include shipping.

P28378

BACKDROPS
HO, O, N Scales
WWW.TRAINJUNKIES.COM
----- 10 Feet Long -----

Kits or Ready-to-use Products by Circuits4Tracks
<http://circuits4tracks.daxack.ca>
Occupancy Detection • Grade Crossing Control
Simple Automation • DCC Fast Clock Display
6% product discount with coupon code **MRR2016AU**
until September 30, 2016
Inquiries:
905-787-1203 • circuits4@daxack.ca

TrainSetsOnly.com
✓ Competitive Pricing ✓ 1000's of Items In-Stock
✓ Quick Shipping ✓ Great Service
✓ N, HO, O, and G Scales
Locos • Rolling Stock • Track • Power • Structures • Scenery

After You've Looked at the Others...
Progressive Model Design
MUSEUM QUALITY • CUSTOM
LAYOUT MODELING SERVICE
WHAT CAN WE BUILD FOR YOU?
WWW.PROGRESSIVEMODELDESIGN.COM
211 RocBaar Drive, Romeoville, IL 60446
(815) 886-9010 FAX: (815) 886-9076
ULTIMATE MODEL MAGIC™

SPRING MILLS DEPOT
WWW.SMD.CC
Affordable storage systems for HO and N scale. High quality extremely limited custom run HO scale cars.

RESERVE NOW: B&O I-1, I-1A, I-2, I-3, I-5, I-5 C/D!
NEW SCHEMES INCLUDING: GM&O, ALTON, B&OCT!
COMING 2016!!!!

AffordableModelRailroads.com
GETTING YOUR DREAMS ON TRACK
WE WILL BUILD ON YOUR SITE
or
In Our Shop
Layout Design & Construction
MR@AffordableModelRailroads.com
(800) 216-9202

railroadbooks.biz
has 1,800 plus new titles,
all at discount!
Domestic shipping FREE over \$50.00
E-mail for free printable PDF list.
chuck@railroadbooks.biz
www.railroadbooks.biz
ORDERS:
U.S. (800) 554-7463
BUSINESS & INTERNATIONAL:
+01 (812) 391-2664
SEND:
\$2.00 for paper book list.
International Service.
Book Search.
PO Box 4, Bloomington, IN, 47402-0004 U.S.A.

FIFER HOBBY SUPPLY LLC
Your Local Internet N Scale Hobby Shop
WWW.FIFERHOBBY.COM

Railroad Art-Prints, Caps, Jackets, Shirts and More ...
Jackets starting at \$79.95
www.jelsma.com
1-904-221-3513 • Jacksonville, FL.

Digital Sound Modules
Bring your layout to life with sound
Over 150 sound modules to choose from
Trains-Bells-Animals-Nature-City-Industrial
www.ittproducts.com
818-926-1143 Dealers Welcome

Model Scenery & Structure
WINSTON SALEM, NC
Call anytime 24/7
336-924-0285
custom layouts
design build install
www.modelsceneryandstructure.com

Custom Layout Building
Layout Design
By Lance Mindheim
www.shelflayouts.com
301-404-8164

BPL BRASSWORKS
The first stop for those with distinctive taste.
Fine scale brass models, both old and new.
WWW.RAILMODEL.COM
BUYING? Outstanding support - trades, reservation management, multiple payment options, one-on-one service, daily updates, latest projects!
SELLING? A single model or extensive collection, experience and robust resources bring you comfort and confidence - consigning or selling
Email: info@railmodel.com
Phone: 262 375-1107 Fax: 866 719-7977
10936 N Port Washington Suite 240
Mequon, WI 53092

Rix Products Pikestuff
Web site: www.rixproducts.com
Send LSASE for new 20 page catalog.
3747 Hogue Rd. Evansville In. 47712
Phone (812)426-1RIX FAX (812)423-3174
Model Railroad Structures & Accessories


Frog Juicers
are automatic DCC polarity reversers for frogs on turnouts and crossings
www.TamValleyDepot.com
Available direct and from many dealers

www.wig-wag-trains.com
WIG-WAG, LLC
Now With Secure On-Line Ordering @:
www.wig-wag-trains-cart.com
1-505-298-7177
We've also added HO!

Manufacturer of quality craftsman kits and detail items; shingles, doors & windows, siding sheets and fine detail castings.
See it all at...
www.rustystumps.com

ALL ELECTRONICS CORPORATION
Electronic Parts and Supplies for Your Project.
www.allelectronics.com

Model Railroader magazine is available in DIGITAL!
You can read **MODEL RAILROADER** anytime, anywhere!

For more information, visit:
ModelRailroader.com/digitaleditions

Timberline Scenery
All Timberline trees & tree kits are **BOTTLE BRUSH TREES!**
Check out our trees • ground cover paints • stains • rocks & more at...
www.TimberlineScenery.com

Pursuing Excellence
THE TRAINMASTER, LLC
Detailed Craftsman Kits
www.TheTrainMaster.com

DON BLACK
WE BUY & SELL BRASS
VISIT US ONLINE
WWW.DONBLACK.COM
HUNDREDS OF PICTURED MODELS TO CHOOSE FROM
Don Black 119A Bernhurst Rd New Bern NC 28560
Toll Free 1-866 HO BRASS

Valley Trains N Hobbies
Specializing in N scale, locomotives, rolling stock, scenery, DCC & decoders! We also have HO!
See us at Greenberg Shows in Edison, NJ.
www.valleytrainsnhobbies.com

ALLEGHENY SCALE MODELS
BRASS LOCOMOTIVES AND ROLLING STOCK
HO, O, S, N, and Large Scale Out of Production Models
Sales, Consignments, Estates, Appraisals
www.allegHENYscale.com
phone: 908-684-2070
fax: 908-684-8911
oscale@allegHENYscale.com
470 Schooley's Mtn. Rd.
Suite 8-117
Hackettstown, NJ 07840

www.mountbluemodelco.com
On30 18 ft
Passenger
Car kits
Mount Blue Model Co. PO Box 460 WHB, MA 02381

Need Track? Most Everything over 30% off list price!
Walthers, Digitrax & Cobalt Dealer
Full line of On30, HO, N Scale Peco/Atlas track
Micro-Engineering & Caboose Industries.
Handlaying supplies, ties, rail spikes, etc.
Full line of Kadec couplers, Tortoise and more!
www.BILLSTRAINS.COM
For Questions and Non-Computer Users, CALL ME!
phone: (813) 653-3322 • e-mail: billstraintrack@aol.com

INSTANT TRACTION TIRES
Get a Grip!
SNOT = SAND BULLFROG Easy
IT WILL CHANGE THE WAY YOU RUN YOUR TRAINS
Universal Plastic
WWW.BULLFROGSNOT.COM

Jamestown Train Depot
Quality New & Used Train Sales
www.JTTrains.com
Sales, Service, Repair & Upgrades
All Scales & Makes - Digitrax Dealer

Say you saw their ad in
Model Railroader magazine!

HO/N/O signs, billboards,
laser-cut structures
and much more from:
Blair Line, LLC
PO Box 1136, Carthage, MO 64836
www.blairline.com

Altoona Model Works
Railroad Track Side Structures in O & HO scale
• Model Making Services • Laser Cutting • Resin Castings
• Museum Quality Workmanship
Website: WWW.ALTOONAMODELWORKS.NET
In HO Soon!!!
814-793-7016

AVAILABLE FROM THE C&NW HISTORICAL SOCIETY
C&NW HO Bicentennial Hopper
Exact Rail car with free rolling trucks and Kadec couplers.
\$44.95 each plus \$8.00 postage per order.
IL residents add 8.75% sales tax
C&NWHS-RM
PO Box 1068
North Riverside, IL 60546
www.cnnwhs.org
Includes flood-type coal load

CHOOCH
Great Scenery
www.ChoochEnterprises.com

YardSaleTrains.com
Hard to Find Near New Exclusive N Scale
Kato • Atlas • MTL • Kadec • DC or DCC • Scenery
Track • Buildings • Details • Bridges • Tools
www.yardsaletrains.com
(720)840-7274

RIVER POINT
HO
#536-5057.02
www.RiverPointStation.com
River Point Station Division of ITI
115 Maple Street, Warwick, RI 02888-2130 USA
Tel. (401) 467-6907 rps-info@riverpointstation.com
Available Worldwide at Hobby Stores
Dealers may order from RPS or through Walthers

Touch Toggles Elegant
Run track circuits, Tortoises, twin-coils, servo motors, and more with a touch!
See our website for a video introduction
Made in the USA
www.berretthillshop.com

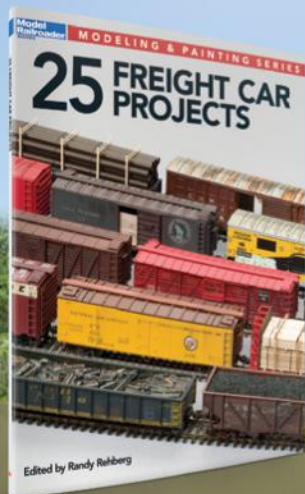
TK TRAIN HOBBY
Phone 740-633-6607
HO, N, O & G Trains, Track, Scenery, Accessories and Much More!
We have Walthers, Athearn, Spectrum, Branchline and many others!
Visit us on line for great savings!
www.tandkhobby.com

EXCELLE DUBRICANTS
1/2oz OILERS
ULTRA LITE—LIGHT—MEDIUM—HEAVY
GEAR—NLGI 2 / PTFE GREASE
NLGI 1 GREASE
PTFE POWDER—BEARING
RAIL CONDITIONER—2oz OIL—MOTOR CLEANERS—OIL KITS...
ASK FOR IT AT YOUR LOCAL HOBBY SHOP
phoenixul@phoenixul.com castbiz.net

Litchfield STATION
SOUNDTRAXX
Custom Installation Available
We carry the HOTTEST DCC Products!
623-298-7355
www.LitchfieldStation.com

Ron's Books
The largest railroad book seller with over 4,500 titles and over 400 DVDs & Blu-rays! Free shipping on orders over \$25 in the U.S. Send \$3 for a catalog.
P.O. Box 714
Harrison, NY 10528
914-967-7541
ronsbooks@aol.com
Online catalog at ronsbooks.com

Learn New Techniques from Top Authors!



#12498 • \$21.99

This book contains all-new material from a star-studded roster of *Model Railroader* authors. *25 Freight Car Projects* shows you a wide variety of techniques and perspectives to help you broaden your modeling horizons.

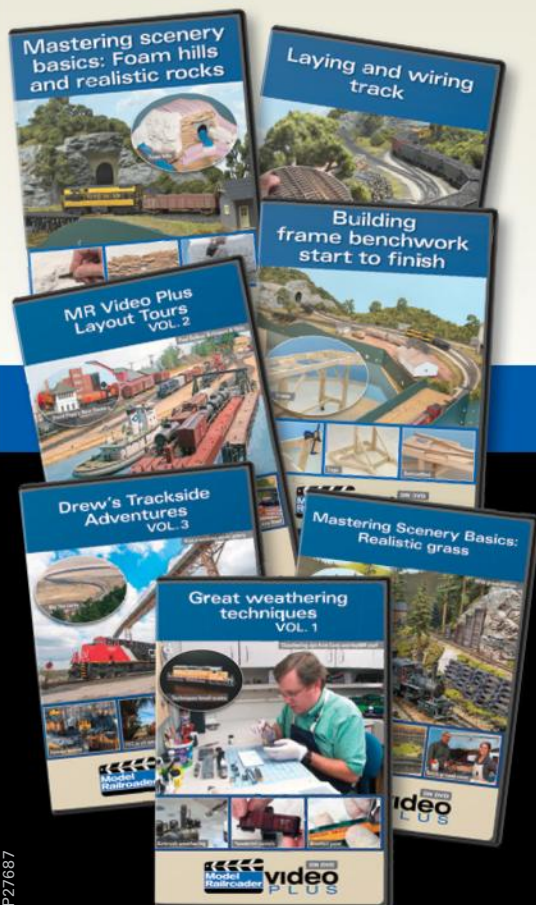
The book features:

- Projects in HO and N scales.
- Boxcars, flatcars, gondolas, hoppers, and other cars.
- Tips on finishing, weathering, and adding details.



Buy now from your local hobby shop!
Shop at KalmbachHobbyStore.com

P28458



Explore MR Video Plus on DVD!

JUST \$12.99 EACH!*

Watch your favorite videos on your TV or any other DVD-capable device. These DVD installments are the perfect way to learn new model railroading skills and discover quick tips that the experts use. In our extensive DVD collection, you'll find hours of coverage on the most practical topics.

QUANTITIES ARE LIMITED!

Purchase today at
KalmbachHobbyStore.com/MRVPDVD

*Shipping price not included. Sales tax where applicable.

P27687

Classified Advertising

Schedule of Events Rate: \$35 per issue (45 word maximum). Ads will contain the following information about the event: state, city, sponsoring organization and name of event, meet, auction or show, dates, location, times, admission fee, name and/or telephone number and/or email of person to contact for information. Name, daytime telephone number and street address of the person providing the information is also required but need not be included in the ad. Unless otherwise requested, ads will be published in the issue month that the event occurs in. Additional months are available at the \$35 per issue fee. Please specify issue date(s).

Word Ad Rates: per issue: 1 insertion — \$2.03 per word, 6 insertions — \$1.89 per word, 12 insertions — \$1.77 per word. \$30.00 MINIMUM per ad. To receive the discount you must order and prepay for all ads at one time. Count all initials, single numbers, groups of numbers (i.e. 4-6-0 or K-27), names, address number, street number, street name, city, state, zip, phone numbers each as one word. Example: John A. Jones, 2102 South Post St., Waukesha, WI 53187 would count as 10 words.

For MR's private records, please furnish: a telephone number and, when using a P.O. Box in your ad, a street address. *Model Railroader* reserves the right to refuse listing.

All Copy: Set in standard 6 point type. First several words only set in bold face. If possible, ads should be sent typewritten and categorized to ensure accuracy.

Send your submissions to: *Model Railroader* — Classifieds 21027 Crossroads Circle, P.O. Box 1612 Waukesha, WI 53187-1612 Toll-free (888) 558-1544 Ext. 815 Fax: 1-262-796-0126 E-mail: onlineclassifieds@kalmbach.com

All ads must be prepaid and pertain to the subject of model railroading.

Note to Readers: Show dates, times and locations sometimes change. Confirm the details before driving any distance.

Schedule of Events

AR, JACKSONVILLE: Train Show, Jacksonville Community Center, Municipal Drive. August 27-28, 2016, 10:00am-4:00pm. Admission \$7.00, 12 and under free w/adult. Vendors, Clinics, Contests. Contact RAIL & SPRUE Hobbies, 1200 John Harden Drive, Jacksonville, AR 72076, 501-982-6836 or railandsprue@aol.com

AZ, PRESCOTT AREA: Beat the Heat Model Trains Swap Meet. Liberty Traditional School, 3300 N. Lake Valley Rd., Prescott Valley. Saturday, August 13, 2016, 9:00am-1:00pm. Adults \$5.00, children 12 and under free. Tables \$30.00. Presented by: The Central Arizona Model Railroad Club. Contact: Dick Gage, 802-272-1352.

CA, SAN CARLOS European Train Enthusiasts (<http://www.ete.org>) EUROWEST at Hiller Aviation Museum, San Carlos Airport, 601 Skyway Road, Zip: 94070. July 23-24, 2016, Saturday 10:00am-5:00pm and Sunday 10:00am-4:00pm. Layouts, clinics, vendors, raffle. Admission (<http://www.hiller.org>) includes Air Museum, free parking. Contact Jens Ullmann: eurowest@ete.org

CO, PUEBLO: Colorado Rail Fair, Pueblo Union Station. August 6-7, 2016, 9:00am-4:00pm. Admission: \$5.00, children free w/adult. Operating layouts, sales tables, railroad museum and more. Train rides conducted by the Pueblo Railway Foundation. Contact: John Denny, 719-547-7990, loncowsboy@centurylink.net

FL, PINELLAS PARK: Regal Railways Presents a Model Train Show & Swap Meet. 7177 58th St. North, Saturday, August 27, 2016, 9:00am-2:00pm. Adults \$5.00. Vendors, videos & operating layout. Serving lunch items. Contact Joe: 727-244-1341 or visit www.regalrailways.com for more information.

GA, ATLANTA: 51st Atlanta Model Train & Railroadiana Show. Infinite Energy Center, 6400 Sugarloaf Parkway, Duluth, GA 30097. Saturday, August 27, 2016, 9:00am-4:00pm. Adults: \$9.00 (under 12 free). Operating layouts. Lionel parts dealer on site. Miller, 3106 N. Rochester St., Arlington, VA 22213. 703-536-2954. E-mail: rrrshows@aol.com

IL, KANKAKEE: Kankakee Model Railroad Club Train Show. Gov. Small Memorial Park Civic Center, 803 South 8th Ave. Sunday, October 23, 2016, 9:30am-3:00pm. Admission: \$3.00, under 5 free. 8' tables \$15.00 and 6' tables \$12.00. Operating layout. Contact lrv at 815-465-2420 or daswoodwerkhau@yahoo.com for more information.

NC, SPENCER: Model Train and Railroadiana Show at the North Carolina Transportation Museum. August 20-21, 2016, Saturday 9:00am-5:00pm and Sunday 10:00am-4:00pm. Speakers, train rides, largest preserved roundhouse! Details: nctrans.org or 704-636-2889, ext. 251

OH, PAINESVILLE: Railroad Memorabilia Show Painesville Railroad Museum (Painesville Depot), 475 Railroad Street, Zip Code: 44077. Sunday, August 28, 2016, 10:00am-4:00pm. 216-470-5780 Email: prrm@att.net www.painesvilleraillroadmuseum.org

VA, VIRGINIA BEACH: Tidewater Division's 27th Annual Train Show & Sale. Virginia Beach Convention Center, 1000 19th Street, Zip: 23451. October 8-9, 2016, 10:00am-4:00pm. Admission: \$8.00. Equipment, Supplies, Tools, Train Doctors, Test Tracks, White Elephant Tables, "How To" Clinics, Operating Layouts. Info: 757-409-3623, E-mail: ktsdad1994@cox.net Flyer: <http://nmra-mer-tidewater.org>

WI, LA CROSSE: Rail Fair. Copeland Park, Rose & Clinton Streets. July 16, 2016, 10:00am-4:00pm. Admission \$5.00, under 12 free. Railroad Show, Sale & Exhibition. Model, Toy & Antique Trains & Memorabilia, Railroad Exhibits & Displays. Information: 4000 Foundation, P.O. Box 3411, La Crosse, WI 54602, 608-781-9383.

WI, MILWAUKEE: Trainfest, at Wisconsin State Fair Park. November 12-13, 2016, 9:00am-5:00pm. WISE Div. NMRA. Exhibitors include Operating Layouts, Major Manufacturers, Modeling Clinics, and Hobby Vendors. Admission Information and Tickets available at www.trainfest.com Contact us at info@trainfest.com

Classifieds

Wanted-N Scale

#1 ESTATE BUYER OF N SCALE COLLECTIONS!

We buy all makes and types - including Brass & European! Even Nn3! Call us TOLL FREE: 1-866-462-7277. Don Black 119 Bernhurst Road, New Bern, NC 28560. E-mail: don@donblack.com

A FAMILY-OWNED COMPANY, Irek's Toys and Trains, purchases trains of all types from brass to plastic. We also offer a competitive consignment option. No collection too small or large. Estate specialists. A leader in model train sales. Fast, Easy, Professional and Friendly service guaranteed. Willing to travel. Call, write, fax or e-mail. Ask for Chris, 972-675-8697. Fax: 972-767-4785. E-mail: thetrainguy@gmail.com or write to 120 East FM 544, Suite 72 #328, Murphy, TX 75094.

ALWAYS BUYING N Scale Collections- Kato, Atlas, Micro-Trains, Custom Painted, Brass or Plastic. Quality Items Wanted- Over \$1,000,000 Available. Please call Dan Toll-Free at: 1-877-227-5557 or 352-292-4116. Mail your list to: Dan Glasure, PO Box 755, Ocklawaha, FL 32183 or E-Mail: Dan@DansTrainDepot.com

BUYING N scale train collections, large or small. Call Tom 630-443-9137.

CANADIAN TRAIN COLLECTIONS AND ESTATES: Buying entire collections anywhere in Canada or the USA. Brass, plastic, engines, cars, buildings, memorabilia - everything! Call Don toll-free 1-877-955-7245. E-mail: trainsandsuch@telus.net

For Sale-HO Scale

ATHEARN PARTS- Closing out. All engine shells \$4.00 each. All freight shells \$1.00 - \$2.00 each. Many other parts 50-60% off retail. Call RJ Rennie, 440-234-7186, 197 Best St., Berea, OH 44017.

HAG, MÄRKLIN, TRIX, FLEISCHMANN and other European brands at very competitive prices. World class repair facility. E-Shopping fast, convenient, secure, reliable! Please visit us on the web at www.helmuthobbies.com Helmut Hobby Specialties, 83 Brookshire Dr., Warrenton, VA 20186. 540-349-4910.

HO SIGNALS FOR SALE Oregon Rail Supply. Best signals in the industry. 503-543-6466, www.oregonrail.com

PREOWNED TRAINS.COM For preowned and used model trains. Large selection, all scales. World wide shipping.

For Sale-HO & N Scale

GOT DIRTY TRACK? HO & N scale track cleaners. Made in USA. Dealer inquiries welcome. www.StealthTrackCleaner.com 616-784-4104

WWW.AZTECTRAINS.COM Track cleaning cars from Z to G. Phone: 775-883-3327; Fax: 775-883-3357

Wanted-HO Scale

#1 A+ ESTATE BUYER OF ALL TRAIN ESTATES-

Brass Pieces & Collections wants your material. Including all types of Brass, old trains, kits, plastic, diecast, buildings, etc. - we buy it all. Buildings and estates included. We seek better items for personal collections. Call us before you sell for our offer as we pay the highest prices. Call Don Black toll free 1-866-462-7277. Don Black, 119 Bernhurst Road, New Bern, NC 28560. E-mail don@donblack.com

\$1,000,000 CASH AVAILABLE- For your collection! Brass, Plastic, Memorabilia, we buy it all. Call us 352-292-4116 or mail your list to: BRASSTRAINS.COM, 10515 SE 115th Ave., Ocala, FL 34472. E-mail: dan@brasstrains.com

A FAMILY-OWNED COMPANY, Irek's Toys and Trains, purchases trains of all types from brass to plastic. We also offer a competitive consignment option. No collection too small or large. Estate specialists. A leader in model train sales. Fast, Easy, Professional and Friendly service guaranteed. Willing to travel. Call, write, fax or e-mail. Ask for Chris, 972-675-8697. Fax: 972-767-4785. E-mail: thetrainguy@gmail.com or write to 120 East FM 544, Suite 72 #328, Murphy, TX 75094.

A FATHER & SON TEAM are looking for large high-quality Brass & Plastic Collections. We buy your entire collection, not just the cream. Over \$1,000,000 Available. Many items bought are used for personal layout. Call Dan Toll-free at: 1-877-227-5557 or 352-292-4116 or Mail a List to: Dan Glasure, 10515 SE 115th Ave., Ocala, FL 34472 or E-Mail: Dan@DansTrainDepot.com

BRASS PASSENGER CARS: Craftsman's kits; LIRR brass and plastic. Challenger Broadway Limited and Challenger NP Cars. Please call Bob 212-874-6569 or e-mail grandt7@yahoo.com

BUYING HO train collections, large or small. Also brass. Call Tom 630-443-9137.

CANADIAN TRAIN COLLECTIONS AND ESTATES: Buying entire collections anywhere in Canada or the USA. Brass, plastic, engines, cars, buildings, memorabilia - everything! Call Don toll-free 1-877-955-7245. E-mail: trainsandsuch@telus.net

For Sale-O Scale

OVER 1500 ITEMS all new and boxed featuring N&W Powhatan Arrow with J Class 611. Email: loutkent@verizon.net for complete list.

Wanted-O Scale

ATLAS CZ CB&Q, PRR, UNDEC No dome coaches, no bag. Des Plaines Hobbies 10/6, 14/4. PSC. NYC Hwy7. 4 window RPO/Bag. ATSF PS 8-2-2, 8-5, 10-4 Pullmans. Am heavyweight USRA 65' Bag #1603. PSC pass car import list. No calls. Jim Seacrest, PO Box 6397, Lincoln, NE 68506-0397.

ATSF PS PULLMANS: 8 sect-2 DBR-2 Compt, 8 sect-5 DBR and 10 sect-4 Rmts. Sold at various times by Boxcar Ken, Golden Gate, Pecos River Brass and Exacta. Need pass & diesel decals for CB&Q and RI. No calls. Jim Seacrest, PO Box 6397, Lincoln, NE 68506-0397.

CALLING FOR FISCHER sunroom solarium cars PRR Legion Series, PRR Burlington series. No calls. James Seacrest, PO Box 6397, Lincoln, NE 68506-0397.

Wanted-O Tinplate

BUYING O and Standard gauge collections. Lionel, Flyer and all others. Call Tom 630-443-9137

For Sale - Miscellaneous

EMBROIDERED RAILROAD PATCHES, 1,000 designs. Catalog \$5.00. The Patch King, PO Box 145, York Harbor, ME 03911.

TREES! Unique Evergreen Trees and Kits. Realistic and Fun. Save Time & Money. Handcrafted in Oregon. www.coastmans.com Mr. Rasmussen 360-820-3553.

Wanted - Miscellaneous

ALL TRAIN COLLECTORS & MODELERS- We need more trains to supply our ever expanding group of interested buyers. We buy HO & N Scale Trains - Brass, Marklin, Rivarossi, Atlas, Kato, MicroTrains, etc. as well as better trains in all scales. We also purchase store inventories. We also can auction your trains with rates starting as low as 15%. We travel extensively all over the US and Canada. Send us your list today or for more information see www.trainz.com/sell Trainz, 2740 Faith Industrial Dr., Buford, GA 30518. 866-285-5840, Scott@trainz.com Fax: 866-935-9504

MODEL AUTOMOBILE AND TRUCK KITS WANTED- unbuild or built, any size collection. Fred Sterns, 48 Standish, Buffalo, NY 14216. 716-838-6797. email: fsterns@aol.com

Custom Painting & Building

ABSOLUTELY THE BEST PROFESSIONAL custom model railroad services. www.hobbybuilder01.com E-mail: hobbybuilder01@yahoo.com 978-868-2900, West Palm Beach, Florida

CUSTOM BUILDING & PAINTING, kit building, kit-bashing & scratchbuilding. Locomotives, rolling stock, structures & more. 12 Penny Lane, Newark, DE 19702, 302-229-6010, www.tmbcustommodels.com

CUSTOM LAYOUT BUILDING. Fine scale custom layout building. Specializing in prototype modeling. Layout Design. The Shelf Layouts Company, Inc. www.shelflayouts.com 301-404-8164.

LAYOUT DESIGN SERVICE. Have a case of designers block? I can help. Completed packages include CAD drawings, track quantities, dimensions, specifications, and follow up support during construction. www.shelflayouts.com 301-404-8164

Books and Magazines

1985 TO 2015. Complete sets: MR, RMC, Trains & R&R. As new, in slip cases. Complete only. \$25K. Contact: w.kolbeck@comcast.net

MODEL RAILROAD HOW TO BOOKS. TRACK PLAN BOOKS. How To Build A Switching Layout. How To Design A Switching Layout. 8 Realistic Track Plans For Switching Layouts. Details at www.shelflayouts.com

Real Estate

COEUR D'ALENE, IDAHO- 2,200 sq. ft. retirement home plus full finished basement for sale. 27 x 12 ft. HO model railroad layout under construction in basement. Contact owner George Wilhelm 208-664-9788. glwilhelm@gmail.com

Business Opportunities

HELP WANTED Hiring Experienced or Apprentice Model Railroad Builder. Part Time or Full Time. Position requires the ability to travel out of state 3-4 times per year for 7 to 17 days each trip. No professional experience needed. personal or club experience acceptable. Must have a passion for building model railroads. Send contact info and skill level to MikeShampine@gmail.com

LEADING MODEL RETAILERS

Retail Directory spaces are sold on a year's basis at \$654 per year (payable in advance) or at \$60 per month (billed to established accounts for one year minimum); also for six months at \$353 (payable in advance). Ads will be set in standard listing typography. All insertions must be consecutive and may be invoiced if you have credit established with us. No mention of mail order business permitted. CLOSING DATES are listed in the "Schedule of Events" section. For more information call 1-888-558-1544, ext. 815.

ALABAMA • Anniston
Northeast Alabama's Largest!
All Scales - All Major Brands
Tues - Fri 10-6; Sat 9-3
E-mail: modelcitymodels@nti.net
www.modelcitymodels.com
MODEL CITY MODELS
2750 Pelham Rd. South #9 256-435-0095

ALABAMA • Enterprise
Southern Alabama's largest train store.
MTH & Lionel authorized dealer. N, HO, HO3, O & G scales. Mon - Sat 10A to 4P
highcountryhobbies@gmail.com
www.highcountryhobbies.com
HIGH COUNTRY HOBBIES
206 South Main St. 334-489-4558

ALASKA • Anchorage
www.anchoragehouseofhobbies.com
Alaska's best hobby supplier since 1964.
Two stories, 6,300sf, 1st floor all R/C,
2nd floor general hobbies, plastics, trains,
slot cars, telescopes & more!
ANCHORAGE HOUSE OF HOBBIES
2803 Spenard Rd. 907-277-7778

ARIZONA • Apache Junction
New Store! Arizona's premier hobby shop.
Full scale, all service hobby shop. Trains,
planes, cars, boats and R/C. Special orders.
Open Mon - Sat
OBIES TRAINS
2114 West Apache Trail #11 480-203-1796

ARIZONA • Avondale
DCC Systems, Decoders, Layout Supplies
Professional Installations G to Z scales
Mon - Fri 8:00-5:00, Sat 9-5, Sun 1-4
Online Store: LitchfieldStation.com
E-mail: Sales@LitchfieldStation.com
LITCHFIELD STATION
1412 N. Central Ave., Ste. D 623-298-7355

ARIZONA • Phoenix
Come and see our NEW store!
Tues - Fri 10-5:30, Sat 9-5, Sun 1-4
Shop online at www.aawtrains.com
AN AFFAIR WITH TRAINS
301 W. Deer Valley Road 623-434-6778

ARIZONA • Phoenix
Narrow gauge almost exclusively.
On3 - Sn3 - HO3 - On30.
Kits, parts, brass & books.
Mon-Fri 8-12, 1-5, Sat 8-12.
CORONADO SCALE MODELS
1544 E. Cypress St. 602-254-9656

ARIZONA • Tempe
Family owned, full service. Special orders
welcomed. Athearn, Lionel, Bachmann,
Digitrax & Soundtraxx dealer. Plastic models,
books, magazines, paints, building materials,
scenery, & more. Free classes and clinics.
HOBBY DEPOT
216 W. Southern Ave. 480-968-1880

ARKANSAS • Jacksonville
Headquarters for scale hobbies. Models;
N-HO-O trains; tools; paint, etc.
Discounts & special orders.
Open 10-6, closed Sundays and Wednesdays.
www.railandspruehobbies.com
RAIL & SPRUE HOBBIES
1200 John Harden Dr. 501-982-6836

CALIFORNIA • Atascadero
All scales G to Z. Special orders welcome.
Midway LA, HO, O, N, HO, HO3, HO4, HO5, HO6, HO7, HO8, HO9, HO10, HO11, HO12, HO13, HO14, HO15, HO16, HO17, HO18, HO19, HO20, HO21, HO22, HO23, HO24, HO25, HO26, HO27, HO28, HO29, HO30, HO31, HO32, HO33, HO34, HO35, HO36, HO37, HO38, HO39, HO40, HO41, HO42, HO43, HO44, HO45, HO46, HO47, HO48, HO49, HO50, HO51, HO52, HO53, HO54, HO55, HO56, HO57, HO58, HO59, HO60, HO61, HO62, HO63, HO64, HO65, HO66, HO67, HO68, HO69, HO70, HO71, HO72, HO73, HO74, HO75, HO76, HO77, HO78, HO79, HO80, HO81, HO82, HO83, HO84, HO85, HO86, HO87, HO88, HO89, HO90, HO91, HO92, HO93, HO94, HO95, HO96, HO97, HO98, HO99, HO100, HO101, HO102, HO103, HO104, HO105, HO106, HO107, HO108, HO109, HO110, HO111, HO112, HO113, HO114, HO115, HO116, HO117, HO118, HO119, HO120, HO121, HO122, HO123, HO124, HO125, HO126, HO127, HO128, HO129, HO130, HO131, HO132, HO133, HO134, HO135, HO136, HO137, HO138, HO139, HO140, HO141, HO142, HO143, HO144, HO145, HO146, HO147, HO148, HO149, HO150, HO151, HO152, HO153, HO154, HO155, HO156, HO157, HO158, HO159, HO160, HO161, HO162, HO163, HO164, HO165, HO166, HO167, HO168, HO169, HO170, HO171, HO172, HO173, HO174, HO175, HO176, HO177, HO178, HO179, HO180, HO181, HO182, HO183, HO184, HO185, HO186, HO187, HO188, HO189, HO190, HO191, HO192, HO193, HO194, HO195, HO196, HO197, HO198, HO199, HO200, HO201, HO202, HO203, HO204, HO205, HO206, HO207, HO208, HO209, HO210, HO211, HO212, HO213, HO214, HO215, HO216, HO217, HO218, HO219, HO220, HO221, HO222, HO223, HO224, HO225, HO226, HO227, HO228, HO229, HO230, HO231, HO232, HO233, HO234, HO235, HO236, HO237, HO238, HO239, HO240, HO241, HO242, HO243, HO244, HO245, HO246, HO247, HO248, HO249, HO250, HO251, HO252, HO253, HO254, HO255, HO256, HO257, HO258, HO259, HO260, HO261, HO262, HO263, HO264, HO265, HO266, HO267, HO268, HO269, HO270, HO271, HO272, HO273, HO274, HO275, HO276, HO277, HO278, HO279, HO280, HO281, HO282, HO283, HO284, HO285, HO286, HO287, HO288, HO289, HO290, HO291, HO292, HO293, HO294, HO295, HO296, HO297, HO298, HO299, HO300, HO301, HO302, HO303, HO304, HO305, HO306, HO307, HO308, HO309, HO310, HO311, HO312, HO313, HO314, HO315, HO316, HO317, HO318, HO319, HO320, HO321, HO322, HO323, HO324, HO325, HO326, HO327, HO328, HO329, HO330, HO331, HO332, HO333, HO334, HO335, HO336, HO337, HO338, HO339, HO340, HO341, HO342, HO343, HO344, HO345, HO346, HO347, HO348, HO349, HO350, HO351, HO352, HO353, HO354, HO355, HO356, HO357, HO358, HO359, HO360, HO361, HO362, HO363, HO364, HO365, HO366, HO367, HO368, HO369, HO370, HO371, HO372, HO373, HO374, HO375, HO376, HO377, HO378, HO379, HO380, HO381, HO382, HO383, HO384, HO385, HO386, HO387, HO388, HO389, HO390, HO391, HO392, HO393, HO394, HO395, HO396, HO397, HO398, HO399, HO400, HO401, HO402, HO403, HO404, HO405, HO406, HO407, HO408, HO409, HO410, HO411, HO412, HO413, HO414, HO415, HO416, HO417, HO418, HO419, HO420, HO421, HO422, HO423, HO424, HO425, HO426, HO427, HO428, HO429, HO430, HO431, HO432, HO433, HO434, HO435, HO436, HO437, HO438, HO439, HO440, HO441, HO442, HO443, HO444, HO445, HO446, HO447, HO448, HO449, HO450, HO451, HO452, HO453, HO454, HO455, HO456, HO457, HO458, HO459, HO460, HO461, HO462, HO463, HO464, HO465, HO466, HO467, HO468, HO469, HO470, HO471, HO472, HO473, HO474, HO475, HO476, HO477, HO478, HO479, HO480, HO481, HO482, HO483, HO484, HO485, HO486, HO487, HO488, HO489, HO490, HO491, HO492, HO493, HO494, HO495, HO496, HO497, HO498, HO499, HO500, HO501, HO502, HO503, HO504, HO505, HO506, HO507, HO508, HO509, HO510, HO511, HO512, HO513, HO514, HO515, HO516, HO517, HO518, HO519, HO520, HO521, HO522, HO523, HO524, HO525, HO526, HO527, HO528, HO529, HO530, HO531, HO532, HO533, HO534, HO535, HO536, HO537, HO538, HO539, HO540, HO541, HO542, HO543, HO544, HO545, HO546, HO547, HO548, HO549, HO550, HO551, HO552, HO553, HO554, HO555, HO556, HO557, HO558, HO559, HO560, HO561, HO562, HO563, HO564, HO565, HO566, HO567, HO568, HO569, HO570, HO571, HO572, HO573, HO574, HO575, HO576, HO577, HO578, HO579, HO580, HO581, HO582, HO583, HO584, HO585, HO586, HO587, HO588, HO589, HO590, HO591, HO592, HO593, HO594, HO595, HO596, HO597, HO598, HO599, HO600, HO601, HO602, HO603, HO604, HO605, HO606, HO607, HO608, HO609, HO610, HO611, HO612, HO613, HO614, HO615, HO616, HO617, HO618, HO619, HO620, HO621, HO622, HO623, HO624, HO625, HO626, HO627, HO628, HO629, HO630, HO631, HO632, HO633, HO634, HO635, HO636, HO637, HO638, HO639, HO640, HO641, HO642, HO643, HO644, HO645, HO646, HO647, HO648, HO649, HO650, HO651, HO652, HO653, HO654, HO655, HO656, HO657, HO658, HO659, HO660, HO661, HO662, HO663, HO664, HO665, HO666, HO667, HO668, HO669, HO670, HO671, HO672, HO673, HO674, HO675, HO676, HO677, HO678, HO679, HO680, HO681, HO682, HO683, HO684, HO685, HO686, HO687, HO688, HO689, HO690, HO691, HO692, HO693, HO694, HO695, HO696, HO697, HO698, HO699, HO700, HO701, HO702, HO703, HO704, HO705, HO706, HO707, HO708, HO709, HO710, HO711, HO712, HO713, HO714, HO715, HO716, HO717, HO718, HO719, HO720, HO721, HO722, HO723, HO724, HO725, HO726, HO727, HO728, HO729, HO730, HO731, HO732, HO733, HO734, HO735, HO736, HO737, HO738, HO739, HO740, HO741, HO742, HO743, HO744, HO745, HO746, HO747, HO748, HO749, HO750, HO751, HO752, HO753, HO754, HO755, HO756, HO757, HO758, HO759, HO760, HO761, HO762, HO763, HO764, HO765, HO766, HO767, HO768, HO769, HO770, HO771, HO772, HO773, HO774, HO775, HO776, HO777, HO778, HO779, HO780, HO781, HO782, HO783, HO784, HO785, HO786, HO787, HO788, HO789, HO790, HO791, HO792, HO793, HO794, HO795, HO796, HO797, HO798, HO799, HO800, HO801, HO802, HO803, HO804, HO805, HO806, HO807, HO808, HO809, HO810, HO811, HO812, HO813, HO814, HO815, HO816, HO817, HO818, HO819, HO820, HO821, HO822, HO823, HO824, HO825, HO826, HO827, HO828, HO829, HO830, HO831, HO832, HO833, HO834, HO835, HO836, HO837, HO838, HO839, HO840, HO841, HO842, HO843, HO844, HO845, HO846, HO847, HO848, HO849, HO850, HO851, HO852, HO853, HO854, HO855, HO856, HO857, HO858, HO859, HO860, HO861, HO862, HO863, HO864, HO865, HO866, HO867, HO868, HO869, HO870, HO871, HO872, HO873, HO874, HO875, HO876, HO877, HO878, HO879, HO880, HO881, HO882, HO883, HO884, HO885, HO886, HO887, HO888, HO889, HO890, HO891, HO892, HO893, HO894, HO895, HO896, HO897, HO898, HO899, HO900, HO901, HO902, HO903, HO904, HO905, HO906, HO907, HO908, HO909, HO910, HO911, HO912, HO913, HO914, HO915, HO916, HO917, HO918, HO919, HO920, HO921, HO922, HO923, HO924, HO925, HO926, HO927, HO928, HO929, HO930, HO931, HO932, HO933, HO934, HO935, HO936, HO937, HO938, HO939, HO940, HO941, HO942, HO943, HO944, HO945, HO946, HO947, HO948, HO949, HO950, HO951, HO952, HO953, HO954, HO955, HO956, HO957, HO958, HO959, HO960, HO961, HO962, HO963, HO964, HO965, HO966, HO967, HO968, HO969, HO970, HO971, HO972, HO973, HO974, HO975, HO976, HO977, HO978, HO979, HO980, HO981, HO982, HO983, HO984, HO985, HO986, HO987, HO988, HO989, HO990, HO991, HO992, HO993, HO994, HO995, HO996, HO997, HO998, HO999, HO1000, HO1001, HO1002, HO1003, HO1004, HO1005, HO1006, HO1007, HO1008, HO1009, HO1010, HO1011, HO1012, HO1013, HO1014, HO1015, HO1016, HO1017, HO1018, HO1019, HO1020, HO1021, HO1022, HO1023, HO1024, HO1025, HO1026, HO1027, HO1028, HO1029, HO1030, HO1031, HO1032, HO1033, HO1034, HO1035, HO1036, HO1037, HO1038, HO1039, HO1040, HO1041, HO1042, HO1043, HO1044, HO1045, HO1046, HO1047, HO1048, HO1049, HO1050, HO1051, HO1052, HO1053, HO1054, HO1055, HO1056, HO1057, HO1058, HO1059, HO1060, HO1061, HO1062, HO1063, HO1064, HO1065, HO1066, HO1067, HO1068, HO1069, HO1070, HO1071, HO1072, HO1073, HO1074, HO1075, HO1076, HO1077, HO1078, HO1079, HO1080, HO1081, HO1082, HO1083, HO1084, HO1085, HO1086, HO1087, HO1088, HO1089, HO1090, HO1091, HO1092, HO1093, HO1094, HO1095, HO1096, HO1097, HO1098, HO1099, HO1100, HO1101, HO1102, HO1103, HO1104, HO1105, HO1106, HO1107, HO1108, HO1109, HO1110, HO1111, HO1112, HO1113, HO1114, HO1115, HO1116, HO1117, HO1118, HO1119, HO1120, HO1121, HO1122, HO1123, HO1124, HO1125, HO1126, HO1127, HO1128, HO1129, HO1130, HO1131, HO1132, HO1133, HO1134, HO1135, HO1136, HO1137, HO1138, HO1139, HO1140, HO1141, HO1142, HO1143, HO1144, HO1145, HO1146, HO1147, HO1148, HO1149, HO1150, HO1151, HO1152, HO1153, HO1154, HO1155, HO1156, HO1157, HO1158, HO1159, HO1160, HO1161, HO1162, HO1163, HO1164, HO1165, HO1166, HO1167, HO1168, HO1169, HO1170, HO1171, HO1172, HO1173, HO1174, HO1175, HO1176, HO1177, HO1178, HO1179, HO1180, HO1181, HO1182, HO1183, HO1184, HO1185, HO1186, HO1187, HO1188, HO1189, HO1190, HO1191, HO1192, HO1193, HO1194, HO1195, HO1196, HO1197, HO1198, HO1199, HO1200, HO1201, HO1202, HO1203, HO1204, HO1205, HO1206, HO1207, HO1208, HO1209, HO1210, HO1211, HO1212, HO1213, HO1214, HO1215, HO1216, HO1217, HO1218, HO1219, HO1220, HO1221, HO1222, HO1223, HO1224, HO1225, HO1226, HO1227, HO1228, HO1229, HO1230, HO1231, HO1232, HO1233, HO1234, HO1235, HO1236, HO1237, HO1238, HO1239, HO1240, HO1241, HO1242, HO1243, HO1244, HO1245, HO1246, HO1247, HO1248, HO1249, HO1250, HO1251, HO1252, HO1253, HO1254, HO1255, HO1256, HO1257, HO1258, HO1259, HO1260, HO1261, HO1262, HO1263, HO1264, HO1265, HO1266, HO1267, HO1268, HO1269, HO1270, HO1271, HO1272, HO1273, HO1274, HO1275, HO1276, HO1277, HO1278, HO1279, HO1280, HO1281, HO1282, HO1283, HO1284, HO1285, HO1286, HO1287, HO1288, HO1289, HO1290, HO1291, HO1292, HO1293, HO1294, HO1295, HO1296, HO1297, HO1298, HO1299, HO1300, HO1301, HO1302, HO1303, HO1304, HO1305, HO1306, HO1307, HO1308, HO1309, HO1310, HO1311, HO1312, HO1313, HO1314, HO1315, HO1316, HO1317, HO1318, HO1319, HO1320, HO1321, HO1322, HO1323, HO1324, HO1325, HO1326, HO1327, HO1328, HO1329, HO1330, HO1331, HO1332, HO1333, HO1334, HO1335, HO1336, HO1337, HO1338, HO1339, HO1340, HO1341, HO1342, HO1343, HO1344, HO1345, HO1346, HO1347, HO1348, HO1349, HO1350, HO1351, HO1352, HO1353, HO1354, HO1355, HO1356, HO1357, HO1358, HO1359, HO1360, HO1361, HO1362, HO1363, HO1364, HO1365, HO1366, HO1367, HO1368, HO1369, HO1370, HO1371, HO1372, HO1373, HO1374, HO1375, HO1376, HO1377, HO1378, HO1379, HO1380, HO1381, HO1382, HO1383, HO1384, HO1385, HO1386, HO1387, HO1388, HO1389, HO1390, HO1391, HO1392, HO1393, HO1394, HO1395, HO1396, HO1397, HO1398, HO1399, HO1400, HO1401, HO1402, HO1403, HO1404, HO1405, HO1406, HO1407, HO1408, HO1409, HO1410, HO1411, HO1412, HO1413, HO1414, HO1415, HO1416, HO1417, HO1418, HO1419, HO1420, HO1421, HO1422, HO1423, HO1424, HO1425, HO1426, HO1427, HO1428, HO1429, HO1430, HO1431, HO1432, HO1433, HO1434, HO1435, HO1436, HO1437, HO1438, HO1439, HO1440, HO1441, HO1442, HO1443, HO1444, HO1445, HO1446, HO1447, HO1448, HO1449, HO1450, HO1451, HO1452, HO1453, HO1454, HO1455, HO1456, HO1457, HO1458, HO1459, HO1460, HO1461, HO1462, HO1463, HO1464, HO1465, HO1466, HO1467, HO1468, HO1469, HO1470, HO1471, HO1472, HO1473, HO1474, HO1475, HO1476, HO1477, HO1478, HO1479, HO1480, HO1481, HO1482, HO1483, HO1484, HO1485, HO1486, HO1487, HO1488, HO1489, HO1490, HO1491, HO1492, HO1493, HO1494, HO1495, HO1496, HO1497, HO1498, HO1499, HO1500, HO1501, HO1502, HO1503, HO1504, HO1505, HO1506, HO1507, HO1508, HO1509, HO1510, HO1511, HO1512, HO1513, HO1514, HO1515, HO1516, HO1517, HO1518, HO1519, HO1520, HO1521, HO1522, HO1523, HO1524, HO1525, HO1526, HO1527, HO1528, HO1529, HO1530, HO1531, HO1532, HO1533, HO1534, HO1535, HO1536, HO1537, HO1538, HO1539, HO1540, HO1541, HO1542, HO1543, HO1544, HO1545, HO1546, HO1547, HO1548, HO1549, HO1550, HO1551, HO1552, HO1553, HO1554, HO1555, HO1556, HO1557, HO1558, HO1559, HO1560, HO1561, HO1562, HO1563, HO1564, HO1565, HO1566, HO1567, HO1568, HO1569, HO1570, HO1571, HO1572, HO1573, HO1574, HO1575, HO1576, HO1577, HO1578, HO1579, HO1580, HO1581, HO1582, HO1583, HO1584, HO1585, HO1586, HO1587, HO1588, HO1589, HO1590, HO1591, HO1592, HO1593, HO1594, HO1595, HO1596, HO1597, HO1598, HO1599, HO1600, HO1601, HO1602, HO1603, HO1604, HO1605, HO1606, HO1607, HO1608, HO1609, HO1610, HO1611, HO1612, HO1613, HO1614, HO1615, HO1616, HO1617, HO1618, HO1619, HO1620, HO1621, HO1622, HO1623, HO1624, HO1625, HO1626, HO1627, HO1628, HO1629, HO1630, HO1631, HO1632, HO1633, HO1634, HO1635, HO1636, HO1637, HO1638, HO1639, HO1640, HO1641, HO1642, HO1643, HO1644, HO1645, HO1646, HO1647, HO1648, HO1649, HO1650, HO1651, HO1652, HO1653, HO1654, HO1655, HO1656, HO1657, HO1658, HO1659, HO1660, HO1661, HO1662, HO1663, HO1664, HO1665, HO1666, HO1667, HO1668, HO1669, HO1670, HO1671, HO1672, HO1673, HO1674, HO1675, HO1676, HO1677, HO1678, HO1679, HO1680, HO1681, HO1682, HO1683, HO1684, HO1685, HO1686, HO1687, HO1688, HO1689, HO1690, HO1691, HO1692, HO1693, HO1694, HO1695, HO1696, HO1697, HO1698, HO1699, HO1700, HO1701, HO1702, HO1703, HO1704, HO1705, HO1706, HO1707, HO1708, HO1709, HO1710, HO1711, HO1712, HO1713, HO1714, HO1715, HO1716, HO1717, HO1718, HO1719, HO1720, HO1721, HO1722, HO1723, HO1724, HO1725, HO1726, HO1727, HO1728, HO1729, HO1730, HO1731, HO1732, HO1733, HO1734, HO1735, HO1736, HO1737, HO1738, HO1739, HO1740, HO1741, HO1742, HO1743, HO1744, HO1745, HO1746, HO1747, HO1748, HO1749, HO1750, HO1751, HO1752, HO1753, HO1754, HO1755, HO1756, HO1757, HO1758, HO1759, HO1760, HO1761, HO1762, HO1763, HO1764, HO1765, HO1766, HO1767, HO1768, HO1769, HO1770, HO1771, HO1772, HO1773, HO1774, HO1775, HO1776, HO1777, HO1778, HO1779, HO1780, HO1781, HO1782, HO1783, HO1784, HO1785, HO1786, HO1787, HO1788, HO1789, HO1790, HO1791, HO1792, HO1793, HO1794, HO1795, HO1796, HO1797, HO1798, HO1799, HO1800, HO1801, HO1802, HO1803, HO1804, HO1805, HO1806, HO1807, HO1808, HO1809, HO1810, HO1811, HO1812, HO1813, HO1814, HO1815, HO1816, HO1817, HO1818, HO1819, HO1820, HO1821, HO1822, HO1823, HO1824, HO1825, HO1826, HO1827, HO1828, HO1829, HO1830, HO1831, HO1832, HO1833, HO1834, HO1835, HO1836, HO1837, HO1838, HO1839, HO1840, HO1841, HO1842, HO1843, HO1844, HO1845, HO1846, HO1847, HO1848, HO1849, HO1850, HO1851, HO1852, HO1853, HO1854, HO1855, HO1856, HO1857, HO1858, HO1859, HO1860, HO1861, HO1862, HO1863, HO1864, HO1865, HO1866, HO1867, HO1868, HO1869, HO1870, HO1871, HO1872, HO1873, HO1874, HO1875, HO1876, HO1877, HO1878, HO1879, HO1880, HO1881, HO1882, HO1883, HO1884, HO1885, HO1886, HO1887, HO1888, HO1889, HO1890, HO1891, HO1892, HO1893, HO1894, HO1895, HO1896, HO1897, HO1898, HO1899, HO1900, HO1901, HO1902, HO1903, HO1904, HO1905, HO1906, HO1907, HO1908, HO1909, HO1910, HO1911, HO1912, HO1913, HO1914, HO1915, HO1916, HO1917, HO1918, HO1919, HO1920, HO1921, HO1922, HO1923, HO1924, HO1925, HO1926, HO1927, HO1928, HO1929, HO1930, HO1931, HO1932, HO1933, HO1934, HO1935, HO1936, HO1937, HO1938, HO1939, HO1940, HO1941, HO1942, HO1943, HO1944, HO1945, HO1946, HO1947, HO1948, HO1949, HO1950, HO1951, HO1952, HO1953, HO1954, HO1955, HO1956, HO1957, HO1958, HO1959, HO1960, HO1961, HO1962, HO1963, HO1964, HO1965, HO1966, HO1967, HO1968, HO1969, HO1970, HO1971, HO1972, HO1973, HO1974, HO1975, HO1976, HO1977, HO1978, HO1979, HO1980, HO1981, HO1982, HO1983, HO198

ILLINOIS • Maryville

Large 60' x 70' customer operated DCC HO layout. Located 17 miles from St. Louis near I-70/I-55 exit 15B. For shop hours/maps pictures, layout construction times, train running see www.k-10smodeltrains.com

K-10'S MODEL TRAINS

19 Schiber Court 618-288-9720

ILLINOIS • Mundelein

Specializing in trains, HO, N, O, G, Lionel. Books and videos. Northern IL railfan headquarters. Closed Monday. Please call for other hours. Fax 847-949-8687. ronhobby@aol.com

RON'S MUNDELEIN HOBBIES

431 N. Lake St. (Rt. 45) 847-949-8680

ILLINOIS • Springfield

HO / G / N.
Special orders / discount prices.
Display layouts / clinics / assistance.
Call for hours.

CASTLE TRAINS & TREASURES

4782 Old Jacksonville Rd. 217-793-0407

INDIANA • Bremen

Small town. Large shop, O, HO & N scales. Discounts. Three operating O, HO & N layouts. Large selection since 1961.
Mon, Tues, Thur, Fri 10-6; Sat 10-4.

BREMEN HOBBIES

308 N. Bowen Ave., SR 331 574-546-3807

INDIANA • Dyer

N, HO & O, DCC & Digitrax Dealer. Atlas, Athearn, BLJ & Walther's. Plastics, modeling supplies & detail parts. Special orders. Competitive prices. Mon - Fri 10-6; Sat 10-5; Sun 11-3. www.parklanehobbiesonline.com

PARK LANE HOBBIES

1080 Joliet St. (US 30) 219-322-1123

INDIANA • Indianapolis

Bachmann- HO-50+ new engines/500+ rolling stock including Thomas- N scale/50+ new engines/300+ rolling stock- On30/70+ engines 100+ rolling stock- 400+ used DCC pieces- 1,000+ card. Open every day but Xmas, 11-6

SANFORD & SON TRAIN YARD

3444 North Shadeland Ave. 317-748-3337

INDIANA • Indianapolis

Trains are our only business! HO, N, O27, Brass, books, magazines, detail parts, paints & accessories. 1 block West of Shadeland Ave. on Washington St.
Mon-Sat 10:30-6. www.waynestrains.biz

TRAIN CENTRAL

6742 E. Washington (U.S. 40) 317-375-0832

INDIANA • Lafayette

New location. You have to see it to believe it. Color photos, rolling stock, structures, detail parts; HO, HO-N3, O, N scales.
Monday - Friday 12-5; Sat 10-5.
Evenings by appointment.

HAWKINS RAIL SERVICES

3501 Union St., Suite 6 765-742-5577

IOWA • Urbandale

N, HO, & O
Lionel, MTH, Atlas
Exit #129 I-80/I-35, 2 miles south
Iowa's premier Model Railroad store
Open 7 days a week.

HOBBY HAVEN

2575 86th Street 515-276-8785

KANSAS • Overland Park (KC Area)

O, S, HO, N, Z & G Scale
Lionel, MTH, A/V, Märklin, LGB & more!
New, Used & Vintage. Extensive scenery line.
Repair, custom work & layouts.
www.fredtrainshop.com

FRED'S TRAIN SHOP

7327 West 80th St. 913-383-3500

MAINE • Yarmouth

Specializing in HO trains. Custom weathering, painting, DCC, scenery, diorama building, structure building. Between Falmouth and Freeport on Route 1. Tues - Sat 10am-6pm (Call ahead Mon) www.mainemodelworks.com

MAINE MODELWORKS

374 US Route One, Unit 2 207-781-8300

MAINE • York

Model trains & slot cars. Most scales available. Accessories & services. New, pre-owned & vintage. Working layout! Open 7 days 10-5
www.yorkvillagegmarketplace.com

YORK VILLAGE MARKETPLACE

891 U.S. Route 1 207-363-4830

MARYLAND • Annapolis

If we don't have it, we'll get it! LGB, Woodland Scenics, Walther's Dealer, Aristio, Delton, Pola, Lionel, Bachmann, Spectrum, Proto 2000, Mon - Sat 10-6.
Full line Kalmbach! starhobby1@msn.com

STAR HOBBY

1564 Whitehall Rd. 410-349-4290/4291

MARYLAND • Baltimore/Cockeysville

Model RR headquarters since 1913. Excellent selection HO & N equipment & accessories; Lionel. All at disc. prices.
Mon - Fri 10-5; Sat 9-5.
www.modeltrainstuff.com

M.B. KLEIN

243 Cockeysville Rd., Ste. A 410-229-9995

MARYLAND • Sykesville

Central Maryland's best kept secret - a family friendly model train shop that specializes in HO & N Scale at very generous discounts. Please call for hours or visit us at www.themoosecaboose.com

THE MOOSE CABOOSE

1341 W. Liberty Rd. 410-795-4610

MASSACHUSETTS • Ashburnham

Specializing in New England road names, HO/N Scale. Micro-Trains, Walther's, Horizon. Special orders discounted. Tu & Th 10-4, Wed & Fri 11-6, Sat 10-6 www.halfpricehobby.com
service@halfpricehobby.com

SHEPAUG RAILROAD COMPANY

23 Westminster St. 978-537-2277

MASSACHUSETTS • Duxbury

G - 1 - O - S - HO - N - Z
Buy - Sell - Trade - New - Used - Repairs
Marklin Dealer
Wednesday - Sunday 11-6
DUXBURY GREEN, INC.
382 Kingstown Way (Rt. 53) 781-585-2164

MICHIGAN • Bridgeport

Scales 2 to G. All at discount prices.
Am. Models, Aristio, Athearn, Atlas, Bachmann, Con-Cor, IHC, USA, Kadee, Kato, K-Line, Lionel, MTH, Walther's, LGB, HLW.
www.jvrrailroad.com

JUNCTION VALLEY RR HOBBY SHOP

7065 Dixie Hwy. 989-777-3480

MICHIGAN • Flint

G (LGB & 1:20.3), O (Lionel & MTH), On30, HO, N, & Z, Locos, cars, figures, buildings, track, kits, scenery supplies, details, books & videos.
Digitrax Dealer. Repair service. VISA/MC.
Mon-Fri 10-8, Sat 10-6, Sun 12-5

RIDERS HOBBY SHOP

2061 S Linden Rd 810-720-2500

MICHIGAN • Fraser

Full line hobby shop.
Open Mon - Fri 10-8, Sat 10-6, Sun 12-5
www.pdhobbyshop.com

P & D HOBBY SHOP

31280 Groesbeck Hwy. 586-296-6116

MICHIGAN • Grand Rapids

LGB, O (Lionel, MTH & Scale), HO, N & Z, Locos, cars, figures, buildings, track, tools, kits, scenery supplies, details, books, videos.
Digitrax Dealer. Repair service VISA/MC
Open Mon - Fri 10-8 & Sat 10-7

RIDER'S HOBBY SHOP

2055 28th Street SE 616-247-9933

MICHIGAN • Leslie

Michigan's Largest N Scale Dealer.
Tue - Thur 1-9, Fri & Sat 1-5
*Closed Saturdays Memorial to Labor Day.
We also carry Z, HO & G Scales.
www.ggrtrains.com

G&G TRAINS

1800 Baseline Road 517-589-5977

MICHIGAN • Saginaw

Personalized Customer Service!
Trains & Accessories N to G
Authorized Lionel/K-Line, MTH, DIGITRAX
Sales & Service - over 12,000 parts
www.traindoctor.com

BRASSEUR ELECTRIC TRAINS

410 Court St. 989-793-4753

MICHIGAN • Traverse City

Let your imagination run wild!
Z to G, Lionel, scenery, tools, structures, scratchbuilding supplies, special orders, ships, armor, cars, more...

TRAINS & THINGS HOBBIES

210 East Front St. 231-947-1353

MICHIGAN • Troy

FORMERLY MERRI-SEVEN • NEW LOCATION
All scales Z thru G, new and used
Complete selection of RR equipment/supplies
BUY • SELL • REPAIR • PARTS
Tues - Fri 11-7, Sat 11-6

EMPIRE TRAINS & HOBBIES

3278 Rochester Rd. 248-680-6500

MICHIGAN • Wyoming

HO, N and Marx bought and sold
American Flyer and Lionel also
Tuesday thru Friday 12-6, Saturday 10-5
Other hours available by appt. Please call.

HOBBY RECYCLING

2313 Lee St. SW 616-257-7155

MISSOURI • Branson/Hollister

The Ozarks' full-line hobby center
N-G scale trains & building accessories
Mon - Sat 9am-5pm, Closed Sun
E-mail: bransonhobbyctr@aol.com
www.bransonhobbycenter.com

BRANSON HOBBY CENTER

251 Saint James St. 417-335-6624

MONTANA • Billings

Model railroading headquarters for the Northern Rockies. HO, HO-N3 & N scale. Kits, parts, tools, books. Tues-Fri 10-5:30; Sat 10-4.
Closed Sun & Mon. www.jimsjunction.com

JIM'S JUNCTION

811-B 16th St. West 406-259-5354

Say you saw their
directory ad in
Model Railroader.

NEBRASKA • Deshler

Largest HO/N scale inventory from Denver to Chicago. Stop in and say WOW! All major brands plus books, videos, tools & scenery.
Mon-Fri 10-6, Weekend hours vary - call ahead! www.springcreekmodeltrains.com

SPRING CREEK MODEL TRAINS

304 E. Bryson Ave. 402-365-7628

NEBRASKA • Omaha

Trains & supplies for all scales Z-G. We are DCC ready & installation service available.
Service work, repairs, technical support.
Family owned since 1938. Mon-Fri 8:00-5:30; and Sat 10:00-5:00 www.houseoftrains.com

HOUSE OF TRAINS

8106 Maple St. 402-934-RAIL (7245)

NEVADA • Las Vegas

While in Las Vegas,
check out our train selection.
Close to the Las Vegas strip.
Hours: Mon - Fri 10-7, Sat 10-6, Sun Noon-5.
HOBBYTRON USA
4590 W. Sahara Ave., #103 702-889-9554

NEVADA • Las Vegas

Electric trains & accessories
N, HO, S, O
Lionel/American Flyer Dealer

TRAIN EXCHANGE

6008 Boulder Hwy. 702-456-8766

NEVADA • Las Vegas

Big selection of HO, N and Lionel O Gauge trains. Only 7 miles west of the Las Vegas strip. www.westsidetrainstv.com

WESTSIDE TRAINS

2960 S. Durango #117 702-254-9475

NEW HAMPSHIRE • Hampton Falls

HO - N - O & accessories.
Carrying Atlas, Athearn, MTH-RailKing, Lionel, Williams
Open 7 days a week 10-5.

BRENTWOOD ANTIQUES

106 Lafayette Rd. (Rt. 1) 603-929-1441

NEW HAMPSHIRE • Intervale

Z, N, HO, O, G, LGB, Märklin.
Hobby Shop, Museum.
16,000 square feet.
www.hartmannr.com

HARTMANN MODEL RAILROAD, LTD.

15 Town Hall Rd 603-356-9922 / 9933

NEW JERSEY • Cedar Grove

Celebrating our 33rd Anniversary 1979-2013.
Authorized Märklin Digital Dealer, Lionel Station & V.A.D. LGB Train Stop.
O, O-27, HO, N & Z scale.
We sell the best & service the rest.

TONY'S TRAIN TOWN

575 Pompton Ave. 973-857-2337

NEW JERSEY • Kenvil

Full service hobbies, a full line of HO, N, 3-Rail, military, cars, boats, planes, dollhouses, scratchbuilding supplies, plus details-details-details!

KENVIL HOBBIES

590 Rt. 46 973-584-1188

NEW JERSEY • Mountain Lakes

One of northern NJ's largest train stores. Auth. Lionel sales, service, and parts. Old Lionel trains bought and sold. LGB, Atlas, Life-Like, MDK. Auth. Walther's dealer.

THE TRAIN STATION

Romaine Road 973-263-1979

NEW JERSEY • Piscataway

Serving hobbyists since 1933.
Large selection of HO, N, S & O scale Railroad books - complete repair service
Mon., Tues. & Thurs. 10am-6pm,
Sat. 10am-5pm, Wed. & Fri. 10am-9pm.

THE MODEL RAILROAD SHOP, INC.

Vail Ave. & New Market Rd. 732-968-5696

NEW JERSEY • Point Pleasant Beach

A Complete Model Railroad Store • Over 600 Engines in Stock • N, HO • O DCC/DCC/TMCC
Authorized MTH & LIONEL Dealer. Walther's • Atlas • Atlas O • Sun - Thur 10-6, Fri - Sat 10-8
www.thetrainroomnj.com

THE TRAIN ROOM

715 Arnold Ave. 732-892-5145

NEW JERSEY • Somerville

Full line all scales N thru G.
Specializing in service.
Tues to Fri 11 am - 7 pm;
Sat 11 am - 5 pm; Sun 12 pm - 4 pm
www.biglittle.com Fax # 908-685-8894

THE BIG LITTLE RAILROAD SHOP

63 W. Main St. 908-685-8892

NEW JERSEY • Westmont

Athearn, Atlas, Bowser, Walther's.
Structures, books, etc.
Exclusively trains since 1955.
HO and N.

SATTLER'S HOBBY SHOP

14 Haddon Ave. 856-854-7136

NEW YORK • Horseheads

N, HO, O, & G scales.
Authorized Lionel dealer.
www.wholesaletrains.com

LANTZ HOBBY SHOP

3312 S. Main St. 607-215-0019

NEW YORK • Hurley

Trains - Z, N, HO, S, O, G scale, models, rockets, hobby supplies. Lionel & MTH authorized dealer. 4 working layouts. Repairs, buy/sell, open 7 days. An old fashioned general store. www.hurleycountrystore.biz

HURLEY COUNTRY STORE INC

2 Wamsley Pl. (Old Hurley) 845-338-4843

NEW YORK • Mineola L.I.

Since 1949. Long Island's largest full-line hobby superstore. 10,000 sq. ft. Featuring MTH, Lionel, Märklin HO and Z, HO and N scales. Books, detail parts and much more. www.willishobbies.com

WILLIS HOBBIES INC

300 Willis Ave. 516-746-3944

NEW YORK • Smithtown

O, HO, & N gauges.
All major lines carried.
We are model railroaders.

3 GUY'S HOBBIES

10 Lawrence Ave. 631-265-8303

NEW YORK • Syracuse (East)

100% scale model railroading. HO, S, O, N. Northeastern, New England, Canadian specialists. Exclusive; Northeast Modeler, West Shore Line kits. Closed Mon. Call for free map & hours. www.centralhobby.com

CENTRAL HOBBY SUPPLY

102 Walter Dr. 315-437-6630

NEW YORK • Wellsville

O, HO & N. Weaver, Atlas, Athearn, MDC & Walther's. Start-to-finish railroad supplies. Magazines, Craftsman kits & Kadee. Old local lines like W.A.G., Erie & E.L.
Tues. - Fri. 12-5, Sat. 10-3.

EAST DYKE DEPOT

332 E. Dyke St. (Rt. 417E) 585-593-0005

NORTH CAROLINA • Arden

HO, N, Model Trains and accessories.
Broadway Limited, Kato, Walther's, Digitrax, Atlas, Athearn, and more.
Mon - Fri 9:00am-5:00pm Order by phone 24 hours. www.factorydirecttrains.com

FACTORY DIRECT TRAINS

7 Glenn Bridge Rd., Ste. B 800-990-3381

NORTH CAROLINA • Raleigh/Wake Forest

Authorized Digitrax, Soundtraxx, Walther's, Bowser dealer. DCC experts. Installation & Service. Computerized customer order tracking. "Sharing the joy of model railroading" www.trainbuddy.com

TRAIN BUDDY™ PRODUCTS

1200 Jenkins Rd. 919-562-4378

NORTH CAROLINA • Spencer

Across from NC Trans Museum. Big selection of trains in all scales. Digitrax Dealer. RR videos/books & children's toys Tue-Sat: 10-5:30. www.littlechoochoochooshop.com or info@littlechoochoochooshop.com

OREGON • Portland

Your complete model railroad store.
Gauges 2 through G.
Mon - Fri 10-6, Sat 10-5, Closed Sunday
www.wsor.com

WHISTLE STOP TRAINS

11724 SE Turkey St. 503-761-1822

PENNSYLVANIA • Blue Ridge Summit

The Exclusive model railroad store.
From N to G, we stock it all.
OPEN 7 days a week.
Only minutes from Frederick, MD.
www.mainlinehobby.net

MAINLINE HOBBY SUPPLY

15066 Buchanan Trail E. 717-794-2860

PENNSYLVANIA • Bristol

We carry most major brands and accessories for N - G gauge. **SELL - BUY - REPAIR**
March - Sept. W - F 11-8; Sat 11-7; Sun 11-6
www.trainpops.com trainpopsattic@gmail.com

TRAINPOPS ATTIC

315 Mill St. 215-788-2014

PENNSYLVANIA • Broomall

Lionel, American Flyer, LGB-Aristo.
HO, N, O, G, RW, Mon & Fri 9-5 gauges
bought, sold & traded. Auth. service center.
Mon, Wed, Fri 10-9, Tue & Thu 10-7, Sat 10-5
www.nstrains.com

NICHOLAS SMITH TRAINS

2343 West Chester Pike 610-353-8585

PENNSYLVANIA • Duncansville (Altoona)

Everything in the store is discounted. Trains, models, R/C, HO, and pinewood derby.
Email: littlelaniartariver@aol.com
Hours: Tues - Fri 10-6; Sat 10-5; Sun 12-4
Visit www.holidayhobbies.com

HOLIDAY HOBBIES

1205 Plank Road 814-696-3533

PENNSYLVANIA • Gettysburg

Everything for the model railroader.
Huge selection of brass locos. Complete stock N & HO gauge. Daily 10-5, Sun 12-5.
E-mail: tghbush1@comcast.net
www.gilbertshobbies.net

TOMMY GILBERT'S

346 E. Water Street 717-337-1992

PENNSYLVANIA • Jeannette

Trains exclusively. Lionel, MTH, HO & N. Supplies and accessories at discount prices.
Open daily 9:30-6. Mon & Fri 9:30-7, Sat 9-4.
Closed Tue. Expanded hours Nov and Dec.
www.needztrains.com

NIEDZALKOSKI'S TRAIN SHOP

214 South 4th Street 724-523-8035

PENNSYLVANIA • Landisville (Lancaster)

Model Trains New & Used
Supplies, Paint, Tools
Rockets, Slot Cars, Lionel/MTH Trains
Tue - Thur 10-6, Fri 10-7, Sat 10-4
We buy train collections large & small

COOLTRAINS HOBBIES

106 W. Main Street 717-898-7119

PENNSYLVANIA • Lansdale

Exclusively Trains
Specializing in DCC
NCE • Digitrax • Tsunami
www.linsjunction.com
linsjunction@comcast.net

LIN'S JUNCTION

128 S. Line St. 215-412-7711

PENNSYLVANIA • Montoursville

Mon - Fri 9:50-3, Sat 9-5
Extended weekday & Sat hours in Nov. & Dec.
E-mail: emrsm@chillnet.net
www.englishmodelrailroad.com

ENGLISH'S MODEL RAILROAD SUPPLY

201 Streibigh Lane 570-368-2516

PENNSYLVANIA • Philadelphia (Feasterville)

Lionel, American Flyer, LGB, MTH, Marklin, Bachmann, Williams. HO, N & G. Buy, sell & repair. Mon-Fri 12-8, Sat 10-5
www.JoesTrainStation.com

JOE'S TRAIN STATION

21 East Street Rd. 215-322-5182

PENNSYLVANIA • Strasburg

From trains to diacast to scenery, everything for the layout builder. Open 7 days a week.
N, HO, O, Lionel, LGB.
Buy, sell, trade used trains.
Located adjacent to the Choo Choo Barn.

STRASBURG TRAIN SHOP

Route 741 East 717-687-0464

RHODE ISLAND • Warwick

HO trains & acces., detail parts, plastic & craftsperson kits. Hobby supplies, tools.
Tue - Fri 12-8, Sat 10-6 (Sun Nov - Dec 12-4)
Closed Mon. 1/2mi. W. of airport.
E-mail: aahobbies@gmail.com

A. A. HOBBIES, INC.

655 Jefferson Blvd. 401-737-7111

SOUTH CAROLINA • Greenville

Model Trains Only - ALL AT DISCOUNT PRICES! 130,000+ items in all scales available online 24/7 at: www.BlueRidgeHobbies.com
Retail Store features HO, N and O.
Open Tue, Wed & Fri 9:00am-1:00pm

BLUE RIDGE HOBBIES

2327 N. Pleasantburg Dr., Ste. H 800-988-2125

SOUTH CAROLINA • West Columbia

All scales, all major brands of model railroad equipment.
We buy & sell used Lionel trains.
Open daily 10-6. Closed Sun.

NEW BROOKLAND RR & HOBBY SHOP

405 State Street 803-971-3958

TENNESSEE • Knoxville

Located in Knoxville's premier shopping destination. We are the area's most diverse hobby store with a large selection of HO, N, and O. Open 7 days a week.
Turkey Creek Area.

HOBBYTOWN USA

11145 Turkey Dr. 865-675-1975

TENNESSEE • Nashville

HO, O, N, & scale. Special orders plus plastic kits, rockets, & more. I-65, Exit 74 E or I-24, Exit 59 W. Near Old Hickory Blvd. & Nolensville Rd. Mon 12-6; Tues-Wed 10-6; Thur 10-9; Fri-Sat 10-6, www.hchobbies.com

HUDSON CLASSIC HOBBIES

15119 Old Hickory Blvd. 615-833-8337

TENNESSEE • Wartrace

Located next to CSX Nashville-Chattanooga mainline 10 min. off I-24 exit #97. Model railroad supplies, operating HO, O & N scale trains, railroadiana, collectibles. Wed-Sat 10-5; Sun 1-5 www.dixieflyertrains.com

THE DIXIE FLYER

98 Main St. 1-800-465-0448

TEXAS • Athens

Specializing in HO, HO N3 & Brass
Blackstone • Tsunami • Intermountain • Kadec
Digitrax Dealer • Walther's • Coach Yard
Decoder installs & custom painting.
jack@harrishobbies.com www.harrishobbies.com

HARRIS HOBBIES

9323 CR 1127 903-489-2646

TEXAS • Corpus Christi/Portland

HO, N, O and G scale. New and used trains. Radio control planes, boats and cars.
Plastic kits, rockets - all at discount prices.
Thur & Fri 3pm-6pm, Sat noon-6pm,
Sun 2-5pm and also by appointment.

JIM'S HOBBIES

207 7th St. (Portland) 361-229-0229

TEXAS • Dallas

Official Lionel Layout Builder Since 2001
Traininger shop/showroom includes:
Custom Layouts, Modulars, Model Stations,
Bridge Kits...come see...there's always something new!!! www.TrainWorxStore.com

TW TRAINWORX

2808 McGowan St. 877-881-4997

TEXAS • Dallas (Addison)

Great discounts on thousands of G to Z scale items. NCE & Digitrax dealer.
Monday - Saturday 10-6.

DISCOUNT MODEL TRAINS

4641 Ratliff Lane 972-931-8135

TEXAS • Ft. Worth (N. Richland Hills)

Craftsman kits, Details/Tools.
DCC sales and installation.
Tues - Fri 11:30-6:00; Sat 10:00-6:00;
Closed Sun & Mon
www.angelhobbies.com

ANGELO HOBBIES

5600 Rufe Snow, Suite 106 817-428-0190

TEXAS • Houston

HO & N, Lionel trains.
Complete line of plastic kits, military and architecture supplies.
Open Mon - Fri 11am-6pm, Sat 10am-5pm
www.gandmodelshop.com

G & G MODEL SHOP

2522 Times Blvd. 713-529-7752

TEXAS • Houston

All trains, all scales. Magazines, Books, Videos, Repairs, Brass, Consignments. Discount program, will ship. papabenstrains@gmail.com
M, Tu, Th & F 10-6; W 10-7; Sat 10-5; Sun 12-5
Major Credit Cards. www.papabens.com

PAPA BEN'S TRAIN PLACE

4007-E Bellaire Blvd. 713-523-5600

TEXAS • Irving (Dallas Area)

U/C and R/C planes. HO, N trains.
RR & aviation magazines and books.
Scale plastic kits, balssa wood.
Mon 1-6, Tue-Wed 12-6, Thur-Fri 10:30-7;
Sat 10:30-6. www.malhooby.com

M-A-L HOBBY SHOP

108 S. Lee Street 972-438-9233

TEXAS • San Antonio

Model railroading our specialty.
Marklin, G, HO, N, O, Z.
Superdetailing parts galore.
Books, structures, figures and tools.
Tuesday - Saturday 10am-6pm

DIBBLE'S HOBBIES

1029 Donaldson Ave. 210-735-7721

VERMONT • Rutland

Exclusively Model Railroading. Most major lines. Brass, custom painted models.
Competitive prices. Personal service.
Open by appt. Eves 6-10, Sat 10-10.

THE STEAM SHACK

14 Engram Avenue 802-775-2736

VIRGINIA • Ashland (Richmond)

OPEN 7 DAYS MON-SAT: 10-7; SUN: 11-4
Authorized Dealer Most Brands G, HO, N
New & Vintage, Repairs, Spec. Order, Layaway
RAILFANS!!! 60 trains pass our store daily.
I-95 Exit 2B West 1.2 mi to Tracks

TINY TIM'S TOYS & TRAINS

104 S. Railroad Ave. 804-368-0063

VIRGINIA • Midlothian (Richmond)

HO, N, Lionel Trains
Brass, DCC, Repairs & Installations
Located in the Village Market Place
Open Mon - Thur 10-6; Fri 10-8, Sat 10-4

TODD'S HOBBIES

13140 Midlothian Turnpike 804-464-4900

VIRGINIA • Roanoke

Lionel, LGB, G, AF, HO, N & MTH
Buy, sell, trade, repair.
Mon-Fri 10-6; Sat 10-5
Two minutes off Exit 146 on I-81.

RAIL YARD HOBBY SHOP

7547 Williamson Rd. 540-362-1714

VIRGINIA/MARYLAND • Chantilly, VA

Full service storefront & online store. All makes & scales. New/used trains sales, service, repair & upgrades. Retail Store - www.traindepot.biz
Authorized Lionel Service Station & Digitrax dealer. Online Sales Visit www.JTTrains.com

TRAIN DEPOT

13944 Willard Rd., Suite 1 703-953-3767

WASHINGTON • Burien (Seattle)

New location - downtown Burien.
Close to SEA-TAC airport - short drive from downtown Seattle. New & vintage electric trains in all scales. Tue-Sat 11-6
www.electrictrainshop.com

THE ELECTRIC TRAIN SHOP

625 SW 152nd St. 206-244-7077

WASHINGTON • Kirkland

Lionel, American Flyer, LGB, HO, N.
Buy, sell, and repair.
Supplying all your railroading needs.
Open Mon-Sat.
www.eastsidetrains.com

EASTSIDE TRAINS, INC.

217 Central Way 425-828-4098

WASHINGTON • Spokane

100% trains.
Open Monday-Friday 10am - 6pm.
Always open Saturday 10 - 5.
Closed Sunday & holidays.

SUNSET JUNCTION MODEL TRAINS

419 E. Sprague Ave 888-838-2379

WASHINGTON • Tacoma

Lionel, LGB, HO, N, G
Atheam, Bachmann, Walther's, Micro-Trains
Books, plastic kits, supplies, Thomas
See our website! www.tacomatrain.com
Mon - Sat 10-6 (Sun 11-4 Nov-Jan)

TACOMA TRAINS

3813 North 26th St. 253-756-7517

WISCONSIN • Bay View (Milwaukee)

Specializing in HO, N, Books, DVD's, DCC.
Special Orders Welcome. Discount Prices.
Tue-Wed 11-5, Thur 11-6, Fri 11-5, Sat 9:30-3
www.southsidetrains.com

SOUTH SIDE TRAINS

3979 S. Howell Ave. 414-482-1566

WISCONSIN • Green Bay

Exclusively trains, specializing in DCC, N, G, & HO. DCC installation and award winning custom painting and building available.
www.ENGINEHOUSESERVICES.COM

ENGINEHOUSE SERVICES, LLC

2737 N. Packerland Dr. 2H 920-490-4839

WISCONSIN • Milwaukee

Exclusively Model Railroading since 1932.
One-stop shopping from Z to G.
800-487-2467 walthers.com

WALTHERS SHOWROOM

5619 W. Florist Avenue 414-461-1050

WISCONSIN • Monroe

N & HO scale trains & accessories, plastic kits, books, videos & tools.
Summer hours: Tues - Sat 10-5
Winters: Add Sun 12-4

THE HOBBY DEPOT

835 17th St. 608-325-5107

WISCONSIN • Waukesha (Pewaukee)

Marklin • Lionel • MTH • AF • LGB • Z to G
• buildings • scenery • detail parts • books •
scratchbuilding supplies • special orders •
NMRA discounts • Mon - Fri 11-8 • Sat 10-5
Sun 12-5 www.hiawathahobbies.com

JETCO'S HIAWATHA HOBBIES

2026 Silvernail Rd. 262-544-4131

CANADA-AB • Calgary

All Scales, New & Used, Brass,
Lionel, Collectibles, Books and more!
www.trainandsuch.com

TRAINS AND SUCH

6043 Centre Street SW 403-277-7226

CANADA-BC • Kamloops

Model trains in G, O, S, HO, N, Z
Old toy trains, railway antiques, art, books,
DVDs, souvenirs and Thomas too.
Canadian road names a specialty.
www.kellyskaboose.ca

KELLY'S KABOOSE, THE RAILWAY STORE

634 Victoria Street 250-377-8510

CANADA-BC • Langley (VAN)

Specializing in European Model Trains, Märklin, Roco, LGB, Carrara, Brawa, Fleischmann & more. Huge selection of trains, kits, & access.
HO-N-Z-1-G Scales. Mon-Fri 9-4:30 Sat 10-2.
www.EuroRailHobbies.com

EURO RAIL HOBBIES & MORE INC

1526 232nd St. 866-799-6098

CANADA-BC • Vancouver

Large selection of model RR supplies including Min. by Eric, Athearn/MDC, Atlas, Peco, Shinhara, Rapido, SoundTraxx, brass, etc.
Special orders. www.central-hobbies.com
Open 11-6, Friday til 9. Closed Sundays.

CENTRAL HOBBIES

2825 Grandview Hwy. 604-431-0771

CANADA-ON • Dundas

Your full line hobby shop. Open 7 days a week.
N, HO, AF, Lionel, LGB. Scenery and scratchbuilding supplies. Walther's dealer,
kato products. Special orders welcome!
E-mail us at: sales@dundasvalleyhobby.ca

DUNDAS VALLEY HOBBY

15 Cootes Dr. 905-628-9156

CANADA-ON • Fergus

Model Trains for Beginners to the Experts.
Buy, Sell, Trade, Repair.
HO, N, O/027, S, G.
Come See Our Trains.
www.2bintrains.on.ca

2B IN TRAINS

6168 Road 29 519-787-3280

CANADA-ON • London

Complete Canadian trains & more N, HO, G, Athearn, Hornby, Peco, Walther's. Special orders, plastics, parts, supplies, books, DVD's.
Mon - Fri 10-6; Sat 9-5. sales@rhhobby.ca
www.rhhobby.ca

BROUGHDALE HOBBY

1444 Glenora Drive 519-434-0600

CANADA-ON • Mississauga

6,000 sq. ft. All Trains!
Premier Selection & Service!
In store clinics and layouts!
Railfan Headquarters! Quick special orders!
www.cvrco.com

CREDIT VALLEY RAILWAY COMPANY, LTD

2900 Argenta Rd. Unit #24 1-800-464-1730

CANADA-ON • Mount Forest

45 Min North of Guelph. Fax# 519-323-3809.
Authorized Lionel value added dealer.
One of Canada's largest Lionel retailers
MTH, K-Line & more. Full line HO dealer.
www.tctrainscanada.com Closed Monday.

THE TRAIN CELLAR

130 Main Street North 519-323-3935

CANADA-ON • Ottawa (Vanier)

One of Canada's leading model shops.
Complete selection of HO & N gauge.
Friendly knowledgeable staff.
Free Parking. On parle Francais.

HOBBY HOUSE, LTD.

80 Montreal Road 613-749-5245

CANADA-ON • Paris

Full line hobby shop. Large stock N, HO.
Special orders weekly, all scales.
All accessories, scenery and supplies.
www.parisjunctionhobbies.com

PARIS JUNCTION HOBBIES



Model Railroader MAGAZINE



NEXT ISSUE

Last look at an N scale Midwestern gem

Visit Daryl Kruse's Union Pacific Geneva Sub, which was first featured in *Model Railroad Planning 2013* while still under construction. It's been dismantled due to a move, but you'll see the finished layout with prototypically long, modern-era trains running through realistic prairie scenery.

A just-right sized layout

One modeler takes us on a tour of his 2 x 4-foot switching module that he can operate at home or connect to a larger club layout.

And more ...

- Build a heritage diesel diorama
- Add sound to a brass steamer
- A great first track plan
- Installing a DCC system

Subscribe today!

1-800-533-6644

www.ModelRailroader.com

DISPLAYADINDEX

We believe that our readers are as important as our advertisers. If you do not receive your merchandise or a reply from an advertiser within a reasonable period, please contact us. Provide details about what you ordered and the amount you paid. If no action is obtained after we forward your complaint to the advertiser, we will not accept further advertising from them. *Model Railroader* magazine, 21027 Crossroads Circle, Waukesha, WI 53187

American Z Line	17	Model Railroader Video Plus DVDs	76
ANE Model Co., Ltd.....	51	Model Railroader Video Plus	65
Atlas Model Railroad Co., Inc.	5	Model Railroader Video Plus Gear	73
Axian Technology.....	51	Modelers Marketplace.....	74-75
Bachmann Industries, Inc.....	84	NCE Corp.	3
Broadway Limited Imports	25	Nicholas Smith Trains.....	13
Caboose Hobbies	51	PECO Products	15
Cadrail / Sandia Software	15	Plastruct, Inc.	51
Circuitron	19	Rapido Trains.....	19
Custom Model Railroads	3	ScaleTrains.com.....	33
CVP Products	25	Showcase Express	63
Digitrax	17	Sievers Benchwork.....	51
Great Midwest Train Show	25	Signature Press	33
Great Train Expo	25	Smith Southwest Model Rail	19
Greenburg Shows	25	SoundTraxx	15
Halfpricehobby.com	33	The Coach Yard.....	63
Hawkins Rail Services	33	Train Collectors Association.....	3
Hawthorne Trains.....	9	Train Control Systems.....	51
Kato USA, Inc.....	83	Train World.....	33
Magnificent Woodworkings.....	13	Wm. K. Walthers, Inc.....	2
Micro Engineering	19	Woodland Scenics.....	7
Micro-Mark	3	Xuron Corporation	51
Model Railroader All-Time Digital Archive ..	72	Z Stuff for Trains.....	19
Model Railroader Books.....	73, 76	Zycon Models	51

The Display Advertiser Index is provided as a service to *Model Railroader* magazine readers. The magazine is not responsible for omissions or for typographical errors in names or page numbers.

Having second thoughts first



Micro SPDT slide switches move the points and change the frog polarity on Perry Squier's HO scale railroad, but they weren't needed for Tony's Micro Engineering turnouts. Tony Koester photo

If only I could anticipate my needs with sufficient accuracy to ensure that I acquire or build enough stuff to meet future requirements, but not so much that I wind up with an inventory rivaling that of many hobby shops. If only.

Case in point: Deciding how to throw the points (switch) of a turnout has led to a lot of head-scratching over the decades. Solutions have ranged from solenoids, to motors, to servos, to over-center springs, to slide switches, to push-pull rods, to interlocking levers.

When neighbor Perry Squier found some SPDT micro slide switches that could be hidden between the head blocks (long ties that support the switch stand) to flip the frog polarity and move the points just the right amount, we decided to give them a try. Of course, that "try" caused us to purchase a few hundred of those tiny switches. But, by golly, they worked really well.

Perry cut off part of the "knob" that projected up and glued NJ International switch stands above them. He then attached the knob to the switch rod ("throw bar") with fine piano wire. The switch, and hence points, are moved by sticking the point of an uncoupling skewer under the switch stand and shoving the truncated knob fore or aft.

Perfect! So I mounted one of those switches alongside every turnout on my layout. It turned out, however, that locomotives will run through most of the Micro Engineering code 70 no. 6 turnouts that I used in Frankfort Yard with

the frog dead. So maybe 75 percent of the work I did was for naught.

Remember when wood paneling (rather than painted hardboard) was all the rage for fascias and valances? I bought some for my old Allegheny Midland layout and was quite pleased with its appearance. But I began to have second thoughts: What would I do when I needed more but discovered the manufacturer had discontinued that pattern?

Well, I did, and they did. I called their headquarters and got a lecture on how they had the right to change their product line. I pointed out I had the right not to buy any more of their products, which must have cost them the tidy sum of, oh, a few hundred dollars.

If you want to see a pained expression on the part of a hobby shop owner or a model manufacturer, utter the word "inventory." Managing inventory is what led to just-in-time manufacturing, where suppliers are entrusted to deliver parts just in time for them to be used on an assembly line. It usually works.

For a hobby shop owner or the wholesaler who supplies him, having unsold kits on the shelf may be a convenience to customers, but it represents tied-up capital that could be invested in faster-selling products, or even taken home to buy groceries or pay the mortgage and taxes. So there's this artful dance whereby the manufacturer tries to determine how many of a specific model he can expect to sell based on the total of the reserva-


tions received from hobby shops, wholesalers, or customers.

That can cause excitement at the consumer end. If we don't hear about the debut of a new model until reservations are closed, we have to hope that a dealer gambled on selling more than his customers reserved, and that we can buy one or more of the "surplus" models. It also means we're often buying sight-unseen and therefore have to rely on our previous experience with that manufacturer to judge the quality. And it means that we may need to buy today most or all of the models we'll need for the foreseeable future, even if we won't need them any time soon.

Example: When Life-Like (now part of Walther's) announced the new Nickel Plate Road S-1 Berkshire, a class that had never been produced in "plastic," I checked with a few dealers about its availability. "We're sold out," they told me. Eek! Since my railroad was designed around heavy use of this type of locomotive, I did what most modelers would do: I panicked! Luckily, a few phone calls and helpful dealers later, I had filled my needs.

Then I found that I had over-bought, as one division I was staging had converted to diesels just before the year I model. I now have a lot of spare parts.

What I really need is a way to convert my second thoughts into better first thoughts, thereby eradicating an ongoing source of considerable anguish.

I'll have to give that concept some serious thought. 

N
Scale

Arriving June 1st!

KATO
PRECISION RAILROAD MODELS



Your Ticket to the Southwest



When Amtrak® took over the Santa Fe's "Super Chief" train, it originally retained the name of the classic silver streamlined service. In 1974, the name was changed from "Super Chief" to "Southwest Limited", a name it retained for 10 years before becoming the "Southwest Chief".

Available as of June 1st, 2016, Kato is producing the **Southwest Limited** as an 8-Car train set, featuring two brand new tooling cars and a new locomotive - the EMD SDP40F (available in DCC-friendly Analog and DCC+Sound Variations, see our web site for details!). This set, along with its sister set the Amtrak "El Capitan" represents two of Amtrak's earliest trains!



106-079 Amtrak El Capitan 10 Car Set

SDP40F Type I BODY Amtrak Ph.I #504	SDP40F Type I BODY Amtrak Ph.I #505	Baggage #1027	Baggage-Dormitory #9991	Step down Coach #9909	Coach #9928	Coach #9931	Diner #9985	Lounge #9972	Coach #9940	Coach #9984	Step down Coach #9907
--	--	------------------	----------------------------	-----------------------------	----------------	----------------	----------------	-----------------	----------------	----------------	-----------------------------

Sleeper Indian Mesa #2216	Sleeper Pine leaf #2724	Dome/ Lounge #9350	Diner #9070	Sleeper Regal Dome #2350	Sleeper Pine Dale #2716	Sleeper Pacific Falls #2810	Baggage Car #1171
---------------------------------	-------------------------------	--------------------------	----------------	--------------------------------	-------------------------------	-----------------------------------	-------------------------

106-081 Amtrak Southwest Limited 8 Car Set

Like the Super Chief, the Southwest Limited was made up of a mixture of ACF, Pullman and Budd-built stainless steel cars. Like the Santa Fe had done before it, Amtrak combined the ex-Super Chief and ex-El Capitan Hi-level cars in its Southwest Limited service, the single-level cars being used as the 1st class portion of the consist.



MSRP 125.00

- #176-9201 N EMD SDP40F Type 1 Amtrak Phase I #504
#176-9202 N EMD SDP40F Type 1 Amtrak Phase I #505



- #106-079 N Amtrak "El Capitan" 10-Car Set 285.00
#106-081 N Amtrak "Southwest Limited" 8-Car Set 230.00



Amtrak and Southwest Limited are registered service marks of the National Railroad Passenger Corporation. Officially licensed by Amtrak.

Kato U.S.A., Inc. 100 Remington Road Schaumburg, IL 60173

847-781-9500

www.katousa.com



NOW IN N SCALE! SOUND VALUE and DCC-READY GG-1 ELECTRICS

Bachmann's new electric N scale GG-1 is loaded with features including all new tooling, die-cast frame, 12-wheel drive, twin operating metal pantographs that can operate from overhead wire if desired, soft white LED directional headlights with dimming function, and E-Z Mate® Mark II couplers. The DCC sound-equipped model includes our Sound Value SoundTraxx® sound package with prototypical motors with blowers, pantograph extension and retraction, air compressors, short and long horns, and bell—all in 16-bit polyphonic sound. The DCC-ready version has an 8-pin socket ready for DCC decoder installation of your choice. Visit your favorite hobby dealer to see why the arrival of the GG-1 is such electrifying news for N scale modelers!

DCC SOUND VALUE-EQUIPPED • MSRP \$399.00 each

NEW



PRR #4807
BRUNSWICK GREEN SINGLE STRIPE
Item No. 65351



PRR #4913
TUSCAN RED 5 STRIPE
Item No. 65352



PRR #4935 - "BLACK JACK"
BRUNSWICK GREEN 5 STRIPE
Item No. 65353



PRR #4872 - SILVER with
RED STRIPE "CONGRESSIONAL"
Item No. 65354



PENN CENTRAL #4853
BLACK with WHITE LETTERING
Item No. 65355



DCC READY • MSRP \$349.00 each

Item No. 65251 • PRR #4912 - BRUNSWICK GREEN SINGLE STRIPE

Item No. 65252 • PRR #4876 - TUSCAN RED 5 STRIPE

Item No. 65253 • PRR #4842 - BRUNSWICK GREEN 5 STRIPE

Item No. 65254 • PRR #4866 - SILVER with RED STRIPE "CONGRESSIONAL"

Item No. 65255 • PENN CENTRAL #4882 - BLACK with WHITE LETTERING

NEW



See our matching Baggage, Coach, and Observation Cars at www.bachmanntrains.com

SHIPPING FALL 2016!