

DUAL DC/DCC CONTROL: YES OR NO? p.54



**Rapido N scale
diesel tested** p.58

February 2021
ModelRailroader.com

MODEL RAILROADING IS FUN!

Model Railroader®

Modular show stopper!

**Pelle Søbørg's
ultra-realistic
HO layout** p.38

**Model
snowy
mountain
scenery** p.32

HOW TO

Build an adjustable track cleaning car p.30

Set up a remote-control operating session p.48

Make your own small-town depot kit p.44

Pelle Søbørg turns to
modular railroading
for his latest HO scale
project. See page 38.

\$7.99



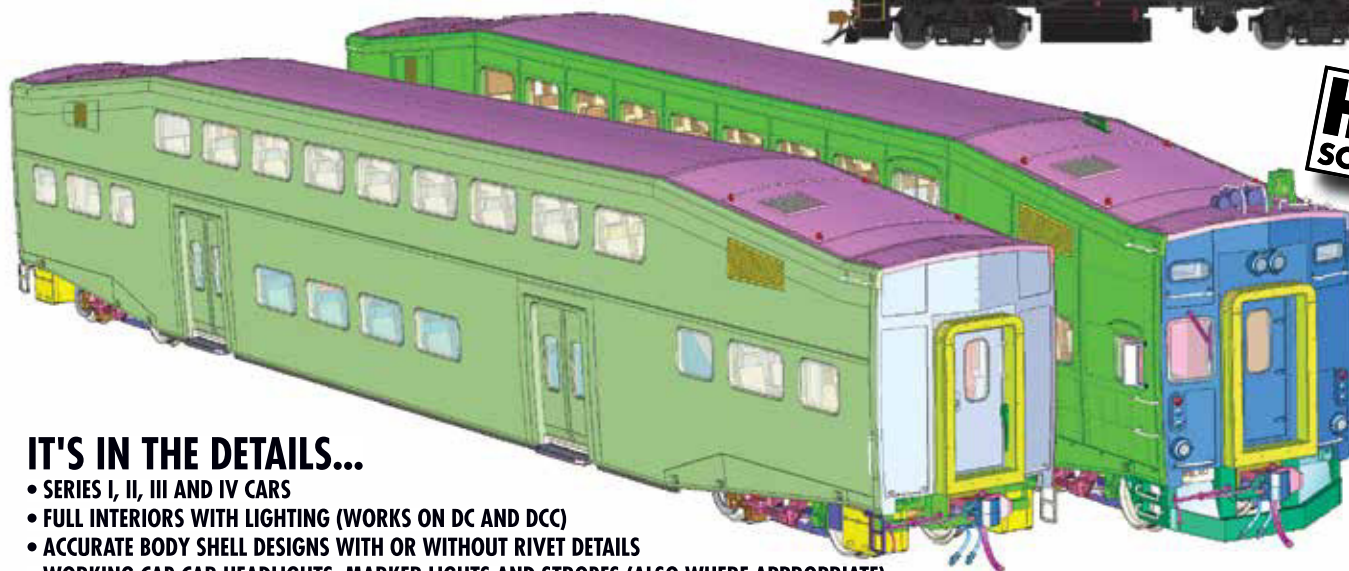
Vol. 88 • Issue 2

COMMUTER WARRIORS

FRIENDLY REMINDER TO ORDER THAT F59PH, TO PULL (OR PUSH) YOUR FLEET!



**HO
SCALE**



IT'S IN THE DETAILS...

- SERIES I, II, III AND IV CARS
- FULL INTERIORS WITH LIGHTING (WORKS ON DC AND DCC)
- ACCURATE BODY SHELL DESIGNS WITH OR WITHOUT RIVET DETAILS
- WORKING CAB CAR HEADLIGHTS, MARKER LIGHTS AND STROBES (ALSO WHERE APPROPRIATE)
- AND MUCH, MUCH MORE!

3-D RENDERS, DETAILS SUBJECT TO CHANGE

SIX, THAT'S RIGHT, SIX UNIQUE BODY STYLES!



GO TRANSIT
SERIES I COACHES
AND CAB CARS



TRI-RAIL (MIAMI)
SERIES I COACHES
AND CAB CARS



METROLINK
SERIES III COACHES
SERIES II CAB CARS



AMT (MONTREAL)
SERIES IV COACHES
AND CAB CARS



TRE (DALLAS)
SERIES IV COACHES
AND CAB CARS



WCE (VANCOUVER)
SERIES IV COACHES
SERIES II CAB CARS



DID YOU REMEMBER TO
ORDER THAT F59PH?

CONTACT YOUR RETAILER OR ORDER DIRECT AT RAPIDOTRAINS.COM



Quality. Style. Spirit.™

rapidotrains.com • youtube.com/RapidoTrains • facebook.com/RapidoTrains

RAPIDO

LET THERE BE LIGHT

MRC Invents Radio Control Light Genie,[™] and Railroad Lighting is Forever Changed.

Controllability:

Palm-size transmitter and receiver control 5 individual zones and deliver more than 20 different lighting effects...and a wireless R/C range of 90' puts an end to being tethered to a switch machine. Control on/off. Control brightness/dimming, and flash rate.

Plus

- flickering, flashing, strobe
- beacon, fire-effect flickering
- alternating flashing lights, sequential lighting

For

- buildings, street lamps
- 3-way traffic lights
- flashing railroad signals & more.

Get Creative with:

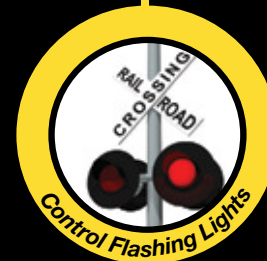
- police car flashers,
- ambulance "cherry" lights
- roadside flares, airport runways
- flickering campfires, arc-welding vignettes

If you can imagine it, you can control it with Light Genie.

...and it's Easy.

- Works with all model railroads.
- Compatible with virtually every brand of lighting accessory
- Uses LED or incandescent bulbs
- As your layout grows, run multiple Light Genies simultaneously

(Item #025000)



For Details and Videos visit us @ www.modelrectifier.com/lightgenie-s/124.htm



MODEL RECTIFIER CORPORATION

360 Main Street, Suite 2, Matawan, NJ 07747 • Phone: 732-225-2100 • www.modelrectifier.com

FOUNDED BY ROY C. GELBER

■ Train Controls

■ Model Railroad Accessories

■ Plastic Model Kits

■ Scenery

■ Educational Kits

Features



24 Detailing the foreground

Don't neglect the area between your track and the fascia

by Lou and Cheryl Sassi

26 Blending roads into backdrops

Continue the photo onto the foreground and the scenery onto the backdrop to blur the dividing line

by Gregg Condon

30 Build an adjustable track cleaning car

A styrene box with a tempered hardboard pad can be adapted to virtually any freight car

by John Campbell

32 Modeling a snowy mountain scene

In the Colorado Rockies, snow isn't just for winter

by Doug Tagsold

38 A fresh start

Contributing editor Pelle Søborg switches to modules for his latest HO scale project

by Pelle Søborg

44 Make your own station kit

Commercially available siding, roofing, and details make the Wingate, Ind., depot an ideal first scratchbuilding project

by Tony Koester

48 How to set up remote-control operations

Not everyone has to be in the basement to run your trains

by Dave Abeles

In every issue

6 From the Editor

Make room for modules!

8 Railway Post Office

Letters from our readers

10 News & Products

Hobby industry news

16 Ask MR

How long must a point-to-point layout be?



18 Rehab My Railroad **MREXTRA**

Build a tugboat for Jones Island

54 DCC Currents

DC, DCC, or both



56 Product Reviews **MREXTRA**

ScaleTrains.com HO scale EMD SD45, 53-foot N scale well car from JTC, and more

62 On Operation

Train on Branch

64 Trackside Photos

• Online bonus ModelRailroader.com

73 Index of Advertisers and Cartoon

74 Trains of Thought

Visiting mystical places



On the cover: Contributing editor Pelle Søborg has a new layout, made up of three Midwestern-themed modules. Pelle Søborg photo



Next issue

In **March**, Pelle Søborg shows how he handlaid track on the layout he introduced this issue. Also, an HO Boston & Maine layout, water for Jones Island, and more!



Trains.com subscriber extra

Model Railroader (USPS 529-810, ISSN 0026-7341) is published monthly by Kalmbach Media Co., 21027 Crossroads Circle, P.O. Box 1612, Waukesha, WI 53187-1612. Periodicals postage paid at Waukesha, Wis., and additional offices. POSTMASTER: Please send address changes to *Model Railroader*, P.O. Box 8520, Big Sandy, TX 75755. Printed in USA. Canada Publication Mail Agreement # 40010760.

Now Available from



Norfolk Southern

ATLAS TRAINMAN® HO GP38-2 LOCOMOTIVE

For more information on these and other high quality Atlas products, visit your local hobby shop or www.atlasrr.com!



Reading & Northern



GMTX



Providence & Worcester



Kansas City Southern
(Southern Belle)



New Hampshire Northcoast



Rock Island
("The American Railfan")



Chicago South Shore



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

Make room for modules!

Long-time readers of *Model Railroader* are familiar with Contributing Editor Pelle Søeborg's HO scale layouts, based on modern-day Union Pacific operations in the American West and Midwest.

His meticulously crafted and highly realistic model railroads have been the subject of many magazine articles and several books Pelle authored for Kalmbach Media, including: *Mountain*

to Desert: Building the HO scale Daneville & Donner River; Rebuilding a Layout from A to Z; and Building a Sectional Layout.

Then a life change seemed likely to put an end to it all.

Pelle moved from a house with a dedicated train room to an apartment in Copenhagen, Denmark, and his HO scale 11 x 22-foot Daneburg Subdivision (featured in the

May 2017 issue of *Model Railroader*) was history.

The loss of a train room, Pelle thought, meant his layout building days were over.

But his new apartment included a small room, which Pelle initially set aside as his home office. Looking over the space, however, he realized it would be possible to build 28-inch-wide modules totaling 9 feet in length along one wall, with room for a workbench on a facing wall.

It wasn't much room to work with, but as this month's cover story shows, Pelle made the most of it.

As he notes in his article on page 38, modules allow you to participate fully in the hobby when you lack the space for a permanent layout.

Pelle's modules use the European Fremo-US HO single-track standard, and there are Fremo-US events in Denmark twice a year in



which modelers connect their modules into a huge layout and run trains.

It's a change from having a home layout, but Pelle finds building modules to be just as rewarding.

"We all have to compromise in our modeling, and that isn't a problem," Pelle concludes. "You just have to choose the best compromise."



A CSX SD40-3 leads a freight through Daneburg on Pelle Søeborg's new HO scale modular railroad. Pelle Søeborg photo

Model Railroader

Model railroading is fun!

Founder
Editor
Senior Editor
Group Technical Editor
Associate Editor
Production Editor
Assistant Digital Editor
Contributing Editors

A.C. Kalmbach 1910-1981
Carl Swanson
Eric White
Cody Grivno
Steven Otte
Rene Schweitzer
Sammi DiVito
Tony Koester, Pelle Søeborg,
Larry Puckett, Lou Sassi

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

Model Railroader Art Team

Design Director Thomas G. Danneman
Assistant Design Director Scott Krall
Illustrators Kellie Jaeger, Roen Kelly
Production Specialist Jodi Jeranek

Trains.com

Executive Producer A. David Popp
Producer Kent Johnson
Associate Producer Ben Lake
Assistant Editor Jenny Freeland

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 Media unless otherwise noted. We assume letters, questions, news releases, and club news items are contributed gratis.

Advertising Department

Ad Sales Representative Martha Stanczak

To purchase an advertisement

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

To sell Model Railroader in your store:

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

Customer Sales and Service

Phone 877-246-4879
Outside U.S. and Canada 903-636-1125
Customer Service customerservice@ModelRailroader.info

Kalmbach Media

Chief Executive Officer Dan Hickey
Senior Vice President, Finance Christine Metcalf
Senior Vice President, Consumer Marketing

Vice President, Content/Editorial Director Nicole McGuire

Vice President, Operations Stephen C. George
Vice President, Human Resources Brian J. Schmidt
Sarah A. Horner

Senior Director, Advertising Sales and Events David T. Sherman
Advertising Sales Director Scott Redmond
Circulation Director Liz Runyon
Director of Digital Strategy Angela Cotey
Director of Design & Production Michael Soliday
Retention Manager Kathy Steele
Single Copy Specialist Kim Redmond

SUBSCRIPTION RATE: Single copy: \$7.99 (U.S.). Print + digital subscription rate: U.S.: 1 year \$58.95. Canadian: Add \$13.00 postage. Canadian price includes GST, payable in U.S. funds. All other international: Add \$24.00 postage, payable in U.S. funds, drawn on a U.S. bank. ©2021, Kalmbach Media Co. Title registered as trademark. All rights reserved.



Rural INDUSTRIAL



Vetter Sash & Door Co.*

HO Scale (279-5018) | O Scale (279-4324)

Weathered and backlit "Vetter Sash & Door Company" sign

Two rotating exhaust fans and 25 intricate windows

Includes 3 figures, two pallets with doors and windows, four roof dormers, dust collector, dumpster and Jack the German Shepherd

Fully lit including four LED yard lights and three red blinking LED warning lights on the roof

Built-in tunnel for a minimal footprint

Dimensions:
11"W x 6-1/4"D x 6-5/8"H



Gamer & Thrones*

HO Scale (279-5141) | O Scale (279-4428)

Animated, revolving "throne"

Over 15 LED lights including three red warning lights on the roof

Built-in tunnel for a minimal footprint

Includes loading dock with three workers, pallet with sink and toilet, 28 intricate windows, four roof dormers and chimney

Dimensions:
10"W x 6"D x 6-1/8"H



American Materials Plant #1*

HO Scale (279-5043) | O Scale (279-4434)

Two electronic signs with waving flag animation

Includes 14 material signs to label your plant

Built-in tunnel for a minimal footprint

Dimensions:
3-1/2"W x 3-1/4"D x 8-9/16"H

FOR MORE INFORMATION OR TO ORDER, VISIT MENARDS.COM/TRAINS

Memories of a master modeler

As a nearly lifelong MR reader and subscriber (my first issue was January 1959, your silver anniversary issue), I was pleasantly surprised and amused at Keith Wills' "Heritage Fleet" column in December's issue, titled "Master custom builder Bill Lenoir." When I was 15, it was my privilege to meet Lenoir, thanks to my late father, Kermit Tyndall, and to take a photo of the usually camera-shy Lenoir.

While attending the National Model Railroad Association Sunshine Region convention in Tampa, I borrowed my dad's Kodak Pony 828 slide camera and took Lenoir's photo, also catching a calendar that dates the photo to October, 1960. I was very fortunate to

catch Lenoir, as he was trying desperately to duck out of the photo, but thanks to my dad, I got what I am told is a rare photo of the pioneering model railroader.

My dad had known Lenoir since 1945 as a member of the Tampa Model Railroad Club. Lenoir was not only a custom locomotive builder, as Wills noted, but Lenoir also built props for the Ringling Brothers Barnum & Bailey Circus, as his brother-in-law was noted clown Paul Jung.

Lenoir's locomotives, which I got to see on his spartan layout/test track, ran as beautifully as they looked. Thank you for the memories.

Tom Tyndall, Nashville, Tenn.



In 1960, a 15-year-old Tom Tyndall snapped a rare color photo of master model locomotive builder Bill Lenoir, subject of December's "Heritage Fleet" column, in his workshop. Lenoir is at right; at left is the photographer's father, Kermit Tyndall. Tom Tyndall photo

A perpetually improving layout

Love the picture of Dale Latham's Piedmont Southern ["Trackside Photos," Nov. 2020 - Ed.] I consider Dale's railroad one of the "jewels in the crown" of the southern Maryland operating group I joined after a layout tour.

Dale insists he's more of a modeler than operator, and it's true. He'll look at a section of his railroad that is Master Model Railroader quality, decide he can do better, and completely rebuild it. Not just repaint or rescenic - he'll start by replacing the benchwork, work up from there, and indeed, do better. This

propensity makes advertising the National Model Railroad Association open houses he often hosts a challenge; using photos from a prior open house is risky because some of the scenes may have been replaced!

William Mosteller, Fairfax, Va.

The forgotten coupler

The November *Model Railroader* had an inquiry headed "When were knuckle couplers instituted?" ["Ask MR" - Ed.], with a reply noting the previous use of link-and-pin couplers. The other type of coupler apparently used extensively in

the United States was the Miller coupler, developed by a Col. Ezra Miller. The use of this coupler is detailed in John H. White Jr.'s *The American Railroad Passenger Car*.

The coupler had some of the features of the Janney, but was designed with a stronger end platform to reduce telescoping and was apparently used on passenger cars from the 1870s to 1900. It was replaced by the Janney, as the latter was stronger, easier to use, and standard with freight car couplers. I wonder if any model manufacturer has produced a scale Miller coupler?

Stephen Buck, Sydney

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.

LED Scene Controller II - (Power supply & 16 pre-wired LEDs)



16 Port LED controller can power and animate up to 64 LEDs. Power, control and animate your LED lights. Everything you need to get started.

NEW!! - 4MB Sound Module



Plug this sound module into your PC USB port to load your own sounds! Power from your Animation Scene Controller or use plug-in power to this unit to supply detectors. Built-in DCC decoder allows both MF and accessory modes - trigger sounds from DCC switches.

N & HO Scale LED Light Boards with onboard DCC Decoder



NEW!

Model Train Technology®

(407) 242-5436
support@modeltrainman.com

Pre-wired LED Lighting
Fiber Lighting Dangles
LED Scene Controllers
Magnetic and IR Detectors
ModelTrainTechnology.com

COMING SOON

UTILITY SYSTEM

Install Pre-Wired Poles to your layout in minutes

- Create the illusion of working power and communication lines
- Designed with placement in mind to eliminate guesswork
- Complete system offered for N, HO and O scales



Innovative Packaging for
Tangle-Free Installation

COMING SOON

SUBSTATION

Completes the Utility System

- Ready-made for N, HO and O scales
- Hand-painted and highly detailed
- Includes detached control building
- Easily connects to Pre-Wired Poles



**WOODLAND
SCENICS®**

Learn more at woodlandscenics.com

MOBILE UPDATES

Scan the code to access Model Railroader's weekly News & Products updates from your mobile device.



Electro-Motive Division F7A and F7B diesel locomotives.

These Burlington Northern (ex-Northern Pacific) F units are now available from Athearn Trains. The HO scale Genesis series models are offered as an F7A, F7B, and F7A-B set in one number each. The F units have factory-installed and painted wire grab irons, etched-metal grills, and prototype-specific

details. Direct-current models with a 21-pin NEM plug for a Digital Command Control decoder are priced at **\$199.98** (single A or B unit) and **\$379.98** (A-B set). Versions with a dual-mode SoundTraxx Tsunami2 sound decoder are **\$289.98** (single A or B unit) and **\$559.98** (A-B set). Athearn Trains, 800-338-4639, athearn.com

HO scale locomotives

• **Electro-Motive Diesel/Progress Rail SD70ACU diesel locomotive.** Canadian Pacific (red with monochrome beaver herald and maroon-and-gray heritage scheme with script lettering in two road numbers each; Army Arid Regions and Navy schemes in one number each) and Norfolk Southern (Thoroughbred scheme, four numbers). Prototype-specific details, light-emitting-diode headlights, and wire grab irons. Direct-current model with 21-pin NEM connector, \$249.98; with dual-mode SoundTraxx Tsunami2 sound decoder, \$339.98. November 2021. Genesis 2.0 series. Athearn Trains, 800-338-4639, athearn.com

HO scale freight cars



• **Assorted freight cars.** Milwaukee Road 40-foot ribbed-side double-door boxcar, \$19.98. Chicago & North Western 36-foot Fowler boxcar, \$19.98. Jersey Central Lines 40-foot insulated boxcar, \$19.98. Nashville, Chattanooga & St. Louis 40-foot boxcar, \$19.98. Norfolk & Western American Car & Foundry 4,600-cubic-foot-capacity Center Flow covered hopper, \$20.98. Pacific Fruit

Express 40-foot wood refrigerator cars (orange and brown with Union Pacific herald in two road numbers and Southern Pacific herald in one number), single car, \$20.98; three-pack, \$61.98. St. Louis Southwestern (Cotton Belt) 36-foot double-sheathed boxcar with metal ends and fish-belly underframe, \$19.98. Injection-molded plastic kits with plastic wheelsets, Accumate couplers, and steel weight(s). Accurail, 630-365-1173, accurail.com



• **100-ton three-bay hopper.** BNSF Ry. (Mineral Red with circle-cross herald), Canadian National (black with "wet noodle" herald), Chesapeake & Ohio (black with "C&O for Progress" herald), Denver & Rio Grande Western (black patchout), Louisville & Nashville (black with 1976 anniversary logo and 1981 DeCoursey repaint), Penn Central (black, class H43D), Seaboard System (black with red-and-yellow herald), Southern Pacific (Oxide Red with speed lettering), St. Louis-San Francisco (black with Art Deco-style "Frisco" lettering), Upper Merion & Plymouth (black), and Wheeling & Lake Erie (black with orange Rio Grande-style lettering). Three road numbers per scheme. Roller-bearing trucks with 36" metal wheels, interior and slope sheet braces, and

knuckle couplers. \$28.95. Fall 2021. Bowser Manufacturing Co. Inc., 570-368-2379, bowser-trains.com



• **40-foot Pullman-Standard PS-1 boxcar.** Chicago Great Western (Built

More show cancellations

The ongoing COVID-19 pandemic has led to more train show cancellations. The Amherst Railway Society Railroad Hobby Show (Springfield, Mass., Jan. 30-31) and Mad City Model Railroad Show (Madison, Wis., Feb. 20-21), both events with 50-plus-year histories, have cancelled their 2021 shows.

The Amherst Railway Society and South Central Wisconsin Division of the National Model Railroad Association are both working on plans for shows in 2022. In addition, the Amherst Railway Society is planning a virtual Railroad Hobby Show on Jan. 30-31, 2021. For more information on the virtual show, please visit amherstrail.org and railroadhobbyshow.com.



1951, repainted 3-59). Separate, factory-applied ladders, grab irons, and running board; 6-foot Youngstown doors; and Kadee scale couplers. \$42.95. Kadee Quality Products Co., 541-826-3883, kadee.com



• **Pennsylvania RR F30 series flatcars.** Pennsylvania RR (F30A [as delivered, 1950s, and 1960s schemes] and F30D as delivered), Conrail (F30A maintenance of way), Lehigh Valley (F30A), Penn Central (F30A), and TTX (F30D [early and late red] and F30G yellow). Six road numbers per scheme. Single car, \$49.95; six-pack, \$299.70. Undecorated single cars also available (F30A and F30D trailer on flatcar [early and late styles]). Die-cast metal chassis and deck, PRR 2E-F10 trucks (converted roller bearing or full roller bearing), brake rigging, and Kadee no. 158 semi-scale couplers. Late 2021 delivery. Rapido Trains Inc., 905-474-3314, rapidotrains.com



• **53-foot General Steel Castings bulkhead flatcar.** Chicago, Burlington & Quincy (red); Atchison, Topeka & Santa Fe (Freight Car Brown); Burlington Northern (Cascade Green); Soo Line (white); and Union Pacific (Armour Yellow). Three road numbers per scheme; also available undecorated. Newly tooled die-cast metal body with fine details, 33" turned-metal wheelsets,

and Proto-Max metal couplers. \$34.98. Walther's Mainline. Wm. K. Walther's Inc., 414-527-0770, walther's.com

N scale locomotives



• **Electro-Motive Diesel SD70ACe diesel locomotive.** Union Pacific ("Building America" scheme with American flag; Powered by Our People, George Bush 41 Presidential Library and Museum [original and funeral schemes]; and "The Spirit of the Union Pacific" in one number each), BHP Iron Ore

("bubbles" scheme), BNSF Ry. (Heritage III), Canadian National (red, white, and black with "wet noodle" herald and website), CSX (dark blue and yellow), Electro-Motive Diesel demonstrator (blue and white, one number), Kansas City Southern (*Southern Belle* and Support Our Troops schemes, one number each), and Progress Rail Leasing (Chesapeake & Ohio "heritage" unit, one number). Two road numbers per scheme unless noted; also available undecorated (UP body style). Dual-mode Paragon3 sound decoder with Rolling Thunder; golden-white light-emitting diode headlights; plastic body with die-cast metal chassis; and separate, factory-applied handrails, ladders, whistles, and

HO scale



Pullman-Standard three-bay coal hoppers. Tangent Scale Models has released a new range of HO scale open hoppers. 4,000-cubic-foot-capacity cars are lettered for Burlington Northern (1976+ as-delivered scheme with double rotary ends [phase 3 body] in two road numbers and 1975+ as delivered [phase 1 body]) and Chicago & North Western (1975+ as delivered black [phase 2]). 3,526-cubic-foot-capacity cars are painted for Chessie System (1975+ with Baltimore & Ohio reporting marks). The models (\$44.95 each) are offered in 24 road numbers per scheme unless noted and undecorated in five body styles. The hoppers have a removable coal load, 100-ton Barber S-2 trucks with road-name-specific rotating bearing caps, CNC machined 36" wheels, and Kadee scale couplers. Tangent Scale Models, 828-279-6106, tangentscalemodels.com

N scale



Pullman-Standard 72-foot lightweight baggage cars. Great Northern; Atchison, Topeka & Santa Fe; Denver & Rio Grande Western; Atlantic Coast Line; Chicago, Burlington & Quincy; and Northern Pacific are among the schemes on these cars from RailSmith Models. The N scale injection-molded plastic cars (\$44) are offered with smooth or fluted sides as appropriate, clear window glazing, and metal wheels. RailSmith Models, railsmith.net

bell. \$259.99. Broadway Limited Imports, 386-673-8900, broadway-limited.com

N scale freight cars



• **Pullman-Standard 4,427-cubic-foot-capacity three-bay covered hopper.** Atchison, Topeka & Santa Fe; Burlington Northern (1991 scheme); Chicago & North Western (green); Harmon Grain, Trumbull, Neb.; Montana Rail Link (gray); Pillsbury; Union Pacific (gray with reporting marks and shield); and Wisconsin Central. Six numbers per scheme (three single cars and one three-pack). Screw-mounted roller-bearing trucks with 36" machined metal wheelsets and body-mounted McHenry couplers. Single car, \$28.98; three-pack, \$84.98. AthearnN. Athearn Trains, 800-338-4639, athearn.com



• **50-foot plug-door boxcar with reusable track cleaning pad.** Union Pacific (silver and yellow with "We can handle it." slogan), Baltimore & Ohio (blue, yellow, and silver), Conrail (brown with "can opener" herald), and Western Pacific (Boxcar Red with "Rides Like a Feather" slogan). Blackened metal wheels with non-magnetic blackened brass axles, magnetically operated E-Z Mate couplers, and Celcon solid-bearing trucks. \$49. Silver Series. Bachmann Trains, 215-533-1600, bachmanntrains.com

handle it" slogan), Baltimore & Ohio (blue, yellow, and silver), Conrail (brown with "can opener" herald), and Western Pacific (Boxcar Red with "Rides Like a Feather" slogan). Blackened metal wheels with non-magnetic blackened brass axles, magnetically operated E-Z Mate couplers, and Celcon solid-bearing trucks. \$49. Silver Series. Bachmann Trains, 215-533-1600, bachmanntrains.com

O scale structures



• **Laser-cut wood kits.** Crossing shanty two-pack, \$30. Section house, \$45. Crossing shanty, based on Boston & Maine prototype preserved on the grounds of the Ipswich (Mass.) Museum, includes 3-D printed smokejack. Section house is based on B&M structure once located near Topsfield Road in Ipswich, Mass. Ipswich Hobbies, 919-721-8757, ipswichhobbies.com

Z scale locomotives

• **Alco RS-3 diesel locomotive.** Milwaukee Road. Three road numbers.

Phase III body; corner-stacked number boards; Alco Association of American Railroads trucks; single-beam headlights; two single-chime air horns; 1,400-gallon fuel tank; and clear window glazing. American Z Line, 614-764-1703, americanzline.com

Decals

• **Southern Ry. early cupola and bay-window cabooses.** HO scale set features Dulux Gold road names (serif and sans-serif typefaces), heralds, road numbers, safety heralds, labels specific to cabooses, and "canned" road numbers. Set is substitute for Champ HC-235. Designed by Robert Wingo. \$5.29 post-paid. Virginia residents pay sales tax. Bill Mosteller, 3306 Parkside Terrace, Fairfax, VA 22031; greatdecals.com

Books

• **New York Central: The Hudson Division.** By Stan Trzoniec with photos from the Robert LaPorte collection. Covers the New York Central from Albany to Yonkers, N.Y., with stops at dozens of locations along the way. Includes history of the line town by town and how each grew and prospered because of the NYC and many of its branch lines. Hardcover, 168 pages with more than 185 black-and-white photos. \$49.95 plus \$5 postage (check or money order). Autographed if desired when ordered direct. OutdoorPhotoGraphics, 562 South St., Shrewsbury, MA 01545; outdoorphotographics.com

Apps

• **RailModeller Pro version 6.3.** Track planning app for macOS. Upgrades include a new function to automatically colorize layouts by element type, radius, article number, or layer using multiple color palettes; an improved Library Catalog now also displaying shortcuts for elements and more options when a stock of track is used; a Baseboard Assistant featuring new inside corner templates for modular systems (T-Trak) and real-time preview; and an expanded export to JMIR's PanelPro application for controlling model railroads via Digital Command Control. \$39.99. Free update for users of the app. Available exclusively on the Mac App Store. RailModeller Pro, railmodeller.com

ILLUMINATE AND ANIMATE!

**Fiber optic lighting
for buildings and scenery**

"Fiber optics allows me to put lighting
in places and areas I would not have
thought possible. It is so easy to do,
and without wires!" -Paul M.

DWARVIN
LIGHTING WITHOUT WIRING



**15%
OFF!**
Through
January 31st

dwarvin.shop/Jan2021

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

City Station

Laser-cut Building Kit



**NEW
HO & N
SCALE**

410-889-0010

Visit our website to see these and more kits from CMR
www.custommodelrailroads.com

SHOP ON-LINE 24/7

TRAINWORLD.COM

WE SUPPLY THE WORLD



AMERICA'S LARGEST
INTERNATIONAL MAIL ORDER
DISCOUNT TRAIN STORE

N, HO, ON30 SUPER SAVINGS SALE

10% OFF
\$100.00 and OVER

@ **TRAINWORLD.COM**
On-line Orders Only

Use CODE Word **MRJF21** In User Comment Box
SALE ENDS February 15, 2021

THIS MONTH'S SPECIAL Limited
HO BACHMANN 51317 Quantities
ROCK ISLAND 2-8-0 CONSOLIDATION

DCC EQUIPPED
SUPER SALE \$89.99
MORE SALE ITEMS @ trainworld.com

CODE WORD MUST BE APPLIED AT TIME OF ORDER
- IN STOCK ITEMS ONLY
- NO BACK ORDERS
- NO PRE-ORDERS
- NOT REDEEMABLE FOR CASH OR GIFT CARDS
- DISCOUNT DOES NOT APPLY TO SALES TAX OR
- SHIPPING & HANDLING
- NO REFUNDS, NO STORE CREDIT ON
- PREVIOUSLY SOLD ITEMS
- NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS
- LIMITED QUANTITIES ON CERTAIN ITEMS
- CANNOT BE COMBINED WITH OTHER OFFERS OR DISCOUNTS
- IF DISCOUNT APPLICABLE, TRAINWORLD WILL APPLY
- IT WHEN ORDER IS PROCESSED

SIGN-UP FOR OUR E-MAIL SALES 1-800-541-7010 e-mail: ORDERS@TRAINWORLD.COM
HUGE INVENTORY • GREAT SELECTION • FAST SHIPPING 751 McDonald Ave., Brooklyn, NY 11218

PECO STREAMLINE

**The World's Favorite
Track System**



PECO, 'The Track Specialist' is dedicated to
bringing you the very best in model railroad
track systems. This year we celebrate two
special milestones – **60 years** since the
development of our world famous **STREAMLINE**
brand and **75 years** as a successful family
business. But we're not looking back for too
long — we're moving forward!

**Pick up a free
catalog at your
hobby store to
see more track
systems and kits!**



HO CODE 83



HO CODE 70



HOOn3 CODE 70

On30 CODE 100

N CODE 55

www.peco-uk.com • PRITCHARD PATENT PRODUCT CO. LTD • BEER • DEVON • EX12 3NA • ENGLAND

Showcase



1



6



2

3



4

1 Gunderson Multi-Max. ScaleTrains.com offers this Operator Line auto rack in seven road names. The HO car sells for **\$42.99**. ScaleTrains.com, scaletrains.com

2 40-foot high-cube refrigerated containers. "K" Line is among the road names available on these HO

scale models. A three-pack sells for **\$56.95**. Atlas Model Railroad Co., atlasrr.com

3 Union Pacific's Big Boys. This 224-page book (soft-cover, **\$29.99**; hardcover, **\$43.99**) tells the story of UP's 25 4-8-8-4 steam locomotives. Kalmbach Books, KalmbachHobbyStore.com

4 New York Central four-car add-on set. Kato

sells Pullman 10-roomette, 6-double-bedroom sleepers and 12-bedroom sleepers as part of its N scale *20th Century Limited* series. The set is **\$140** (standard) and **\$200** (pre-installed lighting). Kato USA Inc., katousa.com

5 24-foot ore car with load. These Roundhouse line HO models are decorated in three Great Northern paint schemes. The cars are priced

at **\$27.98** (single) and **\$104.98** (four-pack). Athearn Trains, athearn.com

6 40-foot insulated boxcar. Accurail offers this kit decorated for Fruit Growers Express with Penn Central reporting marks. The HO car (**\$19.98**) includes plastic wheelsets. Accurail, accurail.com **MR**

ARRIVING JANUARY 2021
PREORDER NOW FOR \$0 DOWN



HO DIECAST PLYMOUTH SWITCHERS

Dual Mode DC & DCC

An exquisitely detailed and powerful workhorse for switching operation on layouts of distinction.

Available in several road names and paint schemes.



an exclusive and highly limited run brought to you by
FACTORYDIRECTHOBBIES.COM

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



Lighting Kits and Backgrounds Available
Join Top to Bottom or End to End
714-842-0672
www.SHOWCASE-EXPRESS.COM

RIGHT ON TRACK MODELS
N, HO, S and O Scale Building Kits
Miami, Florida
305.240.8362



WE WILL BUILD ANY MODEL TO ANY SCALE FROM PHOTOS
www.RightOnTrackModels.com

Flexible Automation
724-933-9350
Remote I/O - Relay Closures - Sensors
Isolated Digital Inputs - LED Dimming
Event Triggering - Sequencing - PC-Free
Serial Communications
Protocol Conversions
Network - Security
Browser Interface
User Programmable
Custom Applications
Technical Support



integ
www.jnior.com

AIRWIRE® Wireless Battery Operation For All Scales
Now its easier than ever to convert a track-powered NMRA-DCC decoder to a battery powered AIRWIRE decoder. Imagine no layout wiring, no reverse loop nightmares, and no track or wheel cleaning. The CONVRTR™ Series works with sound+motion DCC decoders such as SoundTraxx and TCS. The T5000 Wireless Throttle is used to setup and operate the DCC decoder - no need for any other systems or equipment. Selection of the CONVRTR is based on available space and the required output power. The smallest CONVRTR, rated at 1.5A, is perfect for HO. With 17 frequencies, there's plenty of interference-free expansion room. Download the user guides from our website for more details.

CONVRTR-15 Rated @ 1.5 AMPS	CONVRTR-25 Rated @ 2.5 AMPS	CONVRTR-60 Rated @ 6.0 AMPS
☒ Suitable for HO scale locomotives	☒ Suitable for On30, S, or O scale	☒ Suitable for high current O or G-scale
☒ Unlimited Surge Current, Fully Protected	☒ 2.6A Surge Current, Fully Protected	☒ >20A Surge Current, Fully Protected
☒ Stuck Horn Protection	☒ Stuck Horn Protection	☒ Stuck Horn Protection
☒ 10V to 18V Battery Range	☒ 10V to 18V Battery Range	☒ 10V to 24V Battery Range
☒ 2.4 inches long x 0.6 inches wide	☒ 2.0 inches long x 0.9 inches wide	☒ 2.2 inches long x 1.2 inches wide

CVP Products POB 831333 Richardson, Tx 75083 **www.cvpusa.com**

WORLD'S LARGEST MODEL TRAIN DISPLAY
25,000 SQ. FT.



Train Journey
Imagination Junction
American Railroad Museum
Expo Center
A-Maze-N Funhouse
Coney Island Replica
Marble Museum
Gift/Hobby Shop

AMERICA'S MOST AMAZING FAMILY ATTRACTION!
• "Certificate of Excellence" - Trip Advisor
• "Travel Gem" - AAA
• "Standout in Ohio Tourism" - Ohio Traveler
• "Best Family Fun Day" - Best of Ohio

Over 100,000 Sq. Ft. of Fun!

ENTERTRAINMENT JUNCTION
7379 Squire Court, Cincinnati, Ohio 45209
(513) 898-8000
www.EnterTRAINmentJunction.com

Your **#1** Model Railroading Source!

www.modelrailroader.com/subscribe



Subscribe today for yourself or give a gift subscription!



How long does a point-to-point layout have to be to appear realistic? Nobody would accuse Lance Mindheim's HO scale Los Angeles Junction of looking like a test track, but that's not because of its length. Lance Mindheim photo

How long must a point-to-point layout be?

Q What is the smallest point-to-point layout that doesn't look like just a section of test track? How long does a shelf layout have to be to look like a working operation could be taking place?

Richard Helton, Meridian, Idaho

A That's a matter of taste and perception, not something that can be quantified in feet and inches. If I say an 8-foot shelf layout is long enough to look realistic, does that mean a 7-foot 10-inch one isn't? More important than the layout's size is how that space is treated. Let's look at some factors that can enhance or detract from a shelf layout's realism.

You mention the layout as being part of a "working operation." For a layout to be realistically operable, it needs three elements at minimum: a tail track for switching, long enough to hold the locomotive and at least one car; a runaround long enough to hold at least one car; and a means to get cars on and off the of the layout, even if that's a hand-fiddled interchange track long enough to hold only a couple of cars.

Also useful is an industrial spur or two to provide destinations for the cars. But if your layout models a classification yard, the yard tracks themselves serve that operational purpose, so industrial spurs aren't strictly mandatory. So, add up the length in your scale of a tail track on both ends of the layout, the runaround track in the middle, and the length of the turnouts on both ends of that runaround, and you'll have a ballpark minimum length for a realistically operable shelf layout. If you want a true "point-to-point" layout, double that length and add enough track in between the two so a train of typical length can't have its nose in one town and its tail in the other. If space is tight, put a backdrop, tunnel, turnback curve, or other view block between the two locations instead.

That covers the "working operation" part of your question. However, not looking like a test track is also a function of aesthetics – how the layout is designed and scenicked. Test tracks tend to be straight and flat, so building gentle, natural curves into your mainline will go a long way toward avoiding that look. Another way to add visual realism is to build your tracks on different heights of roadbed – high for the main, medium for sidings, ground level for spurs.

Add interesting scenes to draw the eye. Use view-blocking scenery like a hillside cut, a foreground structure, a road or rail overpass, or a stand of trees to break up the main into separate, distinct scenes. Or you could go all the way and consider the vignette approach – separating scenes with a backdrop that curves forward to meet the fascia, cutting the layout into isolated sections. With this technique, your individual scenes could represent very different locations, climates, and types of terrain, letting you indulge your creative impulses while preventing that test-track look.

Q I'm adding American Limited operating diaphragms to my HO and N scale passenger cars. The instructions state to use liquid plastic cement to glue the striker plate to the outer bellows. I've tried Plastruct Plastic Weld, Plastruct Bondene, and cyanoacrylate adhesive. Nothing holds. What type of glue should I use to make a secure bond?

Charles Dick, Guntersville, Ala.

A If I remember correctly, the striker plates on those detail parts are made from a slippery engineering plastic like Delrin. Try scuffing up the gluing surface a bit with some fine sandpaper to give it some tooth before trying contact cement or a flexible all-purpose adhesive like Gorilla Glue.

Q I'm modeling the transition era in the Southeast on my layout, and I was wondering what grade crossings looked like then for three-track main lines. Was there a crossing shanty at the crossing, or was there something more elaborate?

Henry Powell, Lincolnton, N.C.

A Automatic crossing gates, not requiring the intervention of a flagman, were implemented starting in 1936. So by the steam-to-diesel transition era, these would be commonplace on large railroads and busy crossings. Attendant shacks might still be present at some of these grade crossings, but they would likely be unmanned and boarded up unless there was some other reason the crossing warranted extra protection.

Major crossings in the transition era would likely be protected by crossbucks, automatic flashing lights, and bells in addition to the gates. For a look at a variety of ways crossings were protected in the transition era, you might want to watch this Union Pacific safety film from 1950: youtu.be/DJCl12QwDoU

Q I'm building an HO scale layout and want to run 14 gauge bus wires for the main lines. My question is, should the bus wires be in a closed or open loop?

Tom Chivers, Chatham, Ont.

A DCC Currents columnist Allan Gartner responds: There's no need to

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

connect the ends of a DCC bus (aka closing the loop). It can be done, but there's nothing to be gained by doing so.

On the other hand, troubleshooting is more difficult, as the modeler wouldn't know which side the problem is on and would have to break the loop.

Q I have a set of 72-foot passenger cars. They have the type of couplers that are mounted on a tongue attached to the trucks. After installing door gates and bellows on the car bodies, the couplers barely reach each other. Even on my 28" and 36" curves, they're having issues. I remember you had an article on installing Kadee draft-gear boxes and extended couplers on freight cars, but would this work on passenger cars with truck-mounted couplers?

Bill Whitehead, Cross Junction, Va.

A While I can't say for sure without examining your cars firsthand, you could probably replace your cars' couplers with long-shank Kadees, using the same truck-mounted draft gear boxes. Check Kadee's coupler conversion page to see what kind of couplers you need: kadee.com/hocc.htm

We generally recommend body-mounting couplers, though. This would give you more control of where you place the couplers and, therefore, how far apart your cars couple. Make sure the diaphragms have enough daylight between them that they don't bind or catch on each other and derail your cars.

Q I'm restarting HO scale modeling after decades for my three grandkids. I want to model the steam-to-diesel transition era, as I rode B&M passenger cars to school back then. I noted with interest your August 2020 article, "Freight cars of the '70s." Have you published an article like that on the freight cars of the 1940s and '50s?

Bob Cusack, Nahant, Mass.

A We have, and we conveniently collected those articles into a downloadable PDF. Get it from our Kalmbach Hobby Store, at KalmbachHobbyStore.com/product/digital-download/mrpdf036

If you'd like even more in-depth information than that, we've also published a book on the subject. Check out *Freight Cars of the '40s and '50s* by Jeff Wilson, also available from the Kalmbach Hobby Store. **MR**

Micro-Mark®

Your one-stop source for unique tools, supplies, model kits and more!

\$4⁹⁵ SHIPPING!
on ANY* order when you place your order at www.micromark.com and enter Promo Code 4545

OVER 5,200 ITEMS IN OUR CATALOG AND WEBSITE, INCLUDING...

The Best Tools for Handlaying Track

#84366 Tracklaying Tool Set includes Spiking Plier, Spike Removal Plier and Rail Cutting Plier



NEW UncoupleLITE™

provides the easiest, most accurate way of uncoupling HO, N, On30 and O scale locomotives and cars at any location on your model railroad, even in total darkness!



#89536 UncoupleLITE™

*Offer applies to standard shipping to the 48 contiguous United States ONLY. Heavy item surcharges still apply. Offer cannot be combined. Pre-Order items excluded. Offer ends 2/28/21.

Authorized
**Lionel, MTH and
Bachmann** dealer



MARIO'S TRAINS™
THE SOURCE FOR THE ENTHUSIAST

GIVE US A CALL (540) 868-0025

**Mention
this ad for
FREE shipping
anywhere in
continental
USA**

mariostrains.com

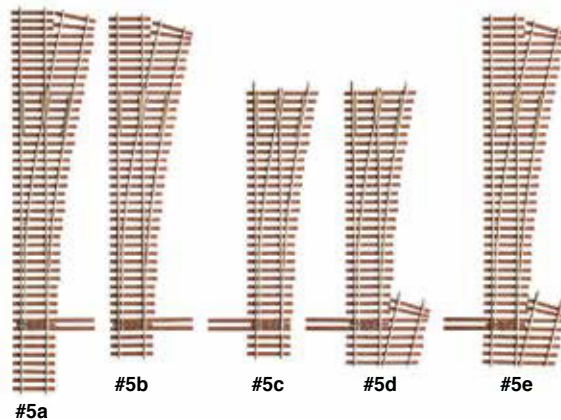


The Ladder Track System

Available with Code 83 or 70 Rail

Our 56th year!
Micro Engineering / Rail Craft
ME 1964 - 2020

The Micro Engineering Ladder Track System is a series of five different HO Code 83 or Code 70 #5 turnouts that can be used in various combinations to allow up to 30% more yard in the same layout space. Information pdf's, turnout templates and our price list are available on our web site or by email. See the Ladder Track System at your dealer or order direct.



#5a Standard Turnout
#5c Lead Ladder

#5b Curved Diverging Track Turnout
#5d Intermediate Ladder

#5e Last Ladder

ME Micro Engineering Company

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

Made in the USA
www.microengineering.com
service@microengineering.com



Great Lakes Towing's *North Dakota* rests in Milwaukee between jobs. The boats are named for states. Carl Swanson photo



The *Kansas* is ready for its first assignment at Jones Island. Eric White shares the tips he used to build this resin kit from Frenchman River Model Works.



Build a tugboat for Jones Island

Our Jones Island Rehab My Railroad project is a waterfront scene on Lake Michigan that features industries served by rail and marine transportation. We're plenty familiar with modeling rail transportation, but the marine side is a step outside the box.

Most vessels worthy of rail-served industries are too large to include on a model railroad, but to get up to some of the wharfs they need a bit of help. Tugboats are the craft that do that, and tugs are a reasonable size to model.

There are many tugboat models available, and for our project, we chose an HO scale cast resin kit from Frenchman River Model Works of a U.S. Army tug. These boats are about 45 feet long and were built in the 1950s. After the Army was done with them, they went on to second careers around the country.

We took a few liberties with ours, painting it as a Great Lakes Towing boat. I couldn't find any boats this size in Great Lakes' fleet – the smallest are about 80 feet – but the green hull, red superstructure, and big G on the stack are familiar sites on the Milwaukee industrial waterfront.

And as modelers do, I added a few details to the kit. Everything you need is included in the box, but once I started looking at photos (boatnerd.com is a great source), I started seeing things to add to make a contemporary boat.

I found a few parts at Seaport Model Works (seaportmodelworks.com), and made a couple myself. Other sources include Frenchman River Model Works (frenchmanriver.com) and Sylvan Scale Models (sylvanscalemodels.com).

So gather your tools and hop aboard!

Materials list

Evergreen styrene

Assorted scraps of sheet and strip

Frenchman River Model Works

45-foot harbor tug boat

Microscale

90051 Block Gothic alphabet, white

91111 White stripes, 1 and 2 inch

91131 White stripes, 4 and 6 inch

Seaport Model Works

P41 Life ring

P160 Throttle

P177 Radar unit

Tamiya

X5 Green

X7 Red

X18 Semi Gloss Black

XF20 Medium Grey

STEP 1 PREP AND PAINTING



The model has two large parts, the hull and the superstructure. The first order of business was to remove flash from the castings. I used a hobby knife with a no. 11 blade for this. Be careful not to slice into the thin details of the castings, such as the webs around these cleats on the aft (rear) deck.



In an effort to improve the detail and include some of the things I saw in photos, I removed the cast-on handrails. After carving most of the casting off, I used files and sanding sticks to smooth the area. Be sure to use a mask or respirator when sanding resin, as the dust is toxic.



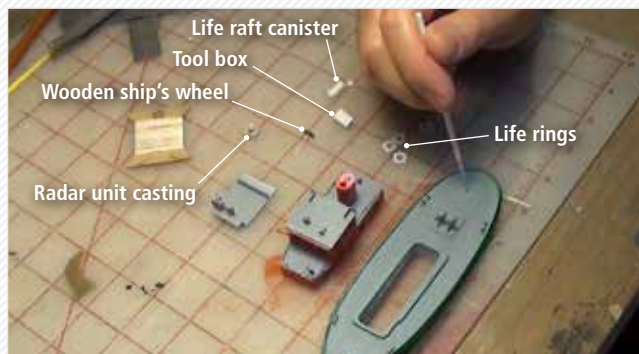
I made the handrails from .012" brass wire. After bending the handrails to fit mounting holes I drilled in the cabin casting with a no. 78 bit in a pin vise, I added short lengths of wire to make the stanchions, then soldered the parts together on the model. When the solder cooled, I trimmed the extra length from the stanchions, then filed the joint smooth.



With the larger pieces cleaned up and the handrails glued in place with cyanoacrylate adhesive (CA), I primed the model with Tamiya Surface Primer Gray followed by Tamiya Surface Primer Fine White to ensure a true color. The hull was airbrushed with Tamiya X5 Green, thinned 50 percent with isopropyl alcohol. The cabin was sprayed with thinned X7 Red.



When the red and green were cured – I like to wait at least 24 hours – I masked the hull and cabin superstructure and sprayed the deck and cabin tops with a medium gray Polly Scale paint we had in the workshop. Tamiya XF20 Medium Grey would be a good alternative.



Last spring, COVID sent us home. I took stock of the parts I had. Before leaving the office, I made a simple cabin interior from scraps of Evergreen styrene with a throttle control from Seaport Model Works. The wooden ship's wheel came with the kit. Both are attached to strip styrene posts.

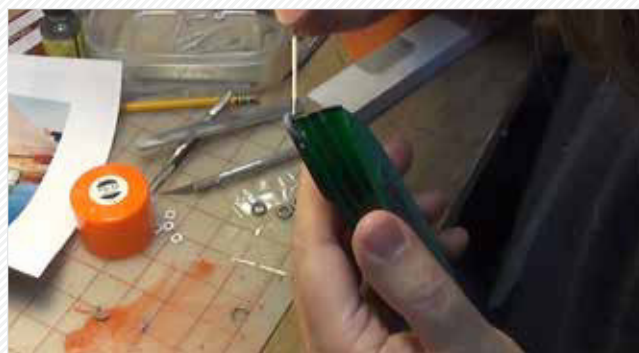
STEP 2 MAKING AND ADDING DETAILS



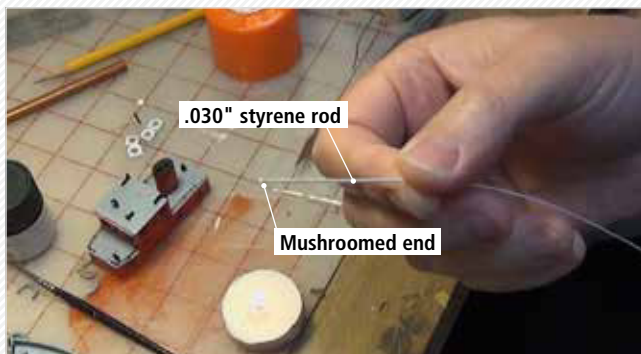
Touch-up and detail painting were the first jobs to tackle. Some of the red paint peeled away when I removed the masking after painting the gray. Once I touched that up, I picked out the details on the cabin with Tamiya X18 Semi Gloss Black. I also sprayed the top of the stack with the same color, thinned as before. Online photos were a great help in getting the right colors on all the parts.



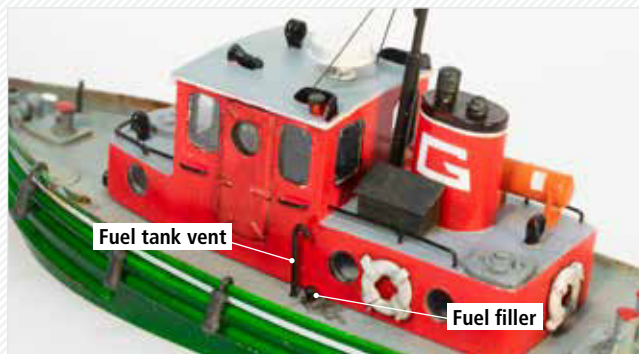
One of the details that stood out in photos was the large fender over the prow of the tug. The kit included a handful of cast resin tires to use as fenders down the side of the boat, but they weren't appropriate for our prototype. Cut up, though, they could work as the bow fender.



After removing a wedge from each of the tires, I glued them to the prow with thin CA. They were a bit too lumpy, so I popped them off the prow, then stacked them together neatly and flowed CA in the joints. When the adhesive cured, I carved the mating surface to better match the prow and get a better-looking bumper.



Another common detail on photos of the 45-foot Army boats was a pair of pipe fittings on each side of the cabin, which I took to be a fuel filler and vent pipe. I made the filler from .030" styrene rod that I held over a flame to melt the end into a mushroom shape, simulating the cap on the pipe.



The vent is a piece of stripped 20AWG wire bent over at the top. Both parts were painted Semi Gloss Black and glued into holes I made with a no. 68 drill in a pin vise. You can also see the fender made from painted resistors hanging over the gunwhale. The glazing was cut from the kit-supplied clear plastic.

STEP 2 MAKING AND ADDING DETAILS (CONT'D)



I continued adding detail parts. The radar unit is glued to the cabin roof. Life rings were added to the sides of the cabin in similar positions to what I saw in photos online.



The orange life raft canister is Evergreen .188" tube. I punched ends from .010" styrene, then cut the legs from the sheet around the punched holes.



Plastic beads are included in the kit to make running and navigation lights. The beads are hollow. I used a leather punch to make caps from .010" styrene sheet.



The black tool box on the deck was a scrap of Evergreen styrene strip sanded at an angle at the top. I glued a scrap of .005" styrene sheet to the angled top for a lid.

STEP 3 LETTERING, STRIPING, WEATHERING, FINAL ASSEMBLY



Trains.com associate producer Ben Lake put his graphics skills to work for me on this project to create the "Big G" for the sides of the stack. After creating the letters, he cut them from thin, self-adhesive vinyl on a Cameo scrapbooking cutter. He added a clear carrier film to keep the letters aligned while I applied them to the model.



The letters came in right and left versions – the front is vertical and the back is raked forward. Other lettering was done with decals. I used Microscale HO stripes and Block Gothic letters.



I started weathering with artists oil washes. First, I used a dab of Burnt Umber, which makes a good "old rust" color. I dabbed some in a few paint chips on the hull.

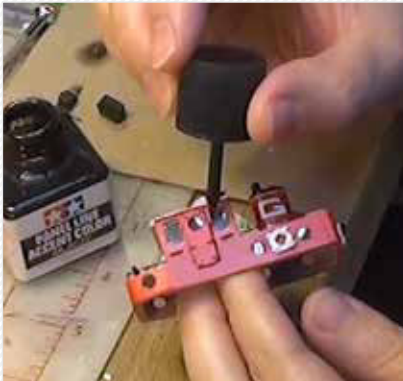
STEP 3 LETTERING, STRIPING, WEATHERING, FINAL ASSEMBLY (CONT'D)



I also highlighted the railings along the bits at the tops of the gunwales on either side and along the taffrail at the stern. I then placed dots of Burnt Umber on the boat's deck.



I washed the dots of paint around the deck with odorless turpentine. Dabs of Black and Burnt Umber around the fuel filler simulate spills.



On the cabin, I flowed Black Tamiya Panel Line Accent Color Black around the hatches. I dipped a cotton swab in enamel thinner to removed the excess and make the details stand out.



Then it was time for final assembly. First, the mast behind the cabin. Stays made from .008" brass are threaded through no. 80 holes in the cabin roof (see the lead photo). Once that was secure, I installed the cabin interior. 

Union Pacific Railroad (UP) class 4000

The Union Pacific Railroad rolled out the biggest restoration of 2019, the complete overhaul of the largest steam locomotive in the world – the **Big Boy**, road number 4014.

TRIX



To commemorate this event, Trix has reissued an accurately redesigned model in HO scale (Item No. 22163). This model was made specifically for the HO US market.

- RP 25 Wheels
- Kadee® Couplers

This metal model has a total of 14 design changes to accurately represent the prototype, including changing to an oil firing tender, "Big Boy" written on the smoke box door, applying the UP 4014 logo onto cab floor and more!

Also available in a Märklin H0 version (37997) and standard Trix HO version (22014).

Trix products are available from authorized Trix and Märklin dealers. See our complete line of products at marklin.com and trix.de/en. Contact customerservice@marklin.com for more information or to request a free New Items catalog.

©2020 Märklin, Inc.

Products bearing "Union Pacific" are made under trademark license from the Union Pacific Railroad® Company

HALF PRICE HOBBY .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.

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

Storage Boxes
Foam Lined
Self Closing
Fully Assembled

HO Scale
Holds 20 Cars - \$29.95
N Scale
Holds 36 Cars - \$29.95
Tote Bags
\$35.95
Plus S&H

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

Z-Stuff for Trains
Just connect two wires
for a working signal!
www.z-stuff.net
N SCALE crossing gate
DZ-1010N
\$78.00 ea.
Sensors Built-in
3 Arm speeds
AVAILABLE NOW!

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

NICHOLAS SMITH TRAINS
Model Railroaders 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
MINIMUM ORDER : \$30.00 • 15% Restocking Fee on Returns
PA Residents Add 6% Sales Tax

KATO N

KAT10032 D51 Steamer Starter Set.....	\$229.99
KAT101427 E4 MAX Shinkansen Set.....	\$199.99
KAT101529 TGV Réseau Duplex 10 Car Set.....	\$329.98
KAT101570 Twilight Express 10 Car Set.....	\$339.98
KAT101576 Superview Odonka 10 Car Set.....	\$299.98
KAT1060425LS CN F7 A/B DCC/Sound.....	\$469.98
KAT106069 PRR Broadway Limited 10 Car Set.....	\$209.98
KAT1060691 Above w. Lights.....	\$349.98
KAT106084 Santa Fe El Capitan 10 Car Set.....	\$209.99
KAT1060841 Above w. Lights.....	\$369.99
KAT1061021 CN Transcontinental 7 Car w. Lights.....	\$309.99
KAT1062015 Operation North Pole Set 2015.....	\$139.99
KAT1062016 Operation North Pole Set 2016.....	\$144.99
KAT1068001 Amtrak ACS-64 Bookcase Set.....	\$172.99
KAT1068002 Amtrak ACS-64 Set DCC/Lights.....	\$279.99
KAT1068002 Amtrak Amfleet PV VI Coach Set.....	\$39.99
KAT1065505 Amtrak Enclosed Auto carries PV5(4).....	\$69.99
KAT1065507 Amtrak Enclosed Auto carries PV3(4).....	\$69.99
KAT1260402KB1 UP FEF3 4-8-4 #838 Weathered.....	\$309.99
KAT1768411DCC UP SD70Ace #4141 W.DCC.....	\$149.99
KAT1768520LS UP SD70Ace #9041 W. DCC/SND.....	\$264.98
KAT1768930DCC BNSF ES44AC #5873 W. DCC.....	\$124.99
KAT1768930LS Above w. DCC/Sound.....	\$269.98
KAT1768932 UP ES44AC #5380.....	\$89.98
KAT1768932LS Above w. DCC/Sound.....	\$269.98
KAT1768935 CP ES44AC #8743.....	\$89.98
KAT1768935DCC Above w. DCC.....	\$149.98

MTH HO

MTH8022121 Erie Alco FA-1 A/B DCC/Sound....	\$200.00
MTH8022881 BNSF Dash 9 DCC/Sound.....	\$229.99
MTH8022911 CN Dash 9 DCC/Sound.....	\$229.99
MTH8023041 SF Dash 9 w. #629 PS3.....	\$229.99
MTH8023091 UP Dash 9 w. #9710 PS3.....	\$229.99
MTH8023320 Ferrosur ES44AC DCC Ready.....	\$114.99
MTH8023321 Ferrosur ES44AC DCC Ready.....	\$114.99
MTH8023501 GE Demo ES44AC w. Charging Lgh.....	\$249.99
MTH8023511 Christmas ES44AC w. Charging Lgh.....	\$249.99
MTH8023721 MTH R21 4 Car Subway Set.....	\$284.99
MTH8023791 MTH R22 4 Car Subway Set.....	\$284.99
MTH8023800 Spirit of Up SD70Ace #1943 DC.....	\$174.99
MTH8023801 Spirit of Up SD70Ace #1943 DCC.....	\$244.99
MTH8023960 UP SD70Ace #4141 DCC Rdy.....	\$174.99
MTH8023961 UP SD70Ace #4141 DCC/SND.....	\$244.99
MTH8023970 UP SD70H #9096 DCC Ready.....	\$174.99
MTH8023971 UP SD70H #9096 DCC/SND.....	\$244.99
MTH8023990 UP SD70 Ace #1111 DCC Ready.....	\$174.99
MTH8023991 UP SD70Ace #1111 DCC/Sound.....	\$244.99
MTH8032671 N&W J-Class #603.....	\$424.99
MTH8032711 SP Cab Forward #4138.....	\$514.99
MTH8032721 SP Cab Forward #4131.....	\$514.99
MTH8032741 SP Cab Forward #4130.....	\$514.99
MTH8032951 NKP 2-8-4 Berkshire #765.....	\$424.99
MTH8520160 BNSF GP38-2 DCC Ready.....	\$79.99
MTH8520171 BNSF GP38-2 w. PS3.....	\$109.99
MTH8520200 CSX GP38-2 DCC Ready.....	\$79.99
MTH8520240 Indiana Railroad GP38-2 DCC Rdy.....	\$79.99
MTH8520270 Maryland Midland GP38-2 DCC Rd.....	\$79.99
MTH8520261 Maryland Midland GP38-2 w. PS3.....	\$109.99
MTH8520330 P&LE GP38-2 DCC Ready.....	\$79.99
MTH8520370 UP GP38-2 DCC Ready.....	\$79.99
MTH8520410 CN GP38-2 DCC Ready.....	\$79.99
MTH8520470 Conrail GP38-2 DCC Ready.....	\$79.99
MTH8520521 Southern Pacific GP38-2 w. PS3.....	\$109.99
MTH8520530 Southern Pacific GP38-2 DCC Rdy.....	\$79.99
MTH8520160 FEC GP38-2 #510 DCC Ready.....	\$99.99
MTH8520621 FEC GP38-2 #505 DCC/Sound.....	\$149.99

****Other road numbers available for the items above****

Hours: M.- TH 10-7 • Friday 10-9 • 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 February 2021

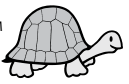
BENCHWORK in a HURRY

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

Sievers BENCHWORK
PO Box 100
Washington Island, WI 54246
920-847-2264
www.sieversbenchwork.com

SOUTHERN PACIFIC
Starlight HO Scale

The Coach Yard
Committed to Excellence
www.thecoachyard.com

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

MADE IN THE USA
800-6000 \$22.95
6006 6-PACK \$132.00
6012 12-PACK \$250.00

- 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

YankeeDabbler.com

Thank you for making YankeeDabbler your favorite hobby store!
Check out our complete train store!
Repairs and decoders installed.
N, HO, S, O, G
Authorized Dealer:
Digitrax, ESU-LokSound,
NCE, Soundtraxx, TCS


OPEN
Tue-Sat
Web(24x7)

(856) 312-8084 101 W. Kings Hwy.,
Bellmawr, NJ 08031
www.yankeedabbler.com



Sonny Fairbanks and Ed West kibitz in front of the Kingfield speeder shed on Lou and Cheryl Sassi's On30 Sandy River & Rangeley Lakes layout. Read how they improved the area around the shed compared to its earlier version (inset).

DETAILING the FOREGROUND

Don't neglect the area between your track and the fascia

By Lou and Cheryl Sassi • Photos by Lou Sassi



Overlooked by many of us, the area between the foreground tracks and structures and the fascia of our layouts can often be improved with the addition of a few details, grass, and weeds. This process can become an enjoyable series of “one evening projects.” My wife, Cheryl, and I decided to take this approach on our On30 Sandy River & Rangeley Lakes RR.

Before detailing, the area around the speeder shack in Kingfield was already realistically scenicked but lacked visual interest. There was nothing there to draw the eye.

I began by adding a few steel barrels from Tichy Train Group and Wiseman Models around the building. After spreading a drop of Elmer's Carpenters Wood Glue on the bottom of each one, I placed it into position. These were followed by strips of wood and roof trusses from the scrap box, along with a couple Bar Mills wooden kegs.



Here are the materials and tools used in this project, clockwise from bottom: wood glue, tweezers, awl, scissors, Bar Mills wood barrels, ladder, rafter bents, scrap wood, Wiseman Models and Tichy Train Group steel barrels, natural grass picked from a New York roadside, wild oregano from the garden, peppergrass, caspia, natural twigs, Woodland Scenics Field Grass, Clump-Foliage, and Fine Leaf Foliage.



The area around the Kingfield enginehouse benefited from the same superdetailing treatment, as shown in this photo.

Cheryl, the “Company Arborist,” then added various weeds and shrubs, mixing Woodland Scenics Field Grass, Clump-Foliage, and Fine Leaf Foliage with natural products. After dipping small clumps of each into Elmer's wood glue, she placed them into position, making fine adjustments with a pair of needle-nose tweezers.

Once all the weeds were planted, I found a ladder in the parts box and leaned it against the building. The “before and after” photos show what a difference this extra detailing can make. As another example, the photo above shows how we detailed the area around the Kingfield enginehouse, just a short distance from the speeder shack. [MR](#)



By joining his modeled road to the road on the backdrop with a curved fillet, Gregg Condon blurs the transition from scenery to backdrop, visually extending the scene. Read on to learn how Gregg does it.

Blending roads into backdrops

Continue the photo onto the foreground and the scenery onto the backdrop to blur the dividing line

By Gregg Condon • Photos by the author

What to do with a road where it runs into the backdrop? If you're a better artist than I, you can paint the continuation. Or you can end the road at a slightly angled mirror surrounded by trees. Perhaps the road can disappear around behind a hill or structure. Naturally, you can end a model

road at the base of a photo road in a backdrop. I've employed that latter tactic many times in the past, but for my new Milwaukee Road Shullsburg Branch layout, I wanted the blend of model road into backdrop to be more convincing than in my past efforts.

To solve the problem of blending model roads into backdrop roads,

I extended the backdrop photo road onto the layout so that the point where the two blend takes place on the layout, several inches in front of the backdrop. The blend is less likely to be noticed there than at an all-too-obvious right-angle seam between layout and backdrop.

Since completing all the roads on my layout, it belatedly occurred to me that

instead of a right-angle crease in the road at the base of the backdrop, the photograph road could curve into the layout surface with a fillet of about half an inch. I thought I was inventing something original, then learned from Tony Koester that he's already done this. [Modeler Tom Johnson wrote an article outlining a similar technique for the October 2010 *Model Railroader*. – Ed.]

Start with a photo

Since my layout is set in early autumn, I took my camera afield on a beautiful September day. I roamed the countryside where the terrain looks like the area I'm modeling and shot a couple dozen photos of main highways, smaller township roads, farm lanes, and some town streets.

Then I took my camera's digital chip to a copy shop and had them print my pictures. I selected a size of print in which the width of the road in the middle of the photo would be at my desired HO scale width.

The key to successfully blending a photo road with a model road is to have the photo road at scale width at the bottom of the backdrop. By having this desired width halfway up the photo, all of the photo can be cut off below that point with the paper road extending out onto the layout. The paper road flares out at bottom and must be trimmed to a uniform width on the layout ①.

Where the photo meets the road

After trimming the photo road to a uniform scale width, I cut the end of it to an irregular shape so that a straight-line seam isn't detectable in the finished road.

If creating a hard-surface road such as concrete or asphalt, give the model road material a dusting of spray paint of a color that approximates the color of the backdrop road. This dusting should be subtle and feather out to nothing in a few inches. Glue the backdrop road on top of the model road and blend the area with powdered pastels or weathering powders of a matching color.

For my gravel roads ②, I glue the paper road down first and blend the gravel material on top of that. I use commercial products of earth, rock, and ballast materials. I blend several shades of the commercial products until I have a batch of gravel that matches the color of the road in the backdrop ③. Where the gravel meets the paper, I give it a quick, light burst of spray paint. Be subtle; don't



① After selecting a photo of a scene that matches his foreground scenery, Gregg trims the bottom of the photo at the line where the road is the same width as the road in HO scale.



② After attaching the photo to the sky-blue-painted backdrop, Gregg extends the "tongue" of the road forward onto the layout and glues it down.



③ Gregg mixes a blend of gravel to match the color of the road in the photo and applies it over the tongue. Powdered pastels and spray paint help blend the two.



④ By gluing small amounts of the same ground foam he used in the foreground to the bushes in the photo backdrop, Gregg makes the two areas blend together visually.

use enough paint to cover the surface. On top of that, I brush matching weathering powders.

There's more than just pavement

It's not enough to match the model pavement to the backdrop pavement. The entire right-of-way should match. For my gray gravel road, I glued small amounts of green Woodland Scenics

ground foam to the center and shoulders of the road ④.

Between a fence and a road, the foliage is typically heavier than on the pasture side. I model this with various sizes of Clump-Foliage, static grass, and commercial weed clusters. I select colors that match the photo backdrop. When this beside-the-road green foliage ends at the backdrop ④, the two scenes don't quite match. To blend the two visually, I glued

small amounts of the green ground foam onto the bushes in the backdrop photo.

More realistic blending of model roads into backdrops can be achieved when the backdrop road extends onto the layout. [MR](#)

Gregg Condon lives in Greenville, Wis. His HO scale Mineral Point & Northern layout was featured in Great Model Railroads 2013.



Zephyr Express, the Fast Track to Digitrax Complete Train Control

- 3.0 Amp LocoNet Command Station, Booster, & Throttle
- Color 2.4" LCD Screen
- Large Backlit Keypad
- Runs up to 20 Loco addresses and throttles
- Integrated USB Computer Interface
- Control lights and sound with 29 functions
- Simple Set-Up with Easy to read display

Find out more @ www.digitrax.com/dcs52

Introducing



\$235.00 MSRP



Limited-Edition

LGB® Garden Railroading

Get on board and join the fun!

LGB Santa Fe passenger train "Super Chief" in Atchison Topeka & Santa Fe Railroad version. Locomotives are partially chrome plated to replicate the stainless-steel on the actual locomotives. The galvanic chrome plating process is done by hand and involves nearly 40-steps. It is the same process used in the automotive industry.



20582 Santa Fe F7B Diesel Locomotive



**20581 & 20583 Santa Fe F7A Diesel Locomotives,
different road numbers**

A complete Santa Fe "Super Chief" can be assembled using LGB streamliner cars (Nos. 36567, 36568, 36569, 36578, 36579). All cars have interior lighting, complete interior details and metal wheelsets.

LGB is offering a limited-edition Club model for North American LGB Club members only. Santa Fe F7 "Yellow Bonnet" (Item# 20584). The locomotive is partially chrome-plated to show the original locomotive's stainless-steel look. **Only 80 pieces available!**

For more information on joining the LGB Club, visit LGB.com

Join the Club!

- Subscription to LGB Depesche magazine
- Access to annual Club model
- 2 DVDs – A Year with LGB
- Special offers and more!





Build an adjustable TRACK CLEANING CAR

A styrene box with a tempered hardboard pad can be adapted to virtually any freight car

John Campbell modified this HOn3 gondola to accept a cleaning box made from styrene and tempered hardboard. A removable load conceals the added weight inside the car.

By John Campbell • Photos by the author

Keeping track clean is an important part of smooth, reliable operation on a model railroad. I like to drag a track cleaning car or cars with various trains all the time, not just once in a while when it seems to be time to clean the track.

You can choose from a variety of commercial track cleaners on the market or make your own. I like the kind that look like the other rolling stock on the railroad. That way, even when parked, the car looks like it belongs on the layout and doesn't stand out as a piece of equipment designed just for track cleaning.

Over the years I've seen a variety of cars. Most have a pad under the car with a couple of rods that fit into the body for support. I've built cars that have a metal plate and hardboard pad, suspended from the car with monofilament lines. I've had

good success with this type in On3. However, in HOn3, it was difficult to apply sufficient weight on the pad, so I tried a different technique using a hollow styrene box and tempered hardboard.

The design

I built the box from .060" styrene sheet (you may want to adjust the thickness depending on your scale). I suggest the width be 1.5 to 1.6 times the track gauge. The length, as a minimum, should be about 60 percent of the inner axle wheelbase. The purpose of these proportions is to make sure the pad doesn't fall down inside the rail on sharp curves.

On the bottom of the box is a piece of 1/8"-thick hardboard secured with five-minute epoxy. I then add a styrene flange

on the sides and ends. The flange can be any size strip so long as it allows the pad to ride on the rails and fits inside the inner walls of the car, allowing the box to move up and down freely **1**, opposite.

As a finishing touch, I paint the lower part of the box flat black so it doesn't stand out, as shown in the photo above.

Making the cuts

The styrene box fits into an opening cut into the bottom of a freight car. This will eliminate some of the underbody detail on most cars, but I was able to keep the outer truss rods on the gondola **2**. The truss rods help distract the eye from the styrene box.

To make the box easy to remove, use a car with a removable top or load. For

this project, I used a gondola with a scratchbuilt load. A boxcar with a removable roof would also work.

Adding weight

I added Woodland Scenics weights designed for Pinewood Derby cars to the gondola and styrene box. [You can order select Woodland Scenics weights from the Kalmbach Hobby Store website, KalmbachHobbyStore.com. – Ed.]

First, I added weight to bring the gondola up to 2 ounces. This is slightly below the $2\frac{1}{3}$ ounces in National Model Railroad Association Recommended Practice 20.1.

I then added $\frac{3}{4}$ ounce of weight to the styrene box. This brought the cleaning car up to $2\frac{3}{4}$ ounces **3**. One thing to remember is the weight of the car isn't what you're pulling with the locomotive. The friction of the pad on the rails is the real "load."

When I first built the cleaning car, I had additional weight in the box and car. However, I couldn't move it with a Rio Grande class K-28 2-8-2 steam locomotive. The drag on the rails was significant. After I reduced the weight, mostly in the box, the K-28 pulled the gondola up a 3 percent grade without any other cars in tow.

Of course, the weights I've shown are for an HOn3 application. The weight will vary based on the modeling scale, but the theory will be the same.

Keeping track clean

The cleaning car is a simple project that doesn't take much time to build. The tempered hardboard will clean the track well, and the box can be adapted to a variety of cars. You'll have to decide how much weight to add so you don't tax your locomotives more than necessary.

On my home layout, I run a track cleaning car around most of the time on the main line. I also back the car into sidings and branch lines with a locomotive to clean those areas. This gives me yet another reason to run trains. **MR**

John Campbell is a retired mechanical engineer and National Model Railroad Association Master Model Railroader. He models mostly in On3 and participates in On3 and HOn3 in a modular club, SlimRail, in Colorado Springs, Colo. John also has a garden railroad in Fn3. He wrote about his HOn3 module, Buffalo Rock, in the November 1999 issue of Model Railroader.



1 Basic box. John used styrene strip and sheet to build the cleaning box. He used 5-minute epoxy to attach $\frac{1}{8}$ "-thick tempered hardboard to the bottom of the box.



2 Easy installation. John cut a hole in the bottom of this HOn3 gondola to accept the cleaning box. The box should slide and move freely in the opening.



3 Adding weight. Assorted Woodland Scenics weights designed for Pinewood Derby cars brought the gondola up to $2\frac{3}{4}$ ounces. The removable load conceals the weights and interior modifications.

MODELING A snowy mountain SCENE



In the Colorado Rockies, snow isn't just for winter

By Doug Tagsold • Photos by the author

IT'S SAID THAT IN THE COLORADO MOUNTAINS, there are two seasons: the Fourth of July and winter. Though that isn't quite the case, the point is that the snowfall can occur at almost any time of the year, with July being the only month during which snow is unlikely. There can be snow on the ground in the mountains for more than half the year, yet it seems like few of us modeling mountain railroads include snow in our scenery.

As I progress on building scenery on my Colorado & Southern layout (see *Model Railroad Planning 2018*), I wanted

to include at least one section featuring a snow scene. In this case, I chose an area of the layout about 25 feet long and 2 feet deep. Though there have been many new methods for making mountain scenery over the years using various foam products and molds, I still prefer the ease and speed of the old tried-and-true method of plaster scenery over screen wire, with hand-carved rock work.

Wait a minute, did I say "speed?" Yes, as I can form up mountains and carve rock work faster using these old-school techniques than with more modern

methods. Besides, I enjoy the feeling of creating the mountains by hand and having no two areas of the scenery come out looking alike.

The following photos show my step-by-step progression of creating mountain scenery and finishing it off with a touch of snow. This entire 25-foot section of scenery was completed in one week, working three or four hours each day for six days.

I'm not saying that other modelers should try to do this in a week like I did, but however you space it out, this project



Even if your railroad isn't set in winter, if you model the mountains, snow wouldn't be out of place. In this article, Doug Tagsold shows how he built this 25-foot-long scene in about a week.

can be completed in approximately 28 working hours.

Though seldom modeled, a snow scene isn't difficult to create and can be a real attention-grabber for visitors. Why not give it a try?

Doug Tagsold is a regular contributor to Model Railroader and its special issues. See more of Doug's time-saving tips in Tony Koester's book Time-Saving Techniques for Building Model Railroads (Kalmbach Books, 2019, available on KalmbachHobbyStore.com).

STEP 1: Making mountains



1 I used some sheets of inexpensive white expanded-bead foam board to shape the profile of the mountains. Once I was satisfied with their overall shapes, I slid waxed paper behind the foam to protect the blue drywall backdrop from the plaster and paint I would be applying to the mountains.



2 I use pieces of aluminum window screen wire to form the mountains. I start with a piece about 3 x 8 feet and crumple it into a ball about the size of a basketball. This gives the wire irregular bends and shapes. I then unfurl the screen wire and straighten out the back edge, attaching it to the top of the white foam profile board. I stick 2" paneling nails through the screen into the foam to tack it in place. I then rough-cut the outer edge of the screen alongside the tracks, leaving a few extra inches to allow for adjustment later.

STEP 1: Making mountains (cont'd)



3 I use scrap pieces of foam or blocks of wood to support the window screen. Not much support is needed, as the base scenery is light and becomes self-supporting once the plaster gauze applied in the following steps dries.



4 A hot knife is a handy tool to use when cutting and carving pieces of foam. In this photo, I've glued several pieces of higher density extruded-foam insulation board (blue) along the outer edge of the benchwork, forming the outer bank of a future mountain stream. A utility knife or a key-hole saw can also be used for shaping the foam.



5 The next step is to apply pieces of plaster gauze over the screen wire. I prefer to work with pieces roughly 8 inches square, overlapping the edges by an inch or so. This entire 25-foot section of layout was covered with screen wire, then plaster gauze, in the first four hours of the project. At this point, I stopped working and let the plaster gauze dry.

STEP 2: Adding rocks



1 The next day, I marked the more vertical areas of the mountain scenery. These would be where I would apply and carve plaster to represent rock outcroppings. For those of you who prefer to use plaster from rubber or latex molds, this is where you would place them.



2 I make my rock material by mixing equal amounts of plaster of Paris, play sand, and water in a 2 gallon plastic bucket. It starts as a soupy mix, then I add small amounts of sand and plaster until the bucket is about half full of a mixture stiff enough to hold its shape when spread on the base scenery with a putty knife. Working on about a 1-square-foot area at a time, I apply the plaster mixture, varying the thickness from 1 to 3 inches. This thickness allows for carving in some relatively deep cuts and forming irregular shapes.

STEP 3: Texture and color



3 Once mixed, the plaster mixture has about a 10-15 minute working time before it hardens. I begin the carving process using an artist's knife (any knife could work), cutting parallel strata into the wet plaster. It's not important that the cuts be perfectly horizontal; in fact, they will look more realistic at an angle, depending on the mountain scene you are trying to represent. Having photographs of the mountains you're trying to model is very helpful. The most important thing is that the strata all be parallel. Avoid making "X"s in the plaster.



4 As the plaster begins to harden but is still "green," I place my knife part way into the parallel cuts and slightly twist it. This causes bits of plaster to break away, forming natural-looking rock outcroppings. In areas where the plaster was inches thick, I'll break off some larger pieces. In others, I'll break off very little. Once satisfied with the overall look, I use an old 2"-wide paintbrush to clean off the carved plaster, smoothing over rough edges and sweeping away the discarded pieces of plaster. When brushing over green plaster, be sure to move the brush in the same direction as the lines carved into the plaster, as the brush will make fine lines in the rocks.

The process of mixing and carving plaster rocks on the vertical surfaces of the mountains is the most time-consuming part of the project. Yet by having all of the materials nearby and working at a steady pace, I completed the rockwork in three days, working for three or four hours each day. I collected all the broken bits of plaster and stored them in another bucket. Much of this material would later be glued in place along the banks of the stream.



1 On the fifth day, I brushed on a coat of texture paint over the plaster gauze that wasn't covered with carved plaster rocks. The texture paint (a thick paint and plaster combination, used to make patterns on walls or ceilings) fills in the small holes and hides the seams where the plaster gauze pieced overlapped. Normally, when the texture paint has dried, I'd paint these areas with an earth brown paint, but since I was planning to have these mountains covered with snow, I left the texture paint white.



2 While the texture paint was drying, I began coloring the rocks with a wash of brown latex paint diluted 1:2 with water. At first, the wash appears a bit dark, but it lightens as it dries. When that was dry, I used a stain of diluted India ink (98 percent isopropyl alcohol, 2 percent ink) to bring the rockwork to the desired darkness. Several applications may be required. It's best to let each application dry completely before applying another coat, as the darkness can change as it dries.

STEP 3: Texture and color (cont'd)



3 To represent bushes and distant trees, I applied areas of coarse ground foam on the upper areas of the mountains. I like to make patchy clumps, rather than spreading the material evenly over the mountainsides. Diluted white glue is used to hold the ground foam in place.



4 White non-sanded grout, available from home building stores, makes great snow. I first spray a mist of water over the mountain scenery, then sift the grout through a fine-mesh sieve onto the scene. Letting the grout drift straight down onto the mountain gives the natural look of freshly fallen snow. The snow will fall and stay on the more horizontal surfaces, but won't settle on vertical surfaces, leaving the hand-carved rock surfaces exposed. The grout adheres to the wetted surfaces, not requiring an additional application of glue or adhesive. However, to build up the depth of the snow in several places, I lightly sprayed on more water and sifted on additional layers of grout. I learned not to be stingy with the material. The 10-pound bag I bought would have been enough to cover my entire layout with snow.

STEP 4: Field and stream



1 To prepare the streambed, I poured a thin layer of sand and natural dirt onto the stream's banks and bottom, then added some of the chunks of plaster that I'd saved and colored with the same washes that I used on the rock work. I soaked it all with wet water (water with a bit of detergent added to break the surface tension), then applied diluted white glue (three parts water to two parts glue) to secure the sand and rocks in place.



2 Now it was time to ballast the track. I used Woodland Scenics Fine Cinder Ballast, spread evenly with a 1" brush, then secured in place with a spray of wet water followed by diluted white glue. While the ballast was still damp, I sifted a dusting of grout "snow" onto the ballast and track. I wiped off the tops of the rails, then applied more diluted white glue between the rails and along the ends of the ties. It was now the end of day five, so I stopped to let everything dry.



3 Next I planted the trees, using evergreens from various manufacturers plus some handmade trees. I worked my way from the mountaintops toward the foreground, placing the shortest trees in the background and the taller trees closest to the tracks in the foreground to force perspective. I also placed some bare trees made from sagebrush branches to represent deciduous trees that had dropped their leaves for the season. Rather than poking holes in the scenery to plant the trees, I use thick cyanoacrylate adhesive (CA) to hold the trees in place. I place a drop of CA on the scenery, put the base of the tree into the glue, then spray it with CA accelerant (also known as "kicker"). Within seconds, the tree is standing in place on its own.



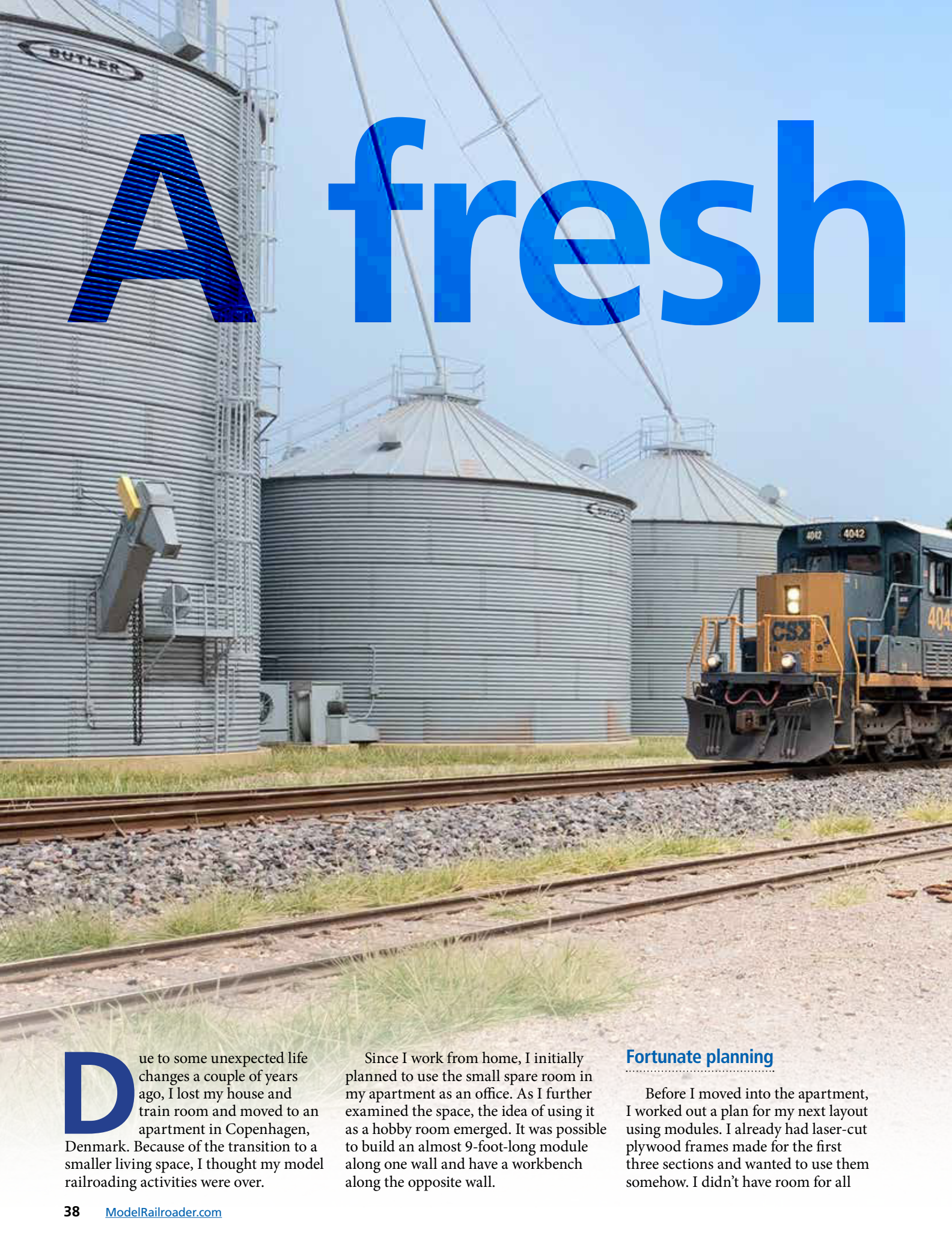
4 With the trees in place, it was time to pour the water in the stream. I first made a masking tape dam where the stream met the edge of the layout to keep the water from flowing over the edge. I then mixed up a quart of two-part Enviro-Tex resin, then thoroughly stirred in a couple drops of dark blue Testor's enamel. To control the flow of the resin into the riverbed, I held a stirring stick at the edge of the container, allowing the resin to flow down the stick into the riverbed. Once it was all poured, I used the end of the stick to push the Enviro-Tex into any nooks and crannies between the rocks. Gently blowing on the surface caused air bubbles to disappear. Once I was satisfied with the result, I allowed the resin to harden overnight.



5 Now on day seven, all I had to do was make some ripples or small waves in the water to give the appearance of flowing water. During the winter months, the water level is normally quite low and moves slowly, so I didn't want my stream to look like fast-flowing rapids. Instead, I made small waves and ripples in the water by using a 1/4"-wide paintbrush to apply Gloss Heavy Gel from Liquitex, available from

most craft stores. The gloss gel goes on white but dries clear in an hour or so. To replicate faster flowing white water, tips of bright white silicone caulk could be added on the tops of the waves, but I opted to stick with the slower flowing look for this scene.

The final step was to give the track a final cleaning, then run a train through the scene. [MR](#)



A fresh

Due to some unexpected life changes a couple of years ago, I lost my house and train room and moved to an apartment in Copenhagen, Denmark. Because of the transition to a smaller living space, I thought my model railroading activities were over.

Since I work from home, I initially planned to use the small spare room in my apartment as an office. As I further examined the space, the idea of using it as a hobby room emerged. It was possible to build an almost 9-foot-long module along one wall and have a workbench along the opposite wall.

Fortunate planning

Before I moved into the apartment, I worked out a plan for my next layout using modules. I already had laser-cut plywood frames made for the first three sections and wanted to use them somehow. I didn't have room for all

start

Contributing editor Pelle Søbørg switches to modules for his latest HO scale project

By Pelle K. Søbørg

Photos by the author



① A local, led by CSX SD40-3 no. 4042, rumbles through Daneburg on contributing editor Pelle Søbørg's new HO scale modules. The modules, which measure 28" x 11'-8", are set in the present-day Midwest.

three sections in the apartment. Instead, I used two full modules and cut the third module frame to 11".

My modules follow the specifications of the European FREMO-US HO single-track standard. In theory, they can be part of a larger layout. Modules offer a way to enjoy the hobby for those who

don't have the space for a permanent layout. There are at least two FREMO-US events in Denmark every year where modelers from Northern Germany and the Scandinavian countries meet to run trains on a large layout.

Composing scenes on modules is a bit different than on a traditional layout. On

a regular model railroad you usually compose scenes to be viewed from one side. On modules, scenes will be viewed from both sides. You can take no shortcuts like skipping details on the side of the structures facing the backdrop.

The original scene I'd planned was for a 12-foot module. Now, with less



2 Pelle set the modules on a shelf in a spare room in his apartment. Since the modules are double-sided, if he needs a change of scenery he can flip them around and view them from the other side. The photo at right shows one of the laser-cut module frames.

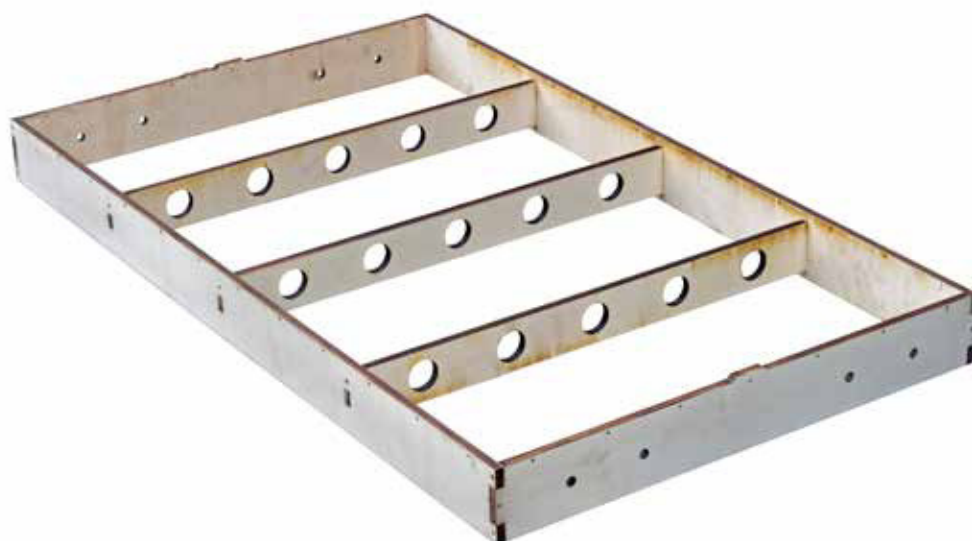
than 9 feet available, I had to compress the scene more than I would have preferred, but compromising is part of model railroading.

Since we almost always lack the space for the layouts we want to build, they end up becoming a caricature – an artistic one, but a caricature nonetheless. I try to avoid that in my modeling. I like plenty of space between objects and roads that are the correct width. I would rather sacrifice a structure or two to preserve the feel of a real place.

Digital reality check

The best way to check the realism of a scene is to view it from the perspective of a scale figure. Fortunately, my iPhone affords that opportunity. Because of its offset camera lens, I can shoot pictures as if I were an HO scale figure standing in the scene.

I use the Adobe Lightroom camera app when I shoot. It has a professional mode that allows you to manually adjust focus and white balance. You can also shoot Camera-Raw images. I shoot a series of pictures of the same scene with different focal points. Then I stack and merge them in Photoshop to get the maximum depth of field.



Handlaid track

Ever since I started in the hobby I've always liked the look of handlaid track. However, I never used it on any of my prior layouts. What held me back was that the wood ties traditionally used for handlaying track lacked details like tie plates and spike heads.

Some time ago I discovered Central Valley Model Works (CVMW) tie strips and thought they offered the perfect balance. With them you can create the fluid track flow that characterizes handlaid track and still have the details found on flextrack. My modules provided the perfect opportunity to use the CVMW tie strips.

I paired the tie strips with Micro Engineering rail. On the main I used

code 83, which is the standard rail size for European FREMO-US modules. The siding has code 70 rail, and the spur uses code 55. [Learn more about Pelle's techniques for handlaying track with CVMW ties and Micro Engineering rail in the March 2021 issue of *Model Railroader*. – Ed.]

On my modules, as on previous layouts, I used cork roadbed. To match FREMO standards, I used 5mm (.2") for the main. The siding has 2mm (.080") roadbed. I laid the track for the spur directly on the plywood.

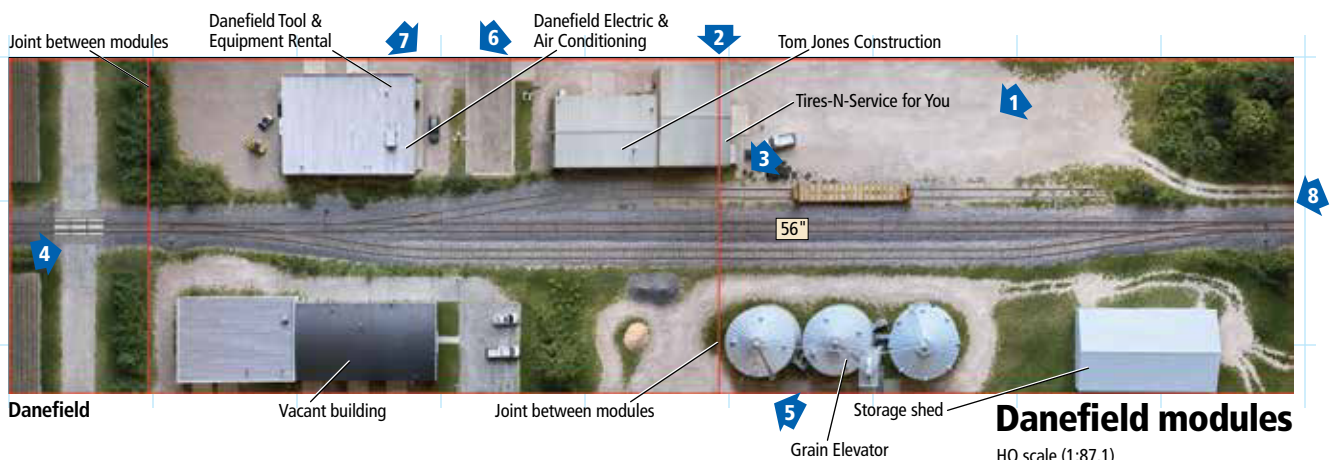
Scenery and structures

The scene represents the outskirts of a typical Midwestern town. I like the Midwest, but I have to confess that the



The layout at a glance

Name: Danefield modules
Scale: HO (1:87.1)
Size: 28" x 8'-11"
Prototype: Union Pacific
Locale: generic Midwest
Era: modern
Style: module
Mainline run: none
Minimum radius: none
Minimum turnout: no. 7
Maximum grade: none
Benchwork: laser-cut plywood modules
Height: 56"
Roadbed: cork
Track: handlaid codes 83, 70, and 55
Scenery: plywood
Backdrop: photos on lightweight PVC
Control: Lenz Digital Command Control



Danefield modules

HO scale (1:87.1)
 Layout size: 28" x 8'-11"
 Scale of plan: $\frac{3}{4}" = 1'-0"$, 12" grid
 Numbered arrows indicate photo locations
 Photo by Pelle Søeborg
 Find more plans online in the
 ModelRailroader.com Track Plan Database.

3 The track on European FREMO-US modules goes right up to the edge, eliminating the short sections of unballasted track found on other module designs. Accurate benchwork, construction, and track laying is key to ensure the modules line up properly.



④ Wanting to get the most out of the available space, Pelle installed an 11" extension module that features a rural grade crossing scene and cornfields. Pelle used a variety of modern materials to give the scene a realistic look.



reason I modeled it again is that I'm cheap. I had so many scenery materials left over from my Midwest-themed Daneburg layout (featured in the May 2017 issue of *Model Railroader*) that I figured, why not use them?

The scenery on my module wasn't difficult. It's largely dirt and grass-covered areas with a few trees and bushes. The dirt is from Arizona Rock & Mineral. It's a 50/50 mix of Low Desert Soil and Industrial Dirt.

For grass I used static flock from MiniNatur in various shades and lengths. The choice of colors is important when creating realistic scenery. Though I model summer, the static flock colors I use are early fall, late fall, and golden beige.

The majority of the structures on my modules are scratchbuilt, mainly from styrene. Examples can be seen on the opposite page. They're all based on real buildings that I've come across during my trips to the Midwest. During my research trips, I always look for buildings that are plain. It's the



⑤ Everyday details, such as the small piles of gravel and ballast, add to the realism of this scene. Pelle also added scratchbuilt details to the Walther's grain bin in the foreground. Hints of rust indicate the bin has been around awhile.

common structures, ones often overlooked, that make a scene look realistic.

A side benefit of constructing modules instead of an entire layout is that I have more time to devote to individual structures. Scratchbuilding small

structures is an aspect of the hobby I've come to enjoy more and more.

Another perk of modules is you have more latitude when it comes to the railroad you model. I used to model the Union Pacific for various reasons. Even



though I sold about half of the trains from previous layouts, my locomotive fleet is still dominated by yellow diesels.

Recently I've acquired a few CSX engines. I like the look of its six-axle SD40-3s road locomotives.

Realism in modeling

Life is barely long enough to be good at one thing, and my quest to achieve maximum realism in my scenes has been a driving force in my modeling ever since I started in the hobby back in the early 1990s. Over the years I've built four layouts and now modules. I feel my modeling has improved each time.

Some of this can be attributed to better scenery materials. However, it's also important to be self-critical. Never let anything pass that looks even the slightest bit off. I'm not talking about compromising. We all have to compromise in our modeling, and that isn't a problem. You just have to choose the best compromise, and that isn't necessarily the same as the easiest solution. **MR**



6 Scratchbuilding structures is an aspect of the hobby Pelle has come to enjoy. This building, at one time a store of some kind, is now occupied by a heating and cooling company and a tool rental business.



7 Pelle again turned to Woodland Scenics Smooth-It for the streets on his modules. He finds the slightly non-uniform surface of the plaster-based material realistic. Pelle added cracks and grooves to the streets.



8 Pelle had long been interested in handlaying track, and the modules gave him an opportunity to try it. He used Central Valley Model Works tie strips and turnout kits with different codes of Micro Engineering rail.



Make your own STATION KIT

Commercially available siding, roofing, and details make the Wingate, Ind., depot an ideal first scratchbuilding project

By Tony Koester

Photos by the author



① The Nickel Plate's Wingate, Ind., depot is a signature structure on Tony's portable O scale layout. The prototype (inset) was a simple frame structure that lends itself to a scratchbuilding project using Evergreen styrene novelty siding, Plastruct molded shingle sheets, and Grandt Line door and window moldings.

Materials list

Evergreen Scale Models styrene

164 .080" x .080" strip
4080 .040" x .080"-spacing V-groove siding
4100 .040" x .100"-spacing V-groove siding
4150 .150"-spacing novelty siding
9080 .080" plain styrene sheet

3604 people doors (2)
3618 freight doors (2)
3721 windows (8)

Plastruct

91631 asphalt shingles

Grandt Line (sanjuandetails.com)

3578 chimney (1)

The Nickel Plate Road depot at Wingate, Ind., is a signature structure on my portable O scale layout, which was featured in the January to April 2020 issues of *Model Railroader*. There was no off-the-shelf kit for the structure. Instead I scratchbuilt the depot, guided by prototype photos I took, as well as drawings by Harold W. Russell that appeared in the March 1995 MR.

Many newcomers to the art of scale model railroading shudder at the prospect of having to build a complicated kit, let alone building something from raw materials. But that's not how we tackle scratchbuilding today; we almost never use "raw" materials. So the hardest part of any scratchbuilding project is rounding up the commercial components

you'll need: siding, door, and window moldings; roofing materials; and a few detail parts.

I've listed everything you'll need in the accompanying materials list. You can make substitutions to suit your own preferences and modeling scale. This task is therefore a rather simple matter of cutting the siding and trim to length, fitting the pre-molded shingles in place, preparing the windows and doors, and gluing the whole shebang together. You can do most of this work in one long day or a few evenings.

Study the drawings and photos

A careful look at the Nickel Plate Road's wood depot in Wingate, Ind., ① reveals it to be a simple box. There's not

even a dormer roof over the bay window. A rear view of the model and prototype is shown in ② on the next page.

To make the project even simpler for O scale modelers, I've reduced the length of the roof (and hence the depot) by a few feet to an even 48 feet – or 1 foot long in ¼" scale. That's because the Plastruct shingle material comes in 12" widths; seamlessly splicing molded shingle panels isn't that easy. You could build the depot to its full-scale length and use individual shingles, but keep in mind that you don't want to wind up with a roof that looks like it should have been re-shingled five years ago, an all-too-common fault of many craftsman-style kits and scratchbuilt models. Watertight roofs are a hallmark of railroad structures.



2 The rear (north) wall of the depot had two windows, a public-access door, and a door where trucks could deliver or pick up freight. The NKP painted the moving parts of windows and “people” doors black; Tony used Grimy Black.

Moreover, the lack of a few feet of length is hardly noticeable and is actually an advantage when used on a compact layout like Wingate.

Window and door openings

I don’t want this overview to turn into a “set of instructions,” but a few tips are in order. The walls are made from Evergreen .150"-spacing novelty siding. The floor is Evergreen .080" plain styrene sheet.

I opened the cutouts for windows and doors by first “drilling” a hole in the center of the opening with a used no. 11 hobby knife blade. I enlarged the hole sufficiently to accept the square head of a sheet-metal nibbler, available from Micro-Mark and electronics stores. I nibbled up close to the final

dimension lines drawn in pencil on the siding, then finished the opening with a mill file. It didn’t have to be exact, as the window and door trim would cover any uneven edges.



The window and door choices I listed aren’t exactly the same dimensions as those on the actual structure, but for my needs they were close enough. This is a building intended for use on a portable layout, which means the depot will be handled a lot. Making to-scale windows and doors out of individual strips of styrene wouldn’t be a good choice for this case.

The bay window was easily fashioned from three more of the same Grandt Line (now part of San Juan Car Co.) double-hung windows with their peaked top trim filed off. The freight door is a Grandt Line part with the doors replaced by .080" Evergreen scribed siding mounted at a 45-degree angle to match the prototype.

I made the basic roof structure from Evergreen .100" V-groove siding, facing toward the ground, braced with triangular inserts to keep the roof from developing sags and to center it precisely

between the end walls. I bonded the Plastruct shingle material to it using its orange-label Plastic Weld solvent; regular styrene solvents don’t work well with the ABS the shingles are molded from.

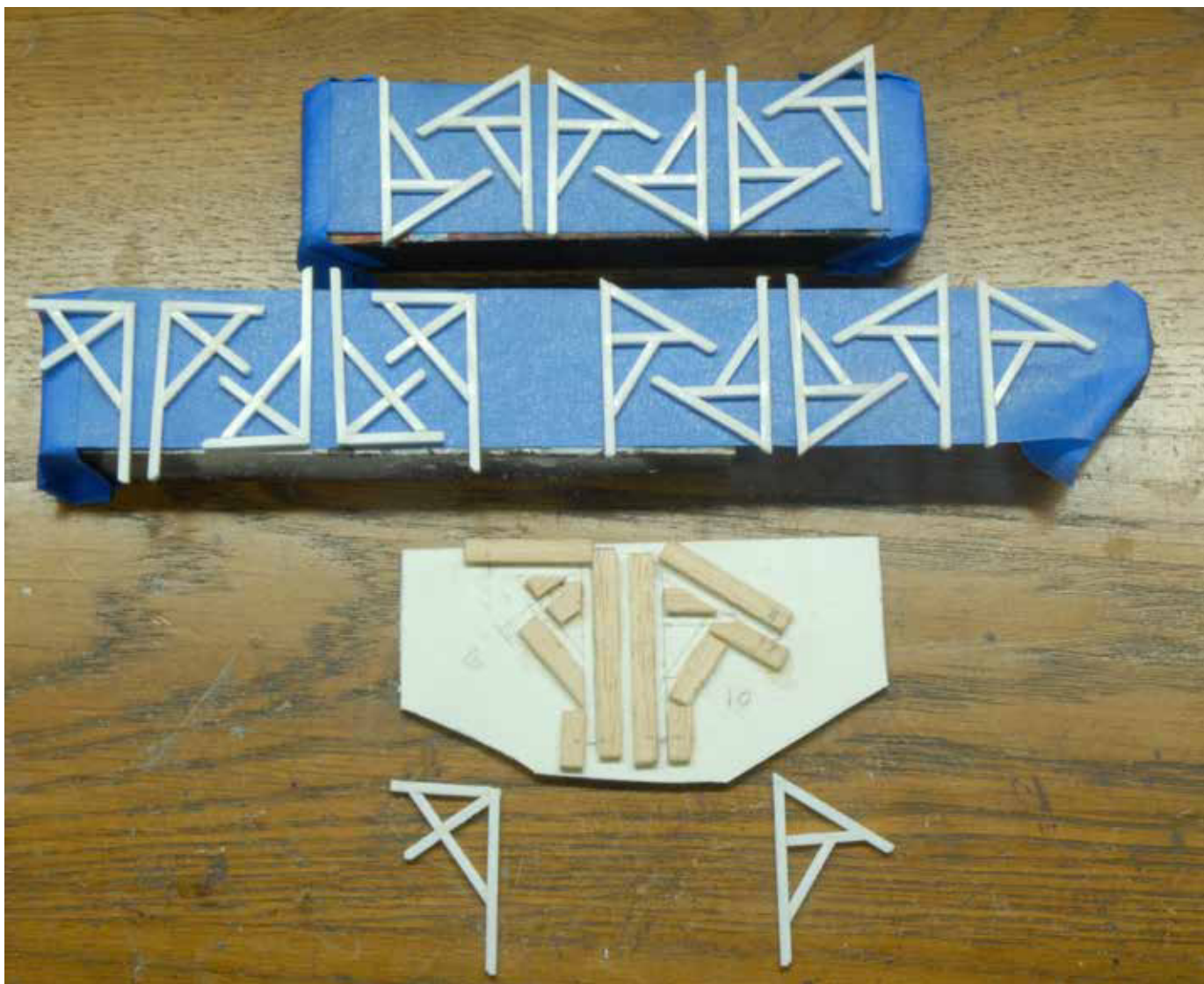
I formed the eave brackets from .080" square styrene in a basswood jig, 3 (opposite). By applying solvent sparingly, the brackets (usually) didn’t stick to the jig. Remember not to glue the brackets to the roof if you later plan to remove it to add interior detail and lighting.

The brick chimney is a Grandt Line molding with the ornate top trimmed off. I added a waybill box near the front door made from some scraps of styrene.

Painting and weathering

I brush-painted the walls a medium gray hue – Polly Scale’s discontinued Milwaukee Road Gray. I’m sure anyone following the article will have his or her own color preferences.





3 Simple cardstock and basswood jigs were sufficient to align the styrene strips that comprise the roof eave brackets.

The Nickel Plate painted the movable parts of “people” doors and windows black; I used Grimy Black to avoid making them inky dark. The NKP painted the trim around doors and windows a lighter gray; I used Pactra Flat Camouflage Gray.

The NKP used green shingles on most roofs, including Wingate. Polly Scale’s Depot Olive is a good match. Any medium green with a yellow tint would work.

The station signs, 4, are simply strips of styrene with WINGATE printed out in Arial typeface and glued to the styrene with canopy glue. Avoid using Helvetica, as it’s much too modern; the vertical tail on the G is a giveaway.

Since Rob Manley introduced the model railroading community to the use of PanPastel colors at a Chicago-area Railroad Prototype Modelers meet some years ago, I’ve used them for almost all weathering projects. They’re not

“weathering chalks,” but a very different compound originally intended for use by artists who are accustomed to using pastels. As long as they’re applied to a very flat or matte surface (that is, one with a bit of “tooth”), they adhere well and don’t need to be sealed with an overspray of clear finish.

The idea is to avoid having a structure that looks like it was painted and re-shingled yesterday. I therefore use a range of PanPastel colors from white through various grays and charcoals to black, plus some tans and browns. I also have some Tuscan and rust colors for weathering freight cars.

Streaks of a grimy black color running down from the chimney and peak of the roof are a good start. I added some dirt splashed up by rain. The PanPastel foam applicators look like those used to apply makeup, but are much firmer. I especially like the wedge-shaped one.

WINGATE

4 Station signs are easy to make using a thin strip of styrene a bit wider than the height of the lettering, surrounded by strip styrene framing painted black. The lettering font is Arial; Helvetica is too modern.

On to the next project

If this was your first scratchbuilding project, I hope you found it wasn’t as difficult as you may have imagined. Now that you’ve seen what’s involved, find another basic structure such as a small lineside shanty, round up the materials you need, and add another distinctive and probably unique building to your railroad. This time, you really won’t have to read the instructions! **MR**

How to set up REMOTE-CONTROL



Not everyone has to be in the basement to run your trains

By **Dave Abeles** • Photos by the author

Model railroading is more than constructing detailed models of equipment and scenery. We also have a camaraderie in the hobby that makes it exceptional.

Just as railroaders work together to run trains on the prototype, so do model railroaders work together to hone the craft of moving trains on our layouts. The idea of prototypically operating model trains was a revolutionary step in the hobby. The decision to embrace operations is one rarely regretted. Prototype operations naturally require cooperation, which adds to the richness and variety of model railroading.

But what if some members of the group can't be physically present? Happily, technology makes it possible to keep the operating fun going even when the members of the crew are far away.

Foundations of remote operation

Remote operations start with the dispatcher, the person in charge of directing movements on mainline tracks. Dispatching on real-world railroads is almost always from a remote location, an office or facility authorizing movement over hundreds of miles of track from a single workstation.

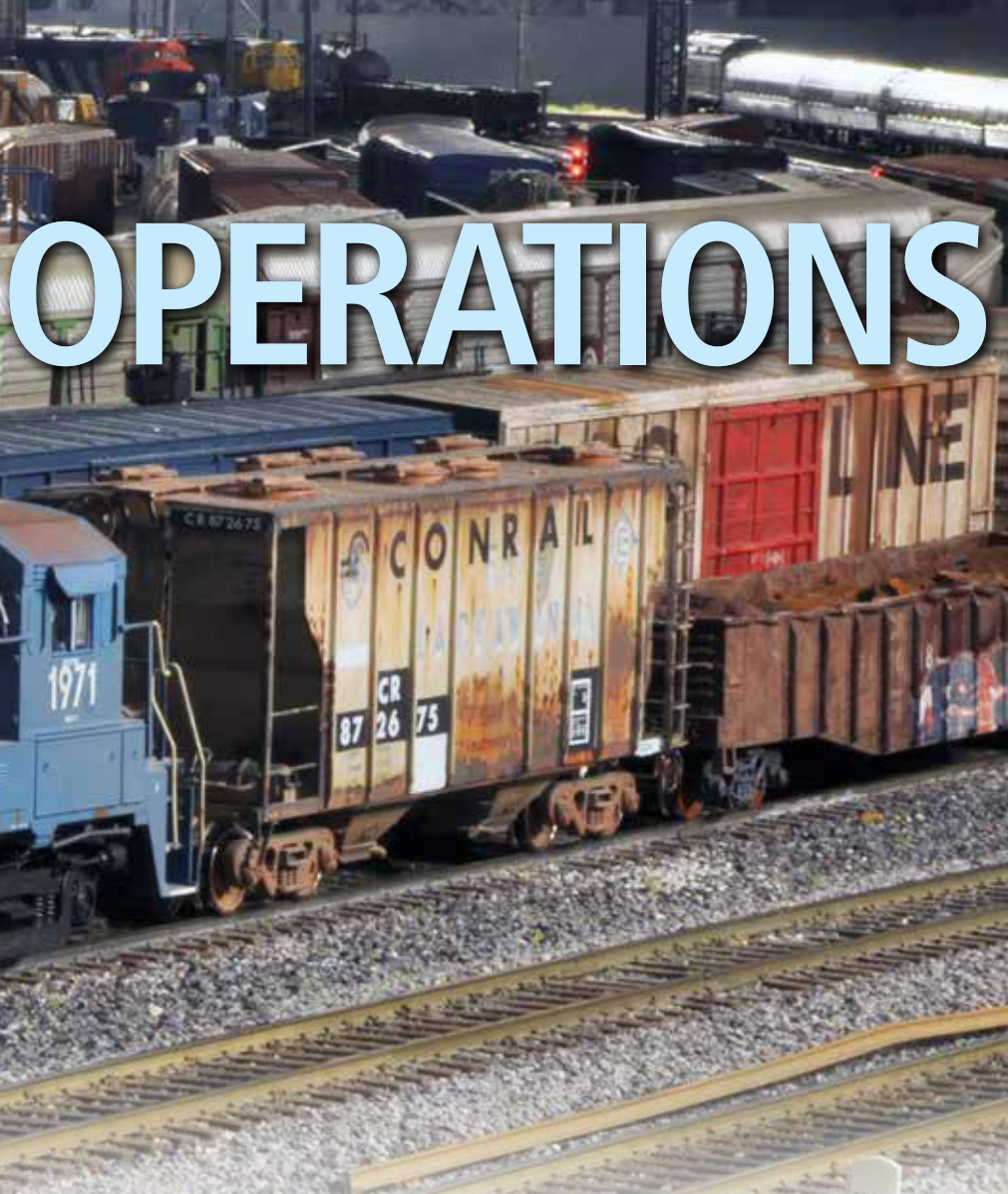
Operations on my HO scale Onondaga Cutoff emulate the methods used by Conrail in the middle 1990s. Conrail's dispatchers for the Albany Division worked from offices at Selkirk, N.Y., southwest of Albany, and controlled trackage from Boston to Buffalo, N.Y.

On the Onondaga Cutoff, the Centralized Traffic Control (CTC) system combines working signals and written track authorities communicated by

radio. Using established Digital Command Control (DCC) technology coupled with an internet-enabled personal computer (PC) running the Java Model Railroad Interface (JMRI), we created an operating scheme that mimics prototypical CTC installations.

The railroad is dispatched using a digital panel developed in Crandic Automated Traffic System (CATS), which is an overlay to JMRI.

Each mainline track is equipped with block detection, which allows the software to "see" which tracks are occupied and which aren't. The dispatcher lines routes across the track using a click of the computer mouse. Logic in the software determines if the route is lined and displays appropriate aspects that are defined in the software. (For more on how to wire block detection and CTC,



OPERATIONS

Conrail yard job YAON-14 slowly rolls west in Onondaga Yard on Dave Abeles' HO scale Onondaga Cutoff. The conductor riding the end platform is communicating with the engineer. With a remote engineer connected to the layout via the internet, a "ground man" in the layout room acts in the same manner, guiding the engineer.

my book *Guide to Signals and Interlockings* is scheduled for release from Kalmbach Books in April.)

Handling such dispatching from the PC in the layout room is straightforward. We set up a workstation on a desk in the corner of the room using ethernet cable and a secondhand PC, linking that to a router that in turn allows us to use software to send remote inputs to a second computer that directly controls turnouts and signals.

The software we chose is called TeamViewer, a free application that assigns a username and password each time it is opened. By opening that software on the corner workstation and entering the access information there, the corner workstation can control the second, direct-control PC from across the layout room. Jack Trabachino, a

lifelong friend who designed the operating scheme for the Onondaga Cutoff, routinely acted as dispatcher.

During sessions, radio communication is via Family Radio System (FRS) radios. Since these little radios have a range of about a half mile, another option came to mind: the dispatcher could sit outside the layout room in another room of the house (say, my attic) and use a combination of a PC running TeamViewer and my household Wi-Fi network to control the direct-control PC in the layout room. This lets the dispatcher view the dispatcher screen on his/her laptop device in the attic and use the FRS radios to communicate with train operators, as normal.

Included with JMRI software is a server that supports using handheld devices such as smartphones or tablets as

throttles when connected to the Wi-Fi network for the layout. Any device will work with either WiThrottle (for devices running iOS, such as Apple iPhones or iPads) or EngineDriver (for Android and Windows-based devices). Both offer free downloads in the App Store on your device, as well as a for-sale app with additional features. This system works side-by-side with regular DCC throttles whether tethered or wireless and offers some great features, such as the ability to label all function buttons for each decoder with the assigned sound or light function.

Alex Lang, another friend of mine who has been instrumental with the hardware aspects of the Onondaga Cutoff, realized that by using the internet in conjunction with the Wi-Fi network software, other possibilities could be available using the cable modem via the internet.

Because Alex had a real desire to participate in layout sessions, momentum started to build to push the limits. Alex wanted a way to participate in sessions despite living out of state. Like the prototype that uses computer networks to control hardware in the field, combined with a radio system that includes base stations and repeaters, we could equip our model railroads to operate with a fully remote dispatcher.

Since the TeamViewer approach to dispatching works from any internet-enabled device, that part was already working. The question was the radio communications. How could we still use FRS radios in the layout room while having the dispatcher many miles away hear the conversation? How could they reply and be heard by all operators?

Skype as a radio repeater

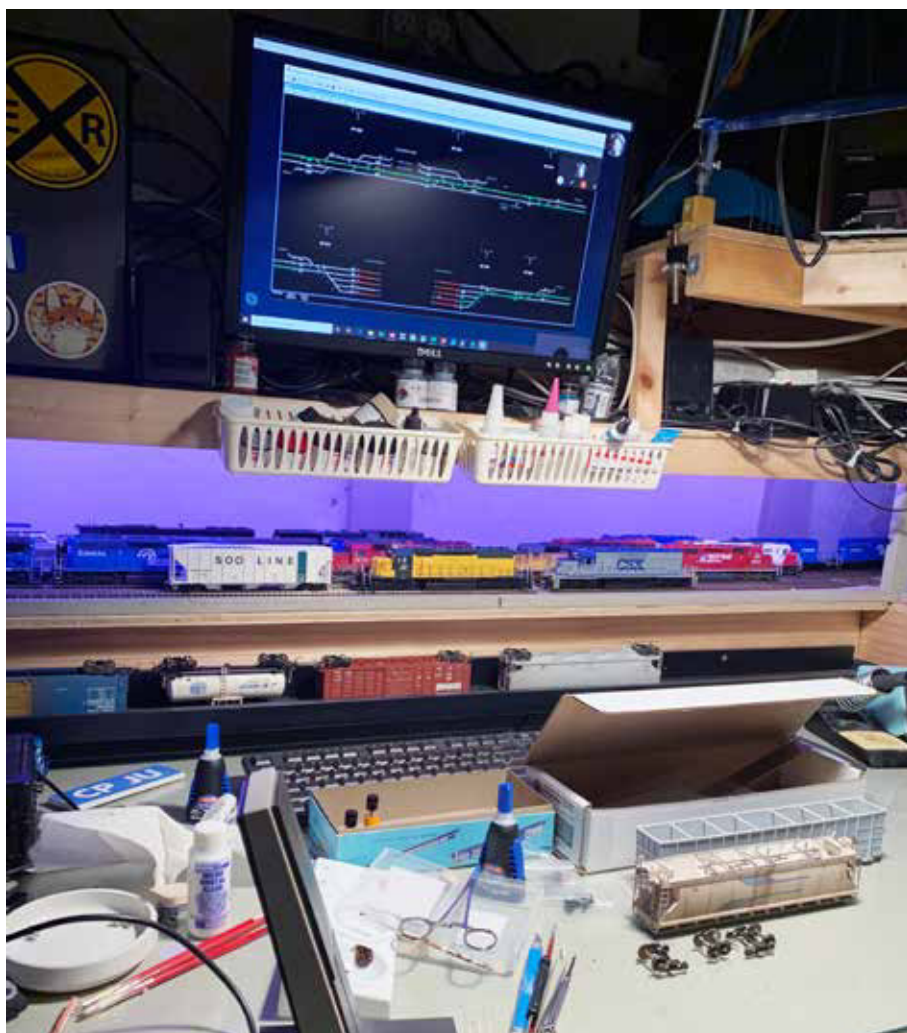
As a computer networking professional, Alex discussed an idea he had where we could try to use an FRS radio as a base station and Skype, the free internet phone software, as a repeater. His thought was to use audio "patch" cables to create a hard-wire path for audio signals between the PC and an FRS radio with the FRS radio set to Voice Activation (VOX).

The FRS radios we use have two ports: one for an external speaker and one for an external microphone. Likewise, most computers have a port for headphones and another for an external microphone.

Running a patch cable from the headphone jack on the PC to the microphone jack on the radio creates a way for incoming conversation from the dispatcher (on Skype) to be routed through the



Rich Wisneski, conducting on train COSE at a pre-COVID session, radios his remote engineer to give an approximate distance to a stop. Railroaders use an estimate of car lengths to go to communicate. For example, "10 cars to go" tells the engineer to proceed for about the length of 10 cars – about 500 feet – before the movement is clear and he can come to a stop.



Alex Lang set up a remote dispatching desk on his workbench near Pittsburgh, Pa., from which he can dispatch the Onondaga Cutoff. He custom-wired the former Conrail desk microphone to work with his PC. J. Alex Lang photo

computer speaker headphone jack to the FRS microphone (set on voice activation).

This sounds more complicated than it really is in practice, but the bottom line is that thanks to the VOX setting on the radio, the FRS radio "hears" the dispatcher "talking" through the computer speakers and then broadcasts that audio input to the radios in the layout room.

Likewise, in reverse, running a patch cable from the speaker port on the VOX base station to the microphone port on the PC running Skype creates a hardwire path by which any conversation on the radio in the layout space will activate the VOX, which will then broadcast to the microphone on the PC into Skype and be heard through the dispatcher's speakers. In effect, one FRS radio becomes the radio repeater on site.

After considerable experimentation and fine-tuning of the audio volume adjustments, Alex and I finally succeeded – I could talk on the radio in the OC layout room in New Jersey and Alex could hear me in Pittsburgh. When he replied from his home, my radio crackled to life. It was like talking on a regular radio conversation, except Alex was 325 miles away! The cable internet connection is stable and fast enough to support the data consistently.

This setup allows all radio users on the layout to hear the dispatcher's broadcasts live over the air, which is a remarkable experience. The limitations of the audio feeds going back and forth (they aren't perfect) actually lend authenticity to the experience as the audio sounds very much like listening to the scanner or railroad radio while trackside.

With regular operations in the layout room, we could have the railroad dispatched from anywhere in the world with an internet connection. Using this system, sessions were regularly dispatched from Pittsburgh and Florida.

From option to 'necessity'

Enter 2020. With one of the greatest challenges to the modern health systems and economy in our lifetime on our hands in the COVID-19 pandemic, we saw a dichotomy. We watched a big part of our hobby fill a gap for people doing their best to stay home and stay healthy. With time on their hands, many discovered or re-discovered modeling.

Operating sessions, though, were hard-hit. Health and economic challenges presented by the pandemic essentially shut down any sort of group model railroad operations all at once. One of



The black audio cable is inserted into the microphone jack and runs from the speaker jack on the FRS radio. The green cable is the computer speaker output. From the speakers, a patch cable is run to the microphone jack on the FRS radio.



The FRS radio units can be purchased with built-in jacks for patch cables for both speakers (SPK) and microphone change (MIC CHG). This Midland-brand FRS radio has a swing-away door to cover the jacks.

the fastest-growing parts of the hobby was suddenly on hold.

Operations – at a distance

As people began to realize that the pandemic was going to be dangerous for a while, regular operators began to discuss possibilities. Discussion with some of the regular crew on my Onondaga Cutoff seeded some ideas. We had been holding monthly operating sessions for years, and as the situation unfolded, it became clear that it would be many months before we could do so again. But we had figured out remote dispatching.

Rich Wisneski had an idea that instead of writing off operations, perhaps we could add a layer of sophistication and find a way to keep operating even while physically distanced. Rich suggested that we further harness the power of the internet and make some creative adaptations to allow operations by remote engineers. Further discussion with David Olesen and Ted Pamprin, also in New Jersey, pushed the concept forward.

Using existing infrastructure as a baseline, our first try at remote operations was more of a “tailgate” session: Rich and his son Andrew came over to run trains, but rather than running in the layout space, they set up a card table and chairs outside on the lawn.

The dispatcher was 30 miles away, but his screen was visible to anyone with the TeamViewer software and logon information. NCE radio throttles were no longer an option, as the NCE radio signal wasn’t strong enough outside the layout room. But because the Wi-Fi signal was strong, we had the option to depend solely on WiThrottle and EngineDriver.

Rich and Andrew accessed the layout Wi-Fi with their own devices and used their own FRS radios they brought with them, eliminating common-touch surfaces. By monitoring progress on the screen, they could use their phones to engineer trains around the railroad.

I stood in the layout room and watched mainline trains pass under the control of engineers who weren’t in the room. I acted as a ground man when uncoupling or conducting was needed, but they moved the trains while Jack dispatched from his home. Rich and Andrew used a layout room window to serve as a visual check on some parts of the layout and watched the dispatcher screen to see when they had routes lined. We had a bit of a learning curve, but it worked.

Networking

After that solid start, it was time to consider moving ahead. The major networking challenge for fully remote operators was how to use the WiThrottle/EngineDriver apps remotely. In the layout room, the app software is able to search your home network for the WiThrottle server and automatically connects. Over the internet in fully remote operations, the app software on the device needs to be told where to look, and some additional settings on your home network are needed to allow it in.

Alex used his experience with computer networking to teach us to build a new pathway to allow remote operations. First, you need to find the public Internet Protocol (IP) address of your home network. This allows external devices access once you locate the IP address and share it with your remote operator.

Do an internet search for “What is My IP” and you will find several websites that can let you know this info, and many search engines will display this info for you as a convenience. This address can change, so you may wish to do this shortly ahead of the operating session and then share it with your remote operators.

Digital security is important. It’s wise to invite only those you can trust to be remote operators. Still, note that simply providing your IP address to remote operators doesn’t compromise your privacy or security, just as providing your home mailing address doesn’t automatically let someone into your house.

To allow the remote operators to use their throttle app to connect to your WiThrottle server, you need one more step: You need to allow access to the WiThrottle server by configuring port forwarding in your home router. To configure port forwarding, you need to know the internal “private” IP address and the port that WiThrottle is using. You also need to configure a static, private IP for your layout PC so that the private IP address doesn’t change. If it does, it will break your port forwarding, disrupting operations.

Start up WiThrottle on your layout PC. The private IP and port number will be displayed there. (Part of the function of your network router is to allow you to share that public IP address with multiple devices. In order to do so, your home router assigns “private” IP addresses that are internal only to your network – these most often start with 192.168.)

Enter the private IP and port number from the WiThrottle display into your router’s Port Forwarding section. This

setting can be found with settings for DHCP, Clients, or Advanced Settings. Each home Wi-Fi router is different, so check your router settings and online manuals for how to establish a port forwarding connection through the firewall.

Once you give them this access, operators can remotely control locomotives on the layout so long as WiThrottle Server is running.

Full remote operation

Lessons from the tailgate operations were valuable. It would be important to supplement the dispatcher screen with some sort of visual cue for true remote engineers. We filled that need with yet another software package – video conferencing applications such as Zoom and Jitsi. These free programs allow a number of users to see each other in real-time.

If each operator uses a separate device for their end of the video call and another dedicated laptop or webcam in the layout space to serve as the “eyes” of the remote operators, each remote operator can see the view from the layout cameras showing critical portions of the layout. The in-room cameras are positioned so operators can see locations such as crossovers where clearance between trains and tracks is an issue.

In summary, each remote engineer uses TeamViewer to see the dispatcher screen giving him/her a view of the layout signals, views a video conference of critical locations via the cameras in the layout room, and uses a separate mobile device connected to WiThrottle/EngineDriver to run trains.

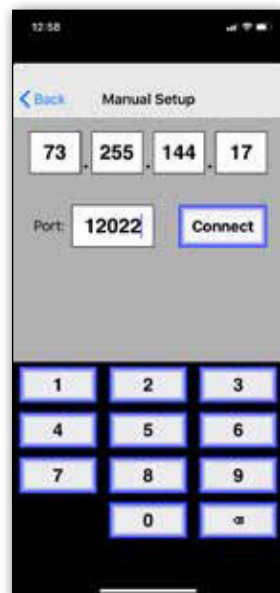
And, of course, the radio/Skype setup allows for communications between conductors in the layout room, engineers in their remote “cabs,” and the dispatcher. Quite a lot of technology, most of which wasn’t available 10 or even five years ago.

Throttle up: WiThrottle

Now we set up the manual target for the applications. Open the WiThrottle or EngineDriver app on your device. Look for a Settings icon followed by Configure, which in WiThrottle is found under SET SERVER MANUALLY. (If you’re running the usual WiThrottle server on your home network and testing this there, you’ll need to stop the regular server first, since the app would automatically connect to that by default.)



This is the WiThrottle screen on the iPhone that enables manual entry of the server information for remote operators. Press “Configure.”



This screen shows the manual configuration for remote operators – the public IP address and port number. The numbers will change for your setup.

On the next screen, type in the public IP address found in Step 1, and the port you found using the WiThrottle server on the PC. Then press CONNECT.

At this point, your throttle is operating as though you were standing right next to the layout or out in the backyard.

Running remote

Now, we’re ready to start. Your smartphone or tablet is talking to the host layout through JMRI and you have Team Viewer or similar open on another machine allowing you to see the dispatcher panel. Your radio communications work. Like the real railroad, it’s wise to have a man on the ground to keep an eye on your movements. Switching moves require a conductor or brakeman on the ground to make shoving moves, line turnouts, uncouple cars, and relay information to the engineer.

Someone in the layout room must communicate to you what your lead

locomotive number is, and where you are on the layout. You need to understand which of the track occupancy lights, appearing as red lines on the dispatcher’s board, corresponds to your train. As you increase the throttle for a train on mainline track, the locomotive will move, and that red line will extend to the adjacent block once the wheels of the engine cross the boundary.

This is where web cameras showing the layout or parts of the layout are handy. Block detection tells you which blocks are occupied, but not where the train is within the block. As a remote operator, this takes some learning and experience to get comfortable.

A new horizon

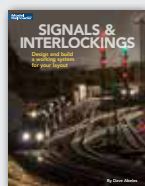
Several times during the 2020 quarantine, I was standing alone next to the Onondaga Cutoff main line. The radio crackled with discussion between the dispatcher and several trains. As I stood next to the double track, I watched a signal turn from “stop” to “clear,” the top head turning from red to green. A few moments passed and gradually I could hear the sound of an approaching train.

The locomotives crested the hill to the west, laboring to bring the freight up over the grade. Headlights reflected off the rails as the engines roared past. The train passed beneath the signal bridge, the signal changed to red in acknowledgment of the movement, and cars drifted by noisily, metal wheels rolling past, with a flashing end-of-train device marking the end of the train fading into the distance as it rounded the next curve.

These trains were run by engineers a few towns away in New Jersey, but also from Pittsburgh, Pa., and even from Orkney, Scotland, and Queensland, Australia, about 9,600 miles away.

This is a new type of railroad modeling and a new experience for anyone running trains. It’s a foundation for things to come, like in-cab cameras for remote engineers. Modeling railroading just got more possible! **MR**

Dave Abeles lives in northwestern New Jersey with his wife, Kristen, and three young children. Dave’s Conrail Onondaga Cutoff has been featured in several stories in MR and Model Railroad Planning, and his book on signaling will be published by Kalmbach Books later this year.

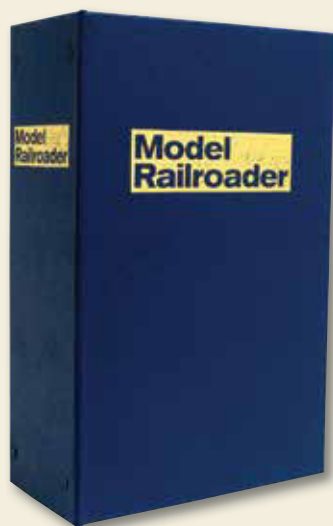


Dave Abeles’ book, *Guide to Signals & Interlockings*, reveals the secrets of operating signals. It’s available this spring at hobby shops and

KalmbachHobbyStore.com.

PROTECT your investment

Preserve your library of
Model Railroader magazines
with durable hardcover
binders.



Item No. 14001

\$13.95 Each

These durable binders
keep magazines organized,
handy, and in mint condition.
Each binder holds six to 12
issues—and you won't even
have to punch holes in your
prized magazines. An attractive
addition to any home library.

ORDER YOURS TODAY!

**Buy now from your
local hobby shop!**

Shop at

KalmbachHobbyStore.com/MRRBinder

BIG Sound IN A SMALL PACKAGE

Do you have model with a NEXT18
socket? If so our newest Tsunami2
decoder is perfect for you!

Introducing the **NEW Tsunami2
TSU-N18**. The small size of this board
makes it ideal for both N and small
HO models that come equipped with a
NEXT18 socket.



Tsunami2 TSU-N18

Installations can't get any easier. Simply
plug this decoder in and enjoy all of the
Tsunami2 features you know and love!

**Shop at soundtraxx.com or your
local retailer today!**

TRAINZ

Trainz wants your N and HO scale collection!
With over 45 years of experience, we make
it easy to sell your collection.

sellmytrains.com/mrr
(866) 316-0175



Looking for a great selection of new
and used trains in N & HO?
Visit trainz.com

LOCOLINC SERIES 200

Wireless Control: The Future is Now



Automatic device
discovery and
WiFi format make
the new Locolinc
200 Series the
most user friendly
interface on the
market. Nothing
else even comes
close.

- *WiFi format at 2.4 Ghz*
- *Automatic device discovery: Loco & Acc*
- *Superb NEW user interface 3" x 5" x 1"*
- *Track or battery voltage (12-24V d.c.)*
- *Multiple unit operation*
- *Easy implementation for new customers*
- *Easy conversion for existing customers*
- *Cost effective*
- *Renown LOCOLINC quality & reliability*

Keithco, Inc
locolinc.com
(503) 635-7604

DCC, DC, or both



Allan Gartner's "Frankentrain" is a joke steam locomotive that looks like a diesel. In 1928, Kitson-Still made a combination steam-diesel locomotive. Since you've probably never heard of it, you can guess it wasn't a success. But you can make a success of transitioning from DC to DCC following Allan's tips.

Unless you were born in this century, you may be facing a choice: Digital Command Control (DCC), direct current (DC), or both. Like many modelers thinking about DCC, you may be contemplating having both DC and DCC locomotives. Before I discuss doing both, is that something you really want to do?

If you're building a new layout with DC, you'll be spending money and time on block wiring that will complicate your control panels. This is time and money better spent on the future by going DCC. You can buy a DCC decoder for a locomotive for as little as \$16 – the cost of several block switches.

Of course, you may be considering both DCC and DC because of the cost and effort to convert all your existing locomotives to DCC. Before you worry too much about

the cost, take an inventory of your locomotive fleet.

What locomotives do you have? Do you have locomotives with open-frame motors? These are notoriously poor runners. Do you have locomotives with one side of the motor attached to the chassis? You have to isolate the motor from the metal frame to avoid burning up your DCC decoder.

Depending on the model, sometimes this can be a big and difficult project. Converting locomotives like these to DCC may require you to spend money on a new motor. This is money you could put toward a new and better-running locomotive that already has DCC – which you can buy for about \$125, even less on eBay. It may be best to leave these locomotives as DC.

Diesels with the motor mounted on the truck often have metal tabs for

transferring power from the wheels to the motor. The tabs may be very short, maybe 1/2" long. Of course, these are surrounded by plastic that would melt if you attempted to cut or solder to these short tabs. Such locomotives are almost impossible to convert.

The lesson here is to have someone experienced in installing decoders evaluate your fleet and give you some idea of how much work you have in store for yourself. As I did, you may decide to sell the locomotives that aren't worth converting or put them in a display case. If you want to see if I or someone else has worked on a locomotive that you have to get an idea of how easy it will be, see my website at wiringfordcc.com/write_ups.htm

You don't have to convert locomotives yourself. There are people who, for a reasonable fee, will install the decoder in your locomotive for you. Contact your local train store or train club for a name and number.

So now you're thinking you might have to buy some new locomotives. I have some good news for you! Newer locomotives not only often look better, they usually run better and come with high-efficiency, smooth-running can motors. Today, most of them come at least "DCC ready," meaning a decoder

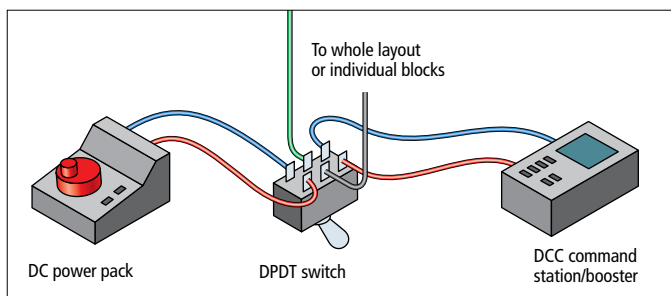
usually can be easily installed and that the motor is isolated from the frame.

It's usually as easy as opening the locomotive and installing the decoder into a socket. Pop it in. The ones that come DCC-equipped are reasonably priced – about the cost of a locomotive and a decoder if you bought them separately. On sale, you might get a deal you can't resist.

It gets better! Sound decoders are available that fit into a socket, too. Or you can buy a drop-in circuit board decoder that replaces the circuit board already in your diesel locomotive. Soldering isn't usually required, as they have slip-on connectors. These decoders are available with and without sound.

After you thin out your collection of locomotives that aren't worth converting, you still may feel you have a lot to convert. But do you really? You will no doubt convert your favorite locomotive first, followed by a few others you particularly like. Of course, these will be your first pick whenever you go to run a train. They look good, run smooth, have great sound, and stay on the track.

Isn't that what you do now? You'll find you're no longer in a hurry to convert a lot of locomotives or buy new ones. I've been down this road. You'll quickly find yourself no longer thinking about DC.



1 Simple circuit. You can use this circuit to switch your layout between DC or DCC. If you have a loop running DC and another running DCC, you can also use this circuit on a transition section for locomotives that can run either.



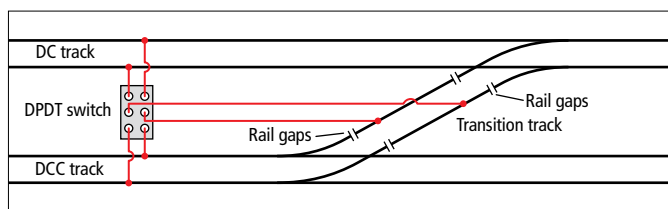
2 Interim steps. Model Rectifier Corp. offers the Tech 6, left, and Throttlepack 9950 for modelers who want to get better results from sound-equipped locomotives without making a big investment in DCC.

Some DCC decoders are dual-mode – they can be run on DC or DCC layouts. Most of the modern ones can switch automatically. This doesn't mean you can cross between one system and another on a layout. Damage could result.

If you have one of these locomotives, you can run DC at home and DCC at your club. However, if you have one of these on a DCC layout and it doesn't recognize the DCC signal, it may think it's on DC. It will take off like a rocket. So, many modelers who run DCC only will disable the DC mode – controlled in CV 29 – to prevent this from happening. See the decoder manual for instructions on how to do this.

If you still want to run some DC and DCC locomotives, there are several options for you. Some of you have small layouts where you will run either DC or DCC locomotives, but not both at the same time. That can be easily accomplished with a switch that switches between your DC power pack or DCC system.

You can use the simple circuit in **1**, opposite; just don't use a momentary center-off switch. An All Electronics (allelectronics.com) switch, part number STS-89,



3 Two loops. On a layout with two loops of track, one might be used for DC and the other for DCC. Locomotives with dual-mode decoders could run on either track. The transition track between the two will need a switch to energize it as shown in **1**. In this case, use a spring-loaded, center-off switch. Be sure to use insulated joiners or gap both rails at both ends of the transition section.

is a good choice. (All Electronics is an economical source of layout wire, too.)

Between running DC and DCC locomotives, you could store them on a roundhouse stall track you can switch off if not running that particular locomotive. Just put a switch in series with each stall track.

(Note, some people choose to switch off stall tracks even with DCC, both to reduce the current draw and cacophony of sound-equipped locomotives and to prevent an operator from accidentally driving a locomotive into the turntable pit.)

If you'll be running DC, you won't be able use

one of the great DCC features – DCC automatic reversing units. These devices automatically switch current flow so your locomotives keep moving in the same direction when traveling through a reversing loop, wye, or turntable. So, like most DC layouts of yesteryear, you'll

probably want to avoid trackwork that requires reversing.

There are incremental steps you can take when going from DC to DCC. The Model Rectifier Corp. Tech 6 (reviewed in the November 2011 *Model Railroader*) or Throttlepack 9950 (reviewed in the May 2020 MR) **2**, support

both DC and DCC, just not both on the same track at the same time. You may want to look into one of these. With the addition of a Tech 6 Walkaround Controller, you can operate up to six decoder-equipped locomotives using addresses 1 through 6.

Address 3 is the default address of almost all new locomotives and decoders. So usually you want to change it to something else, typically to the locomotive number on the side of the cab. If you're going to operate on a club DCC layout, you'll have to change from address 3 to avoid conflicts with other locomotives responding to the same number. The numbers can easily be changed back and forth by a knowledgeable club member.

If you have a layout with two loops, one running DC and the other DCC, and you want to connect the two, look at the simple circuit in **3**. The switch is part number STS-79 from All Electronics. It has screw terminals and is only a few dollars.

It's very important that you gap or use insulated joiners on both rails at each end of the transition. The double-pole double-throw (DPDT) switch is spring-loaded to be center-off. You'll need to hold it in the DC or DCC position. This will keep you from accidentally transitioning between the DC and DCC loops and forgetting to flip the switch.

If you're not yet ready to give away your DC power pack, I hope I have at least given you some things to think about. If you're ready to jump into DCC, see the review of systems in the July 2019 issue of *Model Railroader*. By the way, old DC power packs are handy for testing locomotives before installing a decoder, and they make great white elephant gifts at the club Christmas party. **MR**



LIKE MANY MODELERS THINKING ABOUT DCC, YOU MAY BE CONTEMPLATING BOTH DC AND DCC LOCOMOTIVES. – ALLAN



ScaleTrains.com HO scale EMD SD45

Whether you're a Rivet Counter or an Operator, ScaleTrains.com has an SD45 for you. These HO scale models are available now with every last detail installed, or just the highlights, and with dual-mode sound decoders, or as direct-current models with a provision to add your favorite Digital Command Control (DCC) decoder.

General Motors' Electro-Motive Division (EMD) was in the midst of a horsepower war in the mid-1960s, and its SD45 was the big gun. Boasting a turbocharged 20-cylinder 645 series diesel engine churning out 3,600hp and a new AC-DC electric transmission, these locomotives were the tops in power output when they were delivered in 1966.

Along with its V20 645-series diesel engine, the SD45 introduced the AR-10 alternator, replacing the generators used in earlier 567-series locomotives. (In EMD practice, the number in the engine series denotes the cubic inch displacement of one cylinder.)

Southern Pacific was the SD45's biggest customer, taking delivery of 356 of EMD's total production of 1,260. The Pennsylvania RR, Santa Fe, and Norfolk & Western railways each purchased

more than 100 of the type. The SD45 was replaced in 1972 with the SD45-2.

While the 20-cylinder diesel engine was known for crankshaft failures, many of these locomotives had long, productive lives. Wisconsin Central operated a fleet of more than 100 until its early 2000s acquisition by Canadian National. Montana Rail Link was also a fan of the type, operating second-hand units. Several are preserved, including a few that are still operable.

ScaleTrains.com offers the model in both the Rivet Counter high-detail line and its simplified Operator line. It's obvious which model you're looking at when you have them side by side.

Our Southern Pacific (SP) Rivet Counter sample has see-through radiator and dynamic brake fans with separate fan blade detail, separately applied wire grab irons and lift rings, windshield wipers, an air line to its roof-mounted bell, and a full suite of underframe piping and cables, among other details. The body shell represents a phase Ia2 version of the locomotive.

The Flexicoil trucks boast separate brake and sander lines as well as a speed recorder and cable under the fireman's

side of the cab. There are even axle ratio stencils on the trucks.

The pilots are detailed with m.u. hoses, coupler release levers, m.u. receptacles, and a plow on our SP sample.

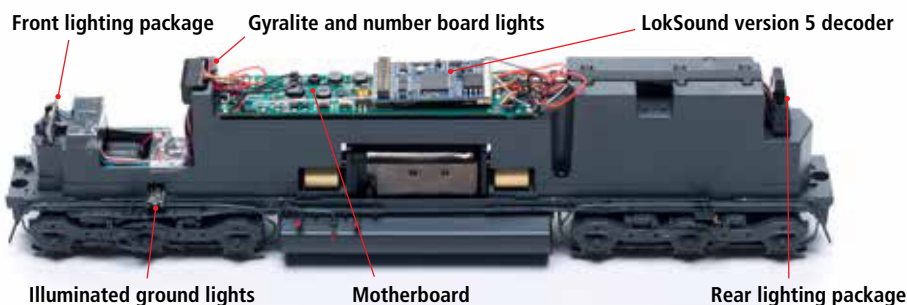
Our Santa Fe Operator sample has drilled holes for many of the wire details. ScaleTrains.com sells a detail set for its SD45 Operator models, no. SXT81254 (\$29.99). It includes many of the details already placed on the Rivet Counter models, including the wire grab irons and lift rings, pilot details, underframe details, and truck details.

Both models had scale-sized engineering plastic handrails, see-through steps on their pilots, diamond-tread walkways, positionable drop steps, and cab interiors. All dimensions for both models were within scale inches of drawings published in *Model Railroader Cyclopedic: Vol. 2, Diesel Locomotives* (Kalmbach Books, out of print).

Paint on both models was evenly applied, with sharp color separation. There are some gaps in the road name lettering as it passes over the door joints on the sides of the long hoods. A fine brush and appropriately colored paint would take care of this quickly.

The SP unit is festooned with multiple warning labels. The simpler Santa Fe decoration forgoes those details, but both locomotives have painted window frames and gaskets as appropriate.

Under the hood, the models were mechanically the same, but electronically different. The Rivet Counter model has an Electronic Solutions Ulm (ESU) LokSound version 5 dual-mode decoder. This offers a larger suite of sound and lighting effects. The Operator model is equipped with ESU's Essential Sound Unit decoder.



The ScaleTrains.com SD45 has a die-cast metal frame with a die-cast metal weight screwed on top. Cube-type speakers are concealed above the rear truck.

Both models offer ESU's Drive Hold, which allows you to change the sound of the diesel engine independent of the locomotive's speed. This is ideal for simulating a locomotive starting a heavy train at full throttle, or the sound of the engine at low speed while a train drifts downgrade.

I started testing these locomotives on my home switching layout. As the chart shows for the Rivet Counter model, it took a lot of voltage to wake up the LokSound decoder in direct-current testing. There was still sufficient range to operate the model satisfactorily, but it was all in the upper reaches of the power pack's throttle knob.

As would be expected, the LokSound-equipped model came into its own under DCC power. The speed range was much closer to the prototype with a top speed of 72 scale mph, just 1 mph above the speed a 62:15 axle ratio-equipped locomotive would achieve.

Turning on the engine sounds with Function (F) 8 also illuminates the ground lights, used by full-sized train crews to judge movement of the locomotive in the dark. Other lights include a twin-sealed-beam Gyalite mounted above the cab and a single red emergency light mounted on the nose above the headlight.

The emergency light was designed to illuminate when an emergency brake



Prototype-specific details such as the Southern Pacific light package and extended-vision windshield in front of the engineer are typical of Rivet Counter locomotives.

PERFORMANCE CHARTS

DRAWBAR PULL	3.6 ounces 50 HO freight cars	
SCALE SPEED (DC)		
VOLTS	SCALE MPH	
10.4	2.9	
11	11	
12	27	
13.3	43	
SCALE SPEED (DCC)		
SPEED STEP	SCALE MPH	
1	1.5	
7	11	
14	30	
21	58	
28	72	

application was made. On the Scale Trains.com model, the light comes on with a press of F14. Pressing F5 on our Southern Pacific sample allowed me to cycle through white and green classification lights and red markers.

The Operator line model uses a simpler dual-mode decoder called an Essential Sound Unit. While the sound and motor control are comparable to the LokSound decoder, the lighting functions are much simpler, offering a directional headlight.

Sounds on both units include a playable horn, bell sound, dynamic brake, coupler crash, and a manual compressor sound. Both decoders offer Drive Hold.

The Rivet Counter's LokSound decoder adds an independent brake (sound only unless you use a separately available LokProgrammer), radiator fan sound, headlight dimmer, spitter valve, isolation switch, brake set/release (sound only), sanding valve, and short air let off.

Both SD45s had no trouble negotiating the Atlas no. 4 switch ladders on my home layout. I also took the locomotives to the Milwaukee, Racine & Troy, *Model Railroader's* staff layout, to test their pulling power. On the curving 3.5 percent grade that climbs out of Bay Junction, the SD45s managed 15 cars. My workbench tests showed the engines should pull about 50 HO scale freight cars on straight and level track.

The SD45 was a landmark locomotive, and ScaleTrains.com's new models set landmarks of their own. Whether you want the definitive model of a specific SD45 at a specific time, or an accurate representation of these brutes to move freight on your model railroad, you should be able to find just what you need. — *Eric White, senior editor*

Facts & features

Price: Rivet Counter: \$339.99 (DCC, sound); \$229.99 (DC, no sound). Operator: \$194.99 (DCC, sound); \$124.99 (DC, no sound)

Manufacturer

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

Era: Atchison, Topeka & Santa Fe, 1970s-1980s; Southern Pacific, 1970s

Road names: Rivet Counter: Southern Pacific; Atchison, Topeka & Santa Fe (yellow bonnet); Burlington Northern; Chicago & North Western; Conrail; Norfolk & Western (Pelver blue, Bicentennial); Pennsylvania RR; and Seaboard Coast Line. Operator: Atchison, Topeka & Santa Fe (pinstripe, yellow bonnet); Burlington Northern; Chicago & North Western; Conrail; Penn Central; Pennsylvania RR; and Southern Pacific. Both also available undecorated.

Features

Operator:

- All-wheel drive and electrical pick-up
- Blackened metal wheelsets, in gauge
- Detail kit sold separately (SXT81180)
- Directional headlights
- Essential Sound Unit dual-mode sound decoder on DCC-equipped models
- Knuckle couplers, at correct height
- Lighted number boxes
- Minimum radius: 18"
- Motor with 5-pole skew-wound armature and balanced flywheels
- Positionable drop steps
- Weight: 1 pound, 3.3 ounces

Rivet Counter adds:

- Detailed cab interior
- Detailed pilot with m.u. hoses, uncoupling levers as appropriate
- ESU LokSound 5 dual-mode sound decoder on DCC-equipped models
- Operating LED-lit ground lights and classification or marker lights as appropriate
- Road-name-specific details
- Positionable cab windows
- Underbody frame rail with separate plumbing and traction motor cables
- Wire and etched metal details including lift rings and grab irons
- Weight: 1 pound, 3.4 ounces



Rapido Trains N scale General Electric Dash 8-40CM diesel locomotive

A **General Electric** (GE) Dash 8-40CM has joined the growing lineup of N scale diesel locomotives from Rapido Trains. The six-axle road unit features a plastic body; separate, factory-applied wire grab irons; and body-mounted couplers.

The prototype. In the late 1980s, Canadian National enlisted General Electric to produce a variant of the Dash 8-40C better suited for Canada's harsh winters. The result? The Dash 8-40CM.

The cowl-body design did its part. The engine compartment could be reached from the inside.

To address visibility to the rear of the locomotive, a pitfall of earlier cowl-body designs, the sides were tapered in toward the cab. This has been dubbed by railfans as a "Draper Taper" for the idea's originator, CN assistant chief of motive power William L. Draper. The taper was earlier used on Bombardier HR-616s and General Motors Diesel Division SD50Fs.

The Dash 8-40CMs rode on MLW-Dofasco trucks harvested from retired C630M diesels that were traded in. The road locomotives also featured CN's distinct four-window safety cab, tri-color class lights above the number boards, and a cab-mounted bell.

General Electric produced the Dash 8-40CM between February 1990 and March 1994. At the end of the production run, 84 units were built, all for Canadian railroads. Canadian National, which commissioned the design, rostered the most with 55. BC Rail had the second largest fleet with 26. Quebec, North Shore & Labrador, a 257-mile ore-hauling railroad that runs through northeastern Quebec and western Labrador, acquired three.

The model. The Rapido Trains Dash 8-40CM has a one-piece injection-molded plastic body, die-cast metal chassis, and modeler-installed cab

sunshades. The pilots have a separate, factory applied snow plow (front only), m.u. cables, train line hoses, and uncoupling levers. Other features on the shell include wire grab irons, factory-printed number boards, and separate sand filler hatches. The class lights above the number boards are printed.

The CN version correctly has battery boxes behind the cab on both sides, tall sand fillers, a single back-up light, and a K3L air horn. A set of louvers on the access door below the cab number on the conductor's side was omitted.

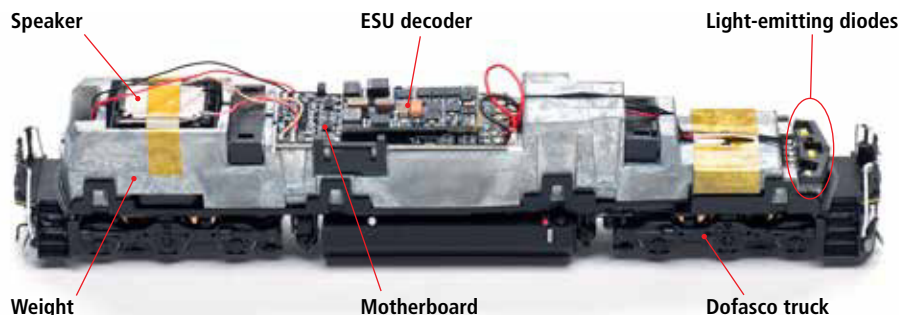
The QNS&L and BCOL units have dual back-up lights, short sand fillers, and a K5 air horn. In addition, the BCOL unit has rock lights.

Up on top, the CN locomotive has two wire grab irons; molded antennas, door handles, and hinges; and raised nubs on the walking surfaces.

Below, the model has a one-piece plastic fuel tank, separate pipes and air filters, molded traction motor cables, and air reservoirs mounted crosswise on the front and back of the fuel tank.

A look inside. To separate the shell from the chassis, I first unscrewed and removed the draft-gear boxes. Then I carefully separated the handrails attached to the shell from the stairwells.

A split metal weight fills the interior. The weight conceals the coreless motor and dual flywheels. Light-emitting diodes project light into tubes for the number boxes and various lights.



The Dash 8-40CM features a coreless motor with dual flywheels, which are concealed by the split-metal weight.



The ESU LokSound V5 decoder is attached to a motherboard on top of the weight. A downward-facing speaker is located above the rear truck. The sound file was recorded from a full-size Dash 8-40CM.

By the numbers. Our sample is decorated as CN no. 2429. The unit was repainted from its as-delivered scheme to the railroad's current scheme depicted on the model in the summer of 2012.

Most of the paint was smooth and evenly applied. The paint was a bit heavy on the battery boxes, and the color separation lines were a bit soft on those parts.

For the most part, lettering matched prototype images. I didn't see evidence of a builder's plate on the frame after the repaint. Also, the F should be to the left of the CAUTION NO FOOTBOARD stencil on the conductor's side.

The model's dimensions closely follow prototype drawings of a BC Rail unit published in



Wire grab irons, a cab-mounted bell, and m.u. cables are among the separate, factory-applied details.

PERFORMANCE CHARTS

DRAWBAR PULL	1.76 ounces 42 N scale freight cars
SCALE SPEED (DC)	
VOLTS	SCALE MPH
8.2	sounds on
9	2.7
10	14
11	35
12	57
SCALE SPEED (DCC)	
SPEED STEP	SCALE MPH
1	.7
7	11
14	29
21	54
28	75

the January/February 1994 issue of *Diesel Era* magazine.

To the test track. Rapido Trains recommends running its Dash 8-40CM for an hour in each direction to break it in. Additional gear lubrication shouldn't be necessary.

Our sample is equipped with a dual-mode ESU LokSound V5 sound decoder. I tested it first in direct current (DC). The sounds came on at 8.2V, which is typical of sound-equipped models in DC.

The model started moving at 2.7 scale mph at 9V. It achieved a top speed of 57 scale mph at 12V. The top speed for the full-size units was 65 mph.

I then tested the locomotive in Digital Command Control (DCC) with an NCE PowerCab. At step 1 the Dash 8-40CM crawled along at under 1 scale mph. The six-axle road unit topped out at 75 scale mph at step 28.

The locomotive is equipped with two traction tires (six extras are included), one each on the front and rear truck. The drawbar pull was 1.76 ounces, equivalent to 42 cars on straight and level track.

Facts & features

Price: Direct current with ESU Next18, \$149.95; with dual-mode ESU LokSound sound decoder, \$259.95.

Manufacturer

Rapido Trains
500 Alden Rd., Unit 21
Markham, ON L3R 5H5
rapidotrains.com

Era: February 1990 to present

Road names: Canadian National (website, stripes, North America, and no stripes schemes); British Columbia Ry. (post-2010, as-delivered, and CN website schemes); and Quebec, North Shore & Labrador. Two to six road numbers per scheme; also available undecorated (BCOL and CN versions)

Features

- Body-mounted couplers, at correct height
- Coreless motor with dual flywheels
- Correctly gauged metal wheels
- Detailed underbody
- Die-cast metal chassis
- Prototype-specific details
- Separate, factory-applied grab irons and handrails
- Weight: 4.6 ounces

I then took the Dash 8-40CM to our Canadian Canyons project layout [see the January 2019 *Model Railroader*. – Ed.] with 25 modern freight cars equipped with metal wheelsets. The locomotive easily pulled the train up the 1.9 percent grade in the helix.

The body-mounted couplers are installed at the correct height. The metal wheels are correctly gauged.

Happy wanderers. Don't think the Dash 8-40CMs stayed north of the border. After CN acquired Wisconsin Central, Illinois Central, and other lines, the Dash 8-40CMs became regular visitors to the United States. In 2013, a three-unit consist of BC Rail Dash 8-40CMs came through Waukesha, Wis., where MR's headquarters are located.

If you want to add some interest to your contemporary N scale diesel fleet, take a look at the Rapido Trains Dash 8-40CM. The cowl-body unit looks and sounds good and is a strong puller. – *Cody Grivno, group technical editor*

Jacksonville Terminal Co. N scale 53-foot well car

Jacksonville Terminal Co., a relatively new manufacturer that's been making a name for itself with a line of N scale intermodal containers, is now offering its first freight car, a modern, 100-ton, double-stack well car. The die-cast-metal N scale car features etched-metal end platforms, separately applied brake gear, and body-mounted knuckle couplers.

Prototype and model. Intermodal cars, and specifically the containers they carry, are to modern railroading as boxcars were in the decades before. Intermodal containers carry all sorts of freight, mostly manufactured goods; specialty containers have been developed to carry liquids and temperature-sensitive cargos. The advantage intermodal containers have over boxcars and other rail cars is the cargo doesn't need to be transloaded when going from ship to truck to rail.

Goods made on one side of the ocean can be packed up and sent directly to a destination on the other side without any intermediate handling, greatly reducing damage in shipment.

The prototype for JTC's car is a common one, seen all over the continent. Owner TTX (formerly known as Trailer Train) leases the cars to any railroad that needs them, so these would be appropriate for any modern model railroad.

Called the Super Stack by builder National Steel Car, the car has a 53-foot container well, designed to handle two 20-foot or one 40-, 48-, or 53-foot container in the lower position. Two more 20-foot containers can be carried on top of two of the same size, or a 40-, 48-, or 53-foot container on top of two 20-footers or a longer container. Though it's not an issue on our model railroads, NSC touts its Super Stack as having the

highest carrying capacity of all cars of its kind.

Our two review samples were numbered DTTX 680510 and 680725. Both were built by NSC between May and September 2006 as part of lot no. P5595/06. National Steel Car built 1,099 cars for TTX in that lot; JTC offers its model in five road numbers.

How it matches up. I found a photo online of DTTX no. 680510, one of the car numbers offered by JTC. The profile of the model, as well as the placement of detail parts and markings, matched the prototype. The printing on the N scale car was crisp and legible under magnification, even the smallest lettering above the jack pads and on the top lip of the container well.



MODEL YOUR BEST RAILCAR

Let the experts at *Model Railroader* show you how!



K Kalmbach
Media

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



Under magnification, I also found some slightly rough spots on the die-cast metal body, particularly the sills under the etched-metal side walkways and the molded-on air line directly beneath it. This unevenness was slight and shouldn't be noticeable at normal viewing distances. Weathering could conceal any irregularities in the car's appearance.

I matched the model's dimensions to those in the specifications for the car lot order. With one exception, all the dimensions I checked were within scale inches of the prototype. The exception was the overall width, which was just a

few inches too wide. This is unavoidable, as the interior dimensions have to fit those of N scale containers, and the walls of the car can be made only so thin.

The manufacturer recommends a minimum curve radius of 18", but noted that the cars performed reliably on curves of 15" radius. I tested the cars on our N scale Canadian Canyons layout, totting some 53-foot Kato containers, and the cars stayed on track through the 13" curves of the hidden helix and staging yard. They had some problems clearing one of our tunnel portals on a curve, but I think that's a problem with the tunnel, not these cars.

Welcome to the neighborhood. It's always good to see new hobby manufacturers getting into the business. Though JTC has been making intermodal containers for a while, getting into freight cars is a big step. If JTC's well car is indicative of what's to come from the company, we can expect good things from them in the future. – *Steven Otte, associate editor*

Facts & features

Price: \$44.95

Manufacturer

Jacksonville Terminal Co. LLC
9526 Argyle Forrest Blvd.
Suite B2, No. 406
Jacksonville, FL 32222
jtcmodeltrains.com

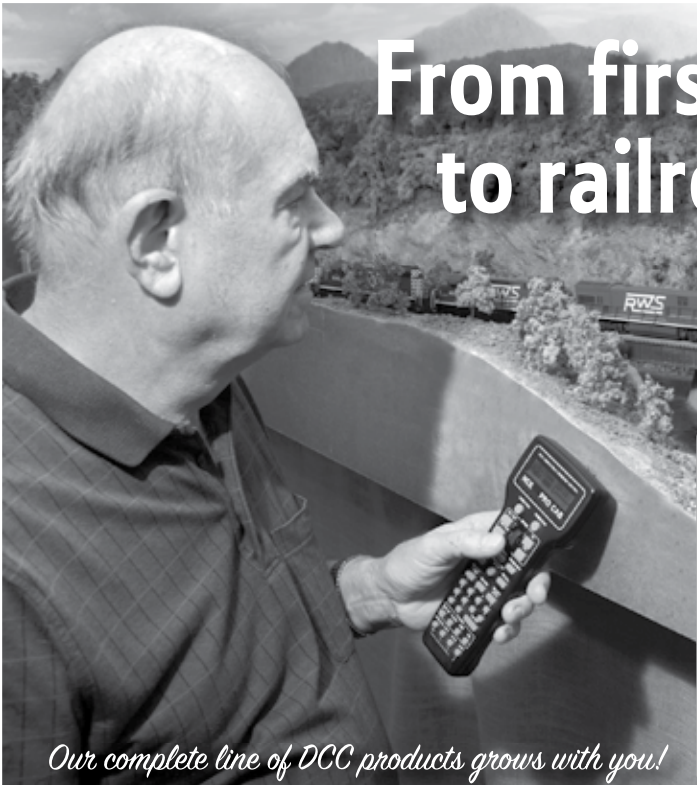
Era: May 2006 to present

Road names: Trailer Train (DTTX reporting marks, five road numbers)

Features

- Die-cast metal chassis
- Etched metal end platforms, steps, and railings
- Magne-Matic couplers, at correct height
- Micro-Trains 100-ton trucks, pin-mounted
- Molded plastic wheelsets, in gauge
- Recommended minimum radius: 18"
- Separately applied brake equipment
- Weight: .9 ounces (.425 ounces light according to NMRA RP-20.1)

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!



See your dealer or visit ncedcc.com

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

Train on Branch

It's a common perception that railroad operating rules are complicated, especially timetable-and-train-order (TTTO). The word "rules" connotes rigidity. And who wouldn't demand this of surgical procedures or aircraft flight manuals? But this doesn't necessarily mean inflexibility; like surgeries and flight manuals, the rules must anticipate a broad spectrum of "uh-oh's" that could threaten safety.

I monitor several railroad-ing online forums, one of them a platform shared by two National Model Railroad Association Special Interest Groups, the Ry-ops-industrial SIG list found on groups.io. This forum generates some interesting discussions because it enjoys a good mix of inquisitive prototype modelers and knowledgeable rail-roads and retirees.

One interesting thread began by asking how TTTO rules might handle operation on a stub-end branch where the only traffic is a single train that runs several times a week to serve a mine. No operator is on duty on the branch. How could the train obtain movement authority?

The scenario makes a good case for flexibility, not inflexi-

between Paine and Stroup, the latter a station where no operator is on duty. The trains use the same equipment. For example, after No. 403 arrives at Stroup, it returns to Paine as No. 404.

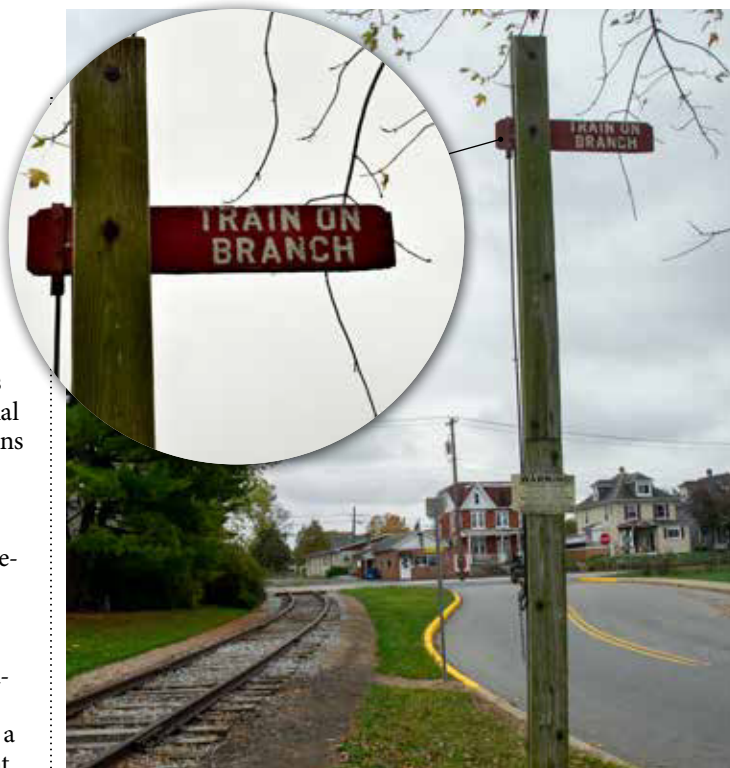
Perry's employee timetable follows the prototype's very faithfully. It has a special instruction that regular trains "must not leave their initial station without clearance cards form A." How does No. 404 do so? The same special instruction makes an exception for No. 404 to receive its clearance card at Weedville, the first open station after Stroup.

My own layout also has a pair of first-class trains that use the same equipment, Nos. 901 and 906. Here's the catch. No. 901 is a westward train, and east is the superior direction. No. 901 will never reach Unionville if it falls significantly behind schedule because it's required to clear No. 906's schedule; in effect, it's waiting for itself.

My employee timetable avoids this dilemma: "Eastward trains are superior to westward trains of the same class, except No. 901 is superior to No. 906." Perry's employee timetable has a

similar instruction, making No. 403 superior to No. 404.

Regular trains need not operate daily. A branch line that was a regular teenage haunt of mine saw a local that used a second-class schedule on Saturdays only. Our stub-end mine branch could schedule



A Train-On-Branch signal still stands on the Middletown & Hummelstown RR, a remainder of the line's operation as part of the Reading system. Andy Ottinger photo

trains on the branch and note its days of operation, such as "Tues. Thurs. Sat. only." If the mine doesn't need service one day, the dispatcher could issue a Form K train order such as NO 201 DUE TO LEAVE BRANCH JUNCTION FEB 28 AND NO 202 DUE TO LEAVE MINE FEB 28 ARE ANNULLED. Such an order is good form, even though it's addressed only to the Junction operator.

While I prefer a schedule, a Form G order could serve: ENG 1272 RUN EXTRA BRANCH JUNCTION TO MINE AND RETURN TO BRANCH JUNCTION. The pace of operation on most layouts keeps a dispatcher busy enough with train orders; besides, a simple schedule like this is a good way to break in members of the crew for whom the TTTO system is new.

My favorite approach, however, relies on a Train-on-Branch signal which the Reading System placed on

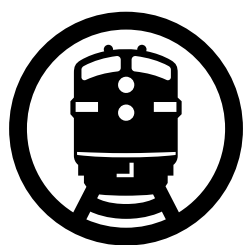
some of its lightly used branches. Dave Husman, a regular contributor to the list, sent me information from a 1943 Reading employee timetable. Its special instructions include Rule 105-A, stating that such signals supersede the use of Form G train orders for extra trains on branches it designates. It instructed crews to display the Train-on-Branch signal, its operating lever secured by a switch lock, to indicate the branch was occupied. Following trains, if any, could proceed only under flag protection.

Such a signal remains where it guarded one such Reading branch in Pennsylvania, now operated by the Middletown & Hummelstown RR. Norfolk Southern power moved a transformer load past the signal as recently as 2014, lending the relic a contemporary context. How easy to model, both in form and in prototype function! **MR**



THE ONLY TRAFFIC IS A SINGLE TRAIN. NO OPERATOR IS ON DUTY. HOW COULD THE TRAIN GET MOVEMENT AUTHORITY?
-JERRY

Perry Squier addresses a similar situation on his Pittsburg, Shawmut & Northern layout with schedules. A pair of regular first-class trains operate



trains.com

ALL ABOARD



All your favorite brands. All the content you love. All in one improved website.
Unlimited access across all brands for just \$6.99/mo. Join us online at:
trains.com/membership

**Model
Railroader**

**Model
Railroader** video
PLUS

**CLASSIC TOY
TRAINS**

Classic Trains
THE GOLDEN YEARS OF RAILROADS

**Garden
RAILWAYS**

Trains

THE BEST IN MODELING & RAILROADS • ALL IN ONE STOP!





Laurium, Mohawk & Brockway no. 2, a Baldwin 2-6-2T, maneuvers its work train through Phoenix Yard on its way to do some track work. Larry Burk of Holly, Mich., photographed the scene on his On30 layout, which was featured in our November issue. Engine no. 2 is a modified Bachmann Spectrum model.

Send us your photos

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

MORE ON THE WEB

• Larry Burke's photo of his On30 Laurium, Mohawk & Brockway is this month's wallpaper. Download it for free at Trains.com

Denver & Rio Grande Western K-27
no. 456 pulls into Poncha Junction,
Colo., with a short train of empty
hoppers bound for the mines. Trond
Atle Olsen and Jon Einar Vistad from
Rogaland, Norway, built the HO_n3
Free-mo module, which Trond photo-
graphed outdoors. The locomotive is a
Blackstone Models product.





The work crew's repairs to the yard track have unfortunately delayed the switcher's work into the early evening. Hopefully, everything will get done in time. Jerry Clement of Calgary staged and photographed this scene on his HO scale switching layout. Canadian Pacific locomotive no. 8117 is a General Motors Diesel SW1200RS from Rapido Trains.

Southern Pacific No. 99, the westbound *Coast Daylight*, glides through a bank of late-morning coastal fog in Guadalupe, Calif., in September 1954. Brian Moore of Plymouth, U.K., models steam-to-diesel transition-era Southern California in HO scale. His Quisling, Calif., modules were featured in the December 2018 and January 2020 issues of *Model Railroader*.

We're behind you all the way

Sceniking®

...nothing compares...

N - HO - S - O since 2005

IF YOU CAN DREAM IT- WE CAN BUILD IT

WWW.JSWOODCRAFTS.NET

Structures, Animation, Motorization, Accessories, Diecast, Custom Freight Cars, Custom Work and more.

All structures and accessories are 1/2" scale - 1/24", G-Scale compatible.

E-Mail: jswoodcrafts@sbcglobal.net

310-539-4246 P.C.T. All Week 10 to 5 P.M.

Rail Scale Models

Your Source For:

- Craftsman Kits
- Laser-Cut Detail Items
- Custom Scale Structures
- Laser-Cutting Services

Items in All Scales

www.Rail-Scale-Models.com

MODEL DECAL DEPOT

Trains, Planes, Automobiles, Boats, Rockets & Buildings

All Scales and more

PayPal or Cheques (for more information see website)

CUSTOM WATER SLIDE & VINYL DECALS

T. 604-279-9866
modeldecaldpot.ca F. 604-279-9856

Artisan Home Railroads

Building Quality since 1988

ALL PROJECT TYPES FROM BENCHWORK TO SCENERY

drbozanovs@gmail.com
artisanhomerailroads.com

ALLEGHENY SCALE MODELS

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
oscale@alleghenyscale.com

470 Schooley's Mtn. Rd.
Suite 8-117
Hackettstown, NJ 07840

CITY CLASSICS

Structures, details, signs and more!

www.cityclassics.biz

AVAILABLE FROM THE C&NW HISTORICAL SOCIETY

Look at www.cnwhs.org to see this exciting new product!

HO scale Kadee 50ft PS-1 boxcar
1 number available • \$48.00
Shipping is included to U.S. addresses.
Illinois residents add 9.5 percent sales tax.

C&NWHs-MR
PO Box 1068
North Riverside, IL 60546
www.cnwhs.org

NEW ROADS

Photo-Realistic Roads and Streets

Cut - Peel - Stick N-HO-O

WWW.TRAINJUNKIES.COM

AffordableModelRailroads.com

Professional Layout Design & Construction

We Complete Unfinished And In Progress Layouts, Design, Build, Fix And Complete Any Size or Scale!

MR @ AffordableModelRailroads.com
(800) 216-9202

FIFER HOBBY SUPPLY LLC

Your Local Internet N Scale Hobby Shop

WWW.FIFERHOBBY.COM

PNP TRAINS

MODEL TRAINS & ACCESSORIES

www.pnptrains.com

425-496-8844

Facebook: PNP Trains
eBay: Ombra

ALL ELECTRONICS CORPORATION

Electronic Parts and Supplies for Your Project.

www.allelectronics.com

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

Your 1st Choice For Tools & Electronics

From the Novice to the Expert We Have What You Need!

Use Code **MPA210** To Save **10% Off** Your Order

HobbyTools.com

CRAFTSMANSHIP 24" x 48" No Plastic IN HO & O

Accepting orders now for spring delivery.

GREENWAY PRODUCTS
139 Ramsey Road, Ligonier, PA 15658
greenwayproducts@comcast.net

www.greenwayproducts.com

Rail and Tie Craftsman Kits

Structures, Vehicles, Boats, & Details

New kits every month!

Stu's Tobacco Shop

www.interactionhobbies.com

LEADERS IN PREMIUM HANDCRAFTED MODEL SCENERY

CALL TODAY!
1 (801)-891-7255

Grand Central Scenery

WWW.GRANDCENTRALSCENERY.COM

When contacting advertisers, mention you saw their ad in **Model Railroader** magazine!

GET MORE

of what you love at **ModelRailroader.com!**

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

BACKDROPS
 HO, O, N Scales
WWW.TRAINJUNKIES.COM
 <-----Up to 100 Feet Long----->

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

FREIGHT CAR PARTS
 80 + PARTS (HO)
 300 + DECALS (ALL SCALES)
 200 + HO WINDOWS & DOORS
 Catalog call 336-329-9038
www.TICHYTRAINGROUP.com

RailroadBackdrops.com

 The Hobby's Best Backdrops Period. Beautiful Full Color
 Photographic Backdrops. All Designs Available In All Scales.
 Waterproof, Scratch Resistant, Tear Resistant, Washable!
Enter Code Mr100 For 20% Discount

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

GOODDEALSDCC
www.gooddealsdcc.com
HOME OF THE PROGRAMMER TEST TRACK SYSTEMS
 All Scales Available
 Custom Orders
 Clear Acrylic Inspection Cars
 224-703-0111
 Gary Cohn
 106 Center Street
 Fox River Grove, IL 60021
gary@gooddealsdcc.com

railroadbooks.biz
 has 1,900+ new titles,
 all at discount!
 Domestic shipping FREE over \$63
E-mail for free printable PDF list.
chuck@railroadbooks.biz
International Service.
Book Search.
ORDERS:
 U.S. (800) 554-7463
BUSINESS & INTERNATIONAL:
 +01 (812) 391-2664
SEND:
 \$2 for paper book list.
 PO Box 4, Bloomington, IN, 47402-0004 U.S.A.

Pursuing Excellence

THE TRAINMASTER, III
 Detailed Craftsmen Kits
www.TheTrainMaster.com

Model Scenery & Structure
 WINSTON SALEM, NC
 Call anytime 24/7
845-797-9533
custom layouts
 design build install
www.modelsceneryandstructure.com

Train Sets Only

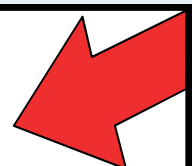
 • Competitive Pricing • N, HO, O, and G Scales
 • Quick Shipping • 1000's of Items In-Stock
 • Great Service
 Locos • Rolling Stock • Track • Power • Structures • Scenery
All at TrainSetsOnly.com!

Train Installations LLC
 MODEL RAILROADS FOR HOME OR BUSINESS
See Our New Online Store!
 (770) 597-0038 ~ Since 2001 ~
dave@traininstallations.com
www.traininstallations.com

Shockingly Accurate Industrial Models

 Open Freight Loads / Scenery
 Scales Z through G
MultiScaleDigital.com

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

Custom Layout Building

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

RIVER POINT

HO
 Trucks & Accessories
 Are Sold Separately
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 IMT or Walther's

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

After You've Looked at the Others...
Progressive Model Design
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

Ron's Books
 The largest railroad book seller with
 over **6,000** titles and over **475** DVDs!
 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

GREAT LOOKING ROCKS...
...in less than a million years!
RUBBER ROCKS
www.cripplebush.net

Classified Advertising

Schedule of Events Rate: \$45 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. 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. \$40.00 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, P.O. Box 1612 Waukesha, WI 53187-1612. Toll-free (888) 558-1544 Ext. 551 Fax: 1-262-796-0126. E-mail: classads@kalmbach.com

All ads must be prepaid and pertain to the subject of model railroading.

Schedule of Events

FL, SARASOTA/BRADENTON: 43rd RealRail Train Show. February 27-28, 2021. Saturday 10:00am-4:00pm and Sunday 10:00am-3:00pm. Bradenton Area Convention Center, 1 Haben Blvd. Palmetto, FL. Door prizes, interactive Lionel layout, Florida LEGO user group layout, kids' HO layout, 150 vendors. Adult admission \$8, Children under 13 free. Contact David Fontaine for more information: 941-685-2221 or david_f_34205@yahoo.com

GA, CARTERSVILLE: The Piedmont Division Model Train Show. Clarence Brown Conference Center, 5450 Hwy 20, Cartersville, GA. March 13th 10-5 & March 14th 10-4. Admission: \$9 for adults, kids 9 and under are FREE. NMRA 2-Day Event, Free Parking, 150 vendor tables, 6 operating layouts, White Elephant, Raffle Layout! Information: www.piedmont-div.org or leave a message at 404-550-4816

GA, SAVANNAH: Coastal Rail Buffs 32nd Annual Model Railroad and Train Show, Savannah Christian Preparatory School, 1599 Chatham Parkway, Zip: 31408. March 6-7, 2021, Saturday 10:00am-5:00pm, Sunday 10:00am-4:00pm. Adults 2-day admission \$7.00; Students/Seniors \$5.00. Active Duty Military/under 12 FREE. Dealer tables, operating layouts in O, HO, N. See www.coastalrailbuffs.org

IA, MONTICELLO: UPDATE-cancelled. Monticello Railroad Club Train Show and Swap Meet. Berndes Center, Jones County Fairgrounds, 766 N. Maple St., Monticello, IA. Sunday, January 31, 2021, 9:00am-3:30pm. Admission \$5.00, children under 12 free w/adult. For show updates contact, Denny Beasley, 319-270-1171 or email: circlebarb607@aol.com. 2022 show will be: January 30, 2022.

NC, ASHEVILLE: Asheville Train Show. Western North Carolina Agricultural Center. February 26-27, 2021. Friday noon-7:00pm and Saturday 9:00am-5:00pm. Admission \$6.00, under 10 free. All scales, all gauges, collectibles, artifacts, operating layouts, hundreds of vendor tables. More: www.Asheville-Trainshow.com

WI, MADISON: Mad City Model Railroad Show. After 53 consecutive years the show, scheduled for February 20 & 21, has been cancelled due to the Covid-19 pandemic. Planning is underway for the show to resume in 2022. nmra-scwd.org

CLOSING DATES:

March 2021 closes Dec. 14, April closes

Jan. 19, May closes Feb. 23, June closes

Mar. 23, July closes April 19, August

closes May 21, Sept. closes June 21,

October closes July 26.

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

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 403-585-2772. E-mail: modeltrains@shaw.ca

For Sale-HO Scale

HO TRAINS FOR SALE. Email: btrogus@gmail.com, or SSAE for lists. Barry Trogu, 364 Jamaica Blvd, Toms River, NJ 08757.

PREOWNEDTRAINS.COM For preowned and used model trains. Large selection, all scales. World wide shipping.

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: collections@brasstrains.com

BRASS PASSENGER CARS; Craftsman's kits; LIRR brass and plastic. Challenger Broadway Limited; Coach Yard PRR. Please call Bob at 212-874-6569 or e-mail grandt7@yahoo.com

CASH PAID FOR HO AND N SCALE TRAINS. No collection is too big or too small. 414-377-1255

CANADIAN TRAIN COLLECTIONS AND ESTATES: Buying entire collections anywhere in Canada or the USA. Brass, plastic, engines, cars, buildings, memorabilia - everything! Call Don 403-585-2772. E-mail: modeltrains@shaw.ca

PROTO 2000 DIESELS: Baltimore & Ohio, all with DCC & Sound. H-10-44 switcher, H-12-44 switcher, FA2 & FB2 printed black & blue. Call Wayne, 410-662-2711

TOP DOLLAR FOR HO TRAIN COLLECTIONS, large or small. Also brass. Call Tom 630-443-9137.

Wanted-Large Scale

BUYING G SCALE, and Large Scale Train collection. 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.

Wanted - Miscellaneous

ALL SLOT CARS WANTED. Any kind, any condition. Top dollar paid. PAUL at 248-760-6960. E-mail: slotcarguy@slotcarguy.com

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

LOOKING TO ACQUIRE model train collections, all scales, plastic to brass. No collection too big or too small, will travel. Please call or text Tim @ 817-991-5420 or email: karrtrains@aol.com. Located in the Dallas/Fort Worth area.

MODEL AUTOMOBILE AND TRUCK KITS WANTED- unbuilt or built, any size collection. Fred Sterns, 48 Standish, Buffalo, NY 14216. 716-838-6797. email: fsterns@aol.com

Custom Painting & Building

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 & LAYOUT DESIGN. Specializing in fine scale and prototype based projects. The Shelf Layouts Company, Inc. www.shelflayouts.com 301-404-8164

KIT BUILDING-SCRATCH BUILDING: Engines, structures, rolling stock, quality work. Reasonable. 585-319-5530 or email: valhrow4@aol.com

PROFESSIONAL PAINTER NEEDED. HO scale brass model collection needs custom painting and decaling to factory painted appearance. E-mail: wckiii@verizon.net

All listed events were confirmed as active at the time of press. Please contact event sponsor for updated status of the event.

Need more
Model Railroader?



Model Railroader Channel

Check out
Model Railroader Channel
on YouTube!

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. 551, email: classads@kalmbach.com.

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 (85323)
DCC Systems, Decoders, Layout Supplies Professional Installations G to Z scales Mon - Fri 8:00-5:00, Sat 8:00-Noon Online Store: LitchfieldStation.com E-mail: Sales@LitchfieldStation.com
LITCHFIELD STATION
1412 N. Central Ave., Ste. D 623-298-7355

ARIZONA • Phoenix
Narrow gauge almost exclusively. On3 - S3 - 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

ARKANSAS • Jacksonville
Headquarters for scale hobbies. Models; N-HO-O trains; tools; paint, etc. Discounts & special orders. Open 10-6, closed Sundays and Wednesdays
RAIL & SPRUE HOBBIES
1200 John Harden Dr. 501-982-6836

CALIFORNIA • Atascadero
All scales G to Z. Special orders welcome. Midway LA & SF. US 101-US 41, easy access. Open Tue - Sat: 10-5, Sun - Mon: By Appointment. E-mail Anita at: anita@ccrtrains.com Web site: www.centralcoasttrains.com
CENTRAL COAST TRAINS
7600 El Camino Real #3 805-466-1391

CALIFORNIA • Burbank
All scales G through N, collectibles old & new. Authorized LGB, Lionel, MTH & Märklin dealer. One of the most complete train stores in So. Calif. UPS worldwide shipper. Visit our website at www.trainshack.com
THE TRAIN SHACK
1030 N. Hollywood Way 800-572-9929

CALIFORNIA • Concord
Largest selection in the East Bay. 93 foot HO layout. Buy - sell - trade - consign - repairs - detail parts in all scales. Lionel. Discount prices & friendly service. Website: www.just-trains.com
JUST TRAINS
5650 Imhoff Dr. 925-685-6566

CALIFORNIA • Costa Mesa
Lionel, AF, LGB, HO, N, & Z Gauge. New, used, & collectibles. Buy, sell, trade & repair. Tue - Fri 12-7, Sat 9-5, Sun 11-3.
THE TRAIN CROSSING
1113 Baker Street, Ste. F 714-549-1596

CALIFORNIA • Hemet
We carry Lionel, MTH, HO, N, Atlas, Walther's, Ross switches, Gargraves & Peco. 45' long in-store layout. Open 7 days. www.dynamic-hobbies.net
DYNAMIC HOBBIES
811 East Florida Avenue 951-925-9331

CALIFORNIA • Hollister
Model planes, car ships & figures. Model train scales: Z, N, HO, O & G. Paints, tools, R/C & parts, incl. service. Craft & educational kits, supplies, products. ESU Lok Sound Dealer - clinics available. Tue - Sat 11-6; Sun 12-4
B.C.T. HOBBY & CRAFTS
201-C McCray St. 831-635-0537

CALIFORNIA • Pasadena
Model rail specialists since 1951. LGB, Lionel, O, S, On3, HO, HO3, N, Z. Complete stock of brass imports, new & used. Books, tools, structures, detail parts. Open 7 days. www.thewhistletop.com
THE ORIGINAL WHISTLE STOP INC
2490 E. Colorado Blvd. 626-796-7791

CALIFORNIA • Roseville (Sacramento)
Exclusively model trains since 1989. Athearn, Kato, MDC, Lionel, Atlas, LGB, Märklin, Brass Imports, books, detail parts. Everyday low prices. Open 7 days. www.rhobbies.com
RAILROAD HOBBIES
119 Vernon St. 916-782-6067

CALIFORNIA • San Diego (La Mesa)
Exclusively trains. Craft kits, detail parts, scratch supplies, books. Ride the trolley to Reed's. Open Mon through Sat 10-6; Sun 12-4 reeds@abac.com www.reeds-hobbies.com
REED'S HOBBY SHOP
8039 La Mesa Blvd 619-464-1672

CALIFORNIA • Santa Clara
100% trains. Discount prices. Super selection Monday 9:30am-2:30pm Tuesday - Saturday 9:30am-6:00pm Closed Sunday. Dennis Cole E-mail: dco14449@att.net
THE TRAIN SHOP, LLC
1829 Pruneridge Ave. 95050 408-296-1050

CALIFORNIA • Westminster (Orange Co.)
World Famous Model/Toy Trains Only 7,000 sq. ft. Super Center www.arniestrains.com
ARNIE'S MODEL TRAINS
6452 Industry Way 714-893-1015

CALIFORNIA • Yuba City
A full service model train store. Large inventory, HO, N, O & O27 Tinplate. Books, videos, collector & gift items. Repair service. We buy old toy trains. www.westerndepot.com
THE WESTERN DEPOT
1650 Sierra Ave. #203 530-673-6776

CONNECTICUT • Cos Cob
HO, N, Lionel. Lionel authorized dealer. Plastic, wood kits, rockets, tools, structural & diorama supplies. Special orders welcome. www.annshobbycenter.com
ANN'S HOBBY CENTER
405 E. Putnam Avenue 203-869-0969

CONNECTICUT • Winsted
A hobby shop for modelers by modelers. From hard to find to latest & greatest. Free classes & clinics / multi scales. Large store of quality products @ fair prices. Friendly service. www.whitingmills.com
RR MODEL & HOBBY SUPPLY
100 Whiting Street 860-379-3383

DELAWARE • Ocean View
No sales tax at the Delaware seashore. Lionel new & used...also Atlas, Bachmann, MTH. We buy used trains. Auth. Lionel repairs. Large inventory of used HO trains. Open Tues - Sat 11-4:30. Closed Sun & Mon
SEASIDE HOBBIES
15 Daisy Ave. 302-539-1601

FLORIDA • Cape Canaveral
Lionel, American Flyer, MTH on the internet. www.traincity.com www.choochooauctions.com
TRAIN CITY, INC. - CHARLES SIEGEL
387 Imperial Blvd., Ste. 2 321-799-4005

FLORIDA • Melbourne
The Space Coast's Model Train Shop. Z thru G scales. N scale our specialty! Digitrax, Kato, Lionel & Walther's Dealer. Atlas, IM, BWW, Piko, LGB & Rokuhan. Mon-Sat 10am-5pm Email: trftrains@cfi.rr.com
TRF TRAINS & MNT HOBBIES
2715 N. Harbor City Blvd., #10/11 321-241-4997

FLORIDA • Miami
Shop "Warehouse Style" for N to G. MTH, Lionel, Kato, LGB, Broadway Ltd., Atlas, Walther's at discount prices. Open Mon-Sat 10am-5pm, Open Sunday Nov-Jan 10am-1pm. Email us at rrtrains@aol.com
READY TO ROLL
831 NW 143rd Street 305-688-8868

FLORIDA • Ocala
HO, N trains & accessories Visa, MC, AX, Discover Open Mon - Sat 10-5:30 Sat 9-4 Call for Sunday hours.
ROB'S HOBBY WORLD
8585 SW Hwy. 200 352-854-2799

FLORIDA • Pensacola
Competitive prices, friendly service. All makes & models, trains & accessories. Tues-Sat, 10:00am-5:00pm. www.trainssbyjohnson.com Old Palafax St. at 10 Mile Rd.
TRAINS BY JOHNSON
10412 N. Palafax Hwy. 850-478-8584

FLORIDA • Pinellas Park (Tampa Bay)
Same Great Store, New Location! Huge inventory! Running Layouts! Your one-stop shop for trains, toys & other modeling needs. Daily 10-5, Sat 10-5, Sunday-seasonal. www.hrtrains.com
HR TRAINS & TOYS
7900 49th St. N 727-526-4682

FLORIDA • Port Orange (Daytona Beach)
Your Southern Connection for Quality Products! Featuring O, HO, N, Woodland Scenics, MTH MegaStation & National Service Center. Breyer Horses. Mon - Fri 9:30-5; Sat 9:30-4. www.roundhousesouth.com
ROUNDHOUSE SOUTH
4611 S. Ridgewood Ave. 386-304-7003

FLORIDA • Tampa Bay - Pinellas Park
2600 sq. ft. Showroom. Lionel & MTH Dealer NEW, USED, BUY/SELL All Gauges Z thru G Over 6,000 Parts. Repair Services. Trains, Track, Sets, Scenic Supplies. Tues - Sat 10-6
ZITNIK TRAINS
5193 73rd Ave. N. 727-201-9688

GEORGIA • Atlanta (Lilburn)
HO, Atlas, Bachmann, MTH Complete scenery supplies. Operating HO layout and 400 sq. ft. layout. Huge selection in a 11,000 sq. ft. store. www.legacystation.com 800-964-8724
LEGACY STATION TRAINS
4153 Lawrenceville Hwy., #12 770-339-7780

ILLINOIS • Des Plaines
N, HO, S, O, G Std. & Narrow gauge too. Lots of scratchbuilding supplies and other neat stuff. Brass, books & DVDs. Close to O'Hare. Open seven days a week! Web Store: www.desplaineshobbies.com
DES PLAINES HOBBIES
1524 Lee St. (Mannheim Rd.) 847-297-2118

ILLINOIS • Downers Grove
HO and N Scale Model Trains and Accessories Two Blocks South of Metra Station at Maple Ave. www.timberlinetrainshop.com
TIMBERLINE TRAIN SHOP, LTD.
5228 Main St. 630-324-6136

ILLINOIS • Elgin
HO & N Scale Scratch building supplies, paints, tools and much more. We special order. Digitrax dealer. www.bgtrainworld.com
B & G TRAIN WORLD
829 Walnut Ave. 847-888-2646

ILLINOIS • Geneseo
Scale Trains, Models & Hobby Supplies Specializing in Midwest Roads Visit our website at GRHobbies.com or call for directions and hours.
GREEN RIVER HOBBIES
119 W. Exchange St. 309-944-2620

ILLINOIS • Marion
Full-Line Hobby Shop. HO & N scale locomotives, scenery, plastic models, R/C, tools, paints, and more. Open Tue - Fri 10:30-6:30pm, Sat 10am-4pm Fax: 618-993-9177
CHUCK'S DEPOT
1913 W. Rendelman St. 618-993-9179

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 order, discount prices. Display layouts / clinics / assistance. Call for hours.
CASTLE TRAINS & TREASURES
4782 Old Jacksonville Rd. 217-793-0407

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 www.hobbyhaven.com
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.fredstrainshop.com
FRED'S TRAIN SHOP
8909 Santa Fe Dr. 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, Thur, Fri 10-5, Wed, 10-7 Sat, 9-4 (Call ahead Mon) www.maine-modelworks.com
MAINE MODELWORKS
374 US Route One, Unit 2 207-781-8300

MARYLAND • Annapolis
If we don't have it, we'll get it! LGB, Woodland Scenics, Walther's Dealer, Piko, Lionel, Bachmann, Spectrum. Mon - Sat 10-6. Full line Kalmbach! www.shoptarhobby.com
STAR HOBBY
1564 Whitehall Rd. 410-349-4290/4291

MASSACHUSETTS • Ashburnham
Specializing in New England road names, HO/N Scale, Micro-Trains, Walther's, Horizon. Special orders discounted. Thurs-Fri Sat 10am-6pm service@halfpricehobby.com
SHEPAUG RAILROAD COMPANY
23 Westminster St. 978-537-2277

MICHIGAN • Flint
G (LGB & 1:20.3), O (Lionel & MTH), On30, HO, N, & Z. Locos, 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-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, Sun 12-5
RIDER'S HOBBY SHOP
2055 28th Street SE 616-247-9933

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

MONTANA • Billings
Model railroading headquarters for the Northern Rockies. HO, HO3 & N scale. Kits, parts, tools, books. Tues-Fri 10-5:30; Sat 10-3. Closed Sun & Mon. trains28@jimsjunction.com
JIM'S JUNCTION
811-B 16th St. West 406-259-5354

NEBRASKA • Deshler
One of the largest HO/N scale inventories. Come check us out! All major brands plus books, videos, tools & scenery. Mon-Fri 9-5
www.springcreekmodeltrains.com
SPRING CREEK MODEL TRAINS, LLC
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 1936. www.houseoftrains.com
HOUSE OF TRAINS
8106 Maple St. 402-934-RAIL (7245)

NEVADA • Las Vegas
Big selection of HO, N and Lionel O Gauge trains. Only 7 miles west of the Las Vegas Strip. www.westsidetrainslv.com
WESTSIDE TRAINS
2960 S. Durango #117 702-254-9475

NEW JERSEY • Bellmawr
A complete Train Store, Repairs & Decoders Installed, N, HO, S, O, DCC Specialists Authorized Dealer. Digitrax ESU Loksound, NCE Soundtraxx, TCS. www.yankedhobbler.com
YANKED HOBBLER.COM
101 W KINGS HWY, 08031 856-312-8084

NEW JERSEY • Kenil
Full service hobbies, a full line of HO, N, 3-Rail, model cars, boats, planes, dollhouses, scratchbuilding supplies, plus details-details-details!
KENVIL HOBBIES
590 Rt. 46 973-584-1188

NEW JERSEY • Mountain Lakes
Direct dealer for Lionel and MTH. The largest train store in Northern NJ since 1974! 4 showrooms plus Operating Layout. WE BUY OLD TRAINS -Lionel Service Station #556 www.TRAIN-STATION.COM
THE TRAIN STATION
12 Romaine Road 973-263-1979

NEW JERSEY • Piscataway
Serving hobbyists since 1933. Large selection of HO, N, & O scale Railroad books & repair service www.themodellrailroadshop.com
THE MODEL RAILROAD SHOP, INC.
290 Vail Ave. 732-968-5696

NEW JERSEY • Westmont
Athearn, Atlas, Bowser, Walther's. Structures, books. Exclusively train since 1955. HO & N.
SATTLER'S HOBBY SHOP
14 Haddon Ave. 856-854-7136

NEW YORK • Wellsville
HO, N & O Accurail, Bowser, Atlas, Walther's, Williams & Kadee, Scenery & modeling supplies. Plasturix, magazines & building kits. Old local lines like WAG, Erie & EL. 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 • 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
LITTLE CHOO CHOO SHOP, INC.
500 S. Salisbury Av. 704-637-8717/800-334-2466

OHIO • Alliance
HO & N scale trains. Athearn, Walther's, & Kato's Accessories. Scratchbuilding supplies. Digitrax, TCS, & Soundtraxx dealer. Tue, Thu, Fri: 12-8pm; Sat: 10-3pm. www.robstrains.com
ROB'S TRAINS
333 E. Main St. 330-823-7222

OHIO • Columbus
Exclusively trains.
LGB, Lionel, O, HO, N scales.
Books, Thomas, videos.
Mon - Thur 10-6, Fri 10-8, Sat 10-6, Sun 12-5
www.trainstationohio.com
THE TRAIN STATION
4430 Indianola Ave. 614-262-9056

OREGON • Beaverton
Complete full line hobby shop.
Z, N, HO, O, Lionel, and LGB.
Open Mon - Fri 10-6, Sat 10-5, Sun 12-5.

TAMMIES HOBBIES
12024 SW Canyon Rd. 503-644-4535

OREGON • Portland
HO, N, Z, Lionel, DCC, brass
Reservation discounts, new, used,
Consignments, 16 minutes from Airport
www.hobbysmith.com

THE HOBBY SMITH
1809 NE Cesar Chavez Blvd. 503-284-1912

OREGON • Portland
Your complete model railroad store.
Gauges Z through G.
Mon-Sat 10am-4pm, Closed Sunday
www.wsor.com

WHISTLE STOP TRAINS
11724 SE Division 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.mainlinetohobby.com

MAINLINE HOBBY SUPPLY
15066 Buchanan Trail E. 717-794-2860

PENNSYLVANIA • Broomall
Lionel, American Flyer, LGB, Atlas & MTH
HO, N, ON30, Standard, O & S gauges
bought, sold & traded. Auth. service station.
www.nstrains.com

NICHOLAS SMITH TRAINS
2343 West Chester Pike 610-353-8585

PENNSYLVANIA • Hatboro
Lionel, American Flyer, LGB, MTH, Marklin,
Bachmann, Williams. HO, N & Z. We buy,
sell & repair. Mon-Fri 12-8; Sat 10-5
www.joestrainstation.com

JOE'S TRAIN STATION
283 E. County Line Rd. 215-322-5182

PENNSYLVANIA • Jeannette
Trains exclusively. Lionel, MTH, HO & N. Supplies
and accessories at discount prices.
Open daily 9:30-5, Fri 9:30-7, Sat 9-4.
Closed Tues & Sun. Expanded hours Nov and Dec.
www.needztrains.com

NIEDZALKOSKI'S TRAIN SHOP
214 South 4th Street 724-523-8035

PENNSYLVANIA • Montoursville
Mon - Fri 9-5:30, Sat 9-4.
Extended weekday & Sun hours in Nov. & Dec.
E-mail: englishmodel@gmail.com
www.englishmodelrailroad.com

ENGLISH'S MODEL RAILROAD SUPPLY
201 Streibigh Lane 570-368-2516

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. www.etrainshop.com

STRASBURG TRAIN SHOP
226 Gap Road 717-687-0464

RHODE ISLAND • Warwick
HO trains & acces., detail parts, plastic &
craftsperson kits. Hobby supplies, tools.
Tues - Fri noon-6pm, Sat 10am-5pm
1/2 mile west 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! 140,000+ items in all scales available
online 24/7 at: www.BlueRidgeHobbies.com

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 803-791-3958

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

TEXAS • Athens
Specializing in HO, HO-N3 & Brass. Blackstone
Isunani • InterMountain • Decoder installs
Kadee • Digitrax Dealer • Walther's • MTH
-----WE BUY HO-N3-----
jack@harrishobbies.com www.harrishobbies.com

HARRIS HOBBIES
9323 County Rd 1127 903-489-2646

TEXAS • Dallas
Official Lionel Layout Builder Since 2001
Trainlineer shop/showroom includes:
Custom Layouts, Modulars, Model Stations,
Bridge Kits...come see...there's always
something new!! www.TWTrainWorx.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
Model Railroader's '19 & '20 Readers Choice
"Favorite Retail Storefront in the Southwest"

DISCOUNT MODEL TRAINS
4641 Ratliff Lane 972-931-8135

TEXAS • Houston
HO & N, Lionel trains. Complete line of
plastic kits, military, architectural supplies,
paints and tools. Open Mon-Fri 11am-5pm,
Sat 10am-5pm, Sun 12pm-5pm.
www.gandgmodelshop.com

G & G MODEL SHOP
2029 Southwest Fwy 713-529-7752

TEXAS • Houston
All trains, all scales. Magazines, Books, Videos,
Repairs, Brass, Consignments. Discount program, will
ship. papabens@gmail.com M, Tu, Th & F 10-5; W
10-7; Sat 10-5; Closed Sun. Open Sunday's Oct, Nov,
and Dec. Major Credit Cards. www.papabens.com

PAPA BEN'S TRAIN PLACE
4007-E Bellaire Blvd. 713-523-5600

TEXAS • San Antonio
Model railroading our specialty.
Marklin, G, HO, N, O, Z.
Superdetailing parts galore.
Books, structures, figures and tools.
Tue-Sat 10am-6pm www.dibbleshobbies.com

DIBBLE'S HOBBIES
1029 Donaldson Ave. 210-735-7721

UTAH • Orem
Where it's always cheaper than therapy.
Trains all scales, LGB, Broadway Limited,
Atlas, Lionel, Micro-Trains, Athearn.
Just north of the other Arby's by Maceys.

HOBBY STOP
934 N. State St. #101 801-226-7947

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 Engrem Avenue 802-775-2736

VIRGINIA • Ashland (Richmond)
OPEN 7 DAYS: Mon-Sat 10-6; Sun 11-4
Personal service/repairs/layout ideas. We ship.
Gauge G, O, HO, N, Thomas Wooden, & more.
I-95, EXIT 92, ONLY 1.2 Miles West to tracks.
www.trainandtoyshop.com

TINY TIM'S TRAINS & TOYS
104 S. Railroad Ave. 804-368-0063

VIRGINIA/MARYLAND • Chantilly, VA
Full service storefront & online store. All makes
& scales. New/used trains sales, service, repair
& upgrades. All scales & Digitrax dealer.
Online Sales Visit www.traindepot.biz

TRAIN DEPOT
13944 Willard Rd., Suite I 703-953-3767

WASHINGTON • Burien (Seattle)
Close to SEA-TAC airport - short drive from
downtown Seattle. New & vintage electric
trains in all scales. Tues - Sat 11-6
www.electrictainshop.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.eastsidettrains.com

EASTSIDE TRAINS, INC.
217 Central Way 425-828-4098

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:
Tue-Fri 10-5, Sat 10-4, Sun 12-4 Winters only.
Always closed on Monday!
Call ahead to be sure we're open!

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-BC • Savona
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. 20 min. west of Kamloops.
www.kellyskaboos.ca

KELLY'S KABOOSE, THE RAILWAY STORE
6648 Savona Access Rd. 250-377-8510

CANADA-BC • Summerland
Specializing in European Model Trains,
Marklin, Trix, Roco, LGB, Brawa, Fleischmann
& many more. Huge selection of trains,
kits, & access. HO-N-Z-1-O-G Scales.
www.EuroRailHobbies.com

EURO RAIL HOBBIES & MORE INC
9901 Main St. 866-799-6098

CANADA-BC • Vancouver
Large selection of model RR supplies includ-
ing Min. by Eric, Athearn/MDC, Atlas, Peco,
Digitrax, Rapido, SoundTraxx, brass, etc.
Special orders. www.central-hobbies.com
Mon-Fri 11-5, Sat 10:30-5. 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 • 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 Argentea Rd. Unit #24 1-800-464-1730

CANADA-ON • Toronto (Markham)
North American Train Specialists since 1962
HO, N, O, G and DCC
Railfanning beside CNR Mainline
Closed Mondays www.georgestrains.com

GEORGE'S TRAINS LTD.
550 Alden Rd., Unit 101 905-470-6200

GERMANY • Kaarst
Europe's best known address for US Railroads.
We carry N, HO & G scale for all road names,
Atlas to Walther's.
Mon - Fri 10-6:30, Sat 10-2
Overseas orders with VS & MC
ALL AMERICAN TRAINS
www.aat-net.de E-mail: info@aat-net.de

Run your Retail Directory
ad in the next issue of
Model Railroader!

Call 888-558-1544, ext. 551
for more information.

**Model
Railroader**

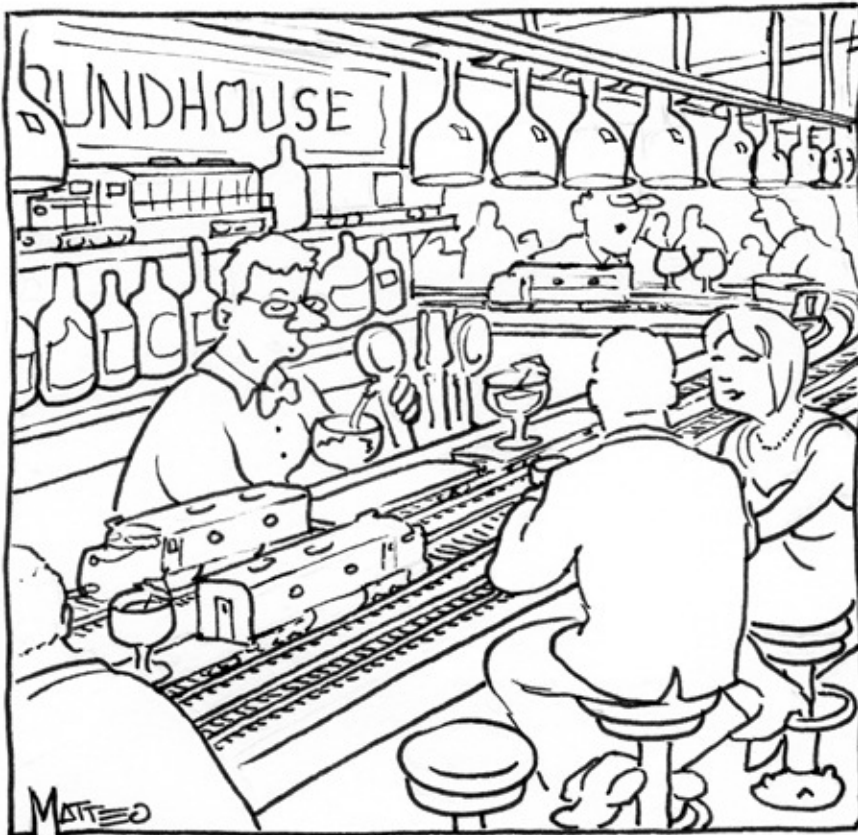
Go Digital!

Read *Model Railroader* on your tablet or laptop!

- Live links.
- Zoom in & magnify.
- Search & print pages.
- Bookmark pages.
- Save storage space.



Visit ModelRailroader.com/DigitalEditions



Coming up

Modeling an iconic CSX location in West Virginia

Thurmond, W.Va., is a well-known railfanning scene on the former Chesapeake & Ohio. Layout builder Lance Mindheim explains how he modeled the town for a client.

Handlaid, without the headaches

Contributing editor Pelle Søbørg tells how he used detailed plastic tie strips and commercial turnout kits to handlay track for his new Danefield modular layout.

Plus more:

- Visit a husband-and-wife team's Boston & Maine model railroad
- Adding a freelanced extension to a prototypical layout
- Rehabbing our Jones Island port scene – just add water

Subscribe today!

1-877-246-4879

www.ModelRailroader.com

Display Ad Index

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

Atlas Model Railroad Co., Inc.	5	Model Railroader Binders.	53
Axian Technology	23	Model Rectifier Corp.	3
Bachmann Industries, Inc.	76	Model Train Technology	8
Broadway Limited Imports.	14	NCE Corp.	61
Circuitron	23	Nicholas Smith Trains	23
Custom Model Railroads	13	PECO Products.	13
CVP Products.	15	Rapido Trains.	2
Digitrax	28	Right on Track Models	15
Dwarvin Enterprises	13	Showcase Express.	15
Entertainment, Inc.	15	Sievers Benchwork	23
Halfpricehobby.com	23	SoundTraxx	53
Integ Process Group, Inc.	15	The Coach Yard	23
Kato USA, Inc.	75	Train World	13
LGB.	29	Trainz.com	53
Locolinc	53	Trix Trains.	22
Mario's Trains	17	Woodland Scenics.	9
Menard, Inc.	7	Yankee Dabbler.	23
Micro Engineering.	17	Z Stuff for Trains	23
Micro-Mark	17		
Modelers Marketplace.	68-69		
Model Railroader Backlist Books.	60		

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.

Visiting mystical places



Mullens Motor Barn once again comes to life as it did in July 1958 on Gerry Albers' HO Virginia Ry., thanks to a beautifully constructed structure by Pete Moffett (Gerry installed the lighting and Allen McClelland detailed the office), two FM Train Masters by Atlas, and a Global Imports brass General Electric "streamliner." Gerry Albers photo

As one acquires an ever-expanding knowledge of prototype railroading, some place names assume almost mystical proportions: Horseshoe Curve. Cajon Pass. Tehachapi Loop. The Spiral Tunnels. Cumbres Pass. Crawford Notch. The Georgetown Loop. Animas River Canyon. Saluda Hill.

Some are far off the beaten path: Avery, Idaho, for example, where the Milwaukee Road once swapped steam and then diesel power for electric motors. Or southern Indiana's Madison Hill, where the Pennsylvania RR used a specially equipped steam and then diesel locomotive to get down to the Ohio River's north bank on an unforgivingly steep grade. Or maybe the Doe River Gorge, where the East Tennessee & Western North Carolina tiptoed around Pardee Point high above the namesake river, deep in the Appalachians.

The Palisades were a scenic highlight of the narrow gauge Denver, South Park & Pacific and are glimpsed today only by intrepid wranglers of

off-road vehicles. Rollins Pass, high above Moffat Tunnel west of Denver, was once the battleground of David Moffat's 2-6-6-0s; some wag erected a sign at the eastern entrance to the old right-of-way noting the crude grade was suitable only for four-wheel-drive vehicles or rental cars.

Surprisingly, however, you can visit or even ride through many of these North American railroad wonders with no special vehicle or major detour from main thoroughfares. And I can assure you from personal experience that Europe, Asia, Australia, and New Zealand boast of equal rail-oriented wonders. So do Central and South America, Japan, India, and Africa, though I haven't visited them yet.

During the 1970s, the late Jim Boyd and I made almost annual pilgrimages to the central Appalachians to scope out coal branches on the Chesapeake & Ohio, Clinchfield, Louisville & Nashville, and Norfolk & Western. The N&W had

absorbed the Virginian in 1959, but we still regarded the VGN as a separate railroad and sought out evidence of its days as an electrified coal-hauling railroad.

If you've read anything about the Virginian, you have heard of Mullens, W.Va., and the famous Mullens Motor Barn, where the electric freight motors had been stabled. By the time Jim and I got there, the Motor Barn was still standing, but it was used to service high-short-hood N&W Electro-Motive Division SDs as well as some former VGN Fairbanks-Morse Train Masters. We even managed to get a cab ride in one of the 2,400-hp FMs as it switched the yard at Elmore just south of Mullens.

By standing on the highway above the Motor Barn and squinting a bit as dusk oozed

into the valley where Mullens was nestled, it didn't take a lot of imagination to see the "square-head" and "streamliner" electrics rather than the boxy EMDs.

But that's where scale model railroading comes into play. What did Mullens look and sound like on a humid July evening in 1958 when the brand new Train Masters came face-to-face with the electrics at the Motor Barn? Thanks to some good modeling and commercial support, Gerry Albers can answer that question any time he fires up his HO tribute to the Virginian Ry.

The Virginian disappeared into the N&W following the merger, and power to the overhead wires was shut off in 1962. Thanks to scale model railroading, however, that's a reality we don't have to accept. With a modicum of due diligence, we can choose to reset the clock to almost any date. Suddenly double-headed K4s around Horseshoe Curve, or Little Joes through the Bitterroots, or Galloping Geese around

Ophir Loop, or Ten-Wheelers easing around Pardee Point become daily (even on Sunday!) occurrences once again.

I often write about the operating potential of model railroading. But this isn't intended to minimize the importance of the visuals. A summer night at Mullens Motor Barn requires no action to exude its mystical qualities. **MR**



WHAT DID MULLENS LOOK AND SOUND LIKE ON A HUMID JULY EVENING IN 1958 WHEN THE BRAND NEW TRAIN MASTERS CAME FACE-TO-FACE WITH THE ELECTRICS AT THE MOTOR BARN? — TONY

N
Scale

New! Flat Radiator EMD SD70M Locomotives

KATO
PRECISION RAILROAD MODELS

A blast from the past is returning to N scale courtesy of Kato USA! The EMD SD70M was the predecessor of such modern locomotives as the SD70ACE, and was delivered with a “Flat radiator” design, a look they wore prior to 2002 when they were refitted with a more commonly recognized flared radiator that is so common on engines today. These engines were famously popular with railroads like the Norfolk Southern and Union Pacific, being the two largest buyers of these engines when they were first introduced, and are still in use to this very day!

Kato is bringing these SD70M engines to the market with all details fully installed, illuminated number boards and headlights, and the classic paint schemes they wore in their pre-2002 appearance.

Of course, like all new releases, these engines are available in standard Analog (DC), DCC, and even DCC + Sound versions!

Looking for some rolling stock for your latest N scale Locomotives? Kato's N Scale Mixed Freight Train set includes 6 assorted freight cars that are suitable for almost any era of manifest freight train!



Item # 106-6275
N Mixed Freight Train Set - MSRP \$90



NORFOLK
SOUTHERN

UNION
PACIFIC

Item #	Description	MSRP
#176-7605	N EMD SD70M Flat Radiator - Norfolk Southern #2583	\$125
#176-7606	N EMD SD70M Flat Radiator - Norfolk Southern #2588	\$125
#176-7607	N EMD SD70M Flat Radiator - Union Pacific #4000	\$125
#176-7608	N EMD SD70M Flat Radiator - Union Pacific #4198	\$125

Versions Equipped with Digitrax DCC:

#176-7605-DCC	N EMD SD70M Flat Radiator - NS #2583 w/ DCC Installed	\$205
#176-7606-DCC	N EMD SD70M Flat Radiator - NS #2588 w/ DCC Installed	\$205
#176-7607-DCC	N EMD SD70M Flat Radiator - UP #4000 w/ DCC Installed	\$205
#176-7608-DCC	N EMD SD70M Flat Radiator - UP #4198 w/ DCC Installed	\$205

Versions Equipped with ESU LokSound DCC:

#176-7605-LS	N EMD SD70M Flat Radiator - NS #2583 w/ Sound	\$325
#176-7606-LS	N EMD SD70M Flat Radiator - NS #2588 w/ Sound	\$325
#176-7607-LS	N EMD SD70M Flat Radiator - UP #4000 w/ Sound	\$325
#176-7608-LS	N EMD SD70M Flat Radiator - UP #4198 w/ Sound	\$325

BACHMANN

N
SCALE



New Arrival: Bachmann's 4-6-4 Hudson, Now in N Scale

The late 1920s brought about New York Central's need for faster, more powerful locomotives to head its famous passenger trains, such as the *20th Century Limited*. ALCO's 4-6-4 locomotive fulfilled that need as it entered service in 1927. The Hudson locomotive would later become an iconic symbol of both New York Central and fast, luxury rail travel.

With all-new tooling and factory-set for maximum realism, Bachmann's N scale Hudson is equipped with an Econami™ SoundTraxx® steam package. This package offers a choice of 16 whistles, multiple variations of 6 bell types, 4 prototypical chuffs, 5 air pumps and 4 dynamos, plus cylinder cocks, grade-crossing signal, blowdown, brake squeal/release, coupling/uncoupling, water stop, and "all-aboard" announcements with coach-door operation—all in 16-bit polyphonic sound. Visit your favorite hobby retailer to add this engine to your N scale layout today!

Features include:

- DCC Econami™ sound-equipped
- dual-mode NMRA-compliant decoder
- precision motor
- authentic Bopok-style drivers
- operating headlight and tender backup light
- completely hidden drive train
- gear drive
- separate detail parts, including bell, whistle, pop valves, and handrails
- E-Z Mate® Mark II couplers, front and rear; extra front dummy coupler in down position included
- die-cast chassis
- metal driver axle bearings
- performs best on 11.25" radius curves or greater



NEW

NEW YORK CENTRAL #5405
(later, Gothic lettering)
Item No. 53651



NEW

NEW YORK CENTRAL #5420
(as delivered, Roman lettering)
Item No. 53652



NEW

NEW YORK CENTRAL #5426
(as delivered, Roman lettering)
Item No. 53653



NEW

NEW YORK CENTRAL #5445
(later, Gothic lettering)
Item No. 53654



Shipping Now!
MSRP \$439.00 each