

MILESTONES IN MODEL RAILROADING p.66



**MLW 420 in HO
from Rapido** p.48

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Building a realistic layout

**Tony Koester's essential tips for
planning a compelling railroad** p.28

20
new
products!

The Chesapeake &
Ohio comes to life on
Mike Burgett's HO
layout. See page 28.

**Daryl Kruse's
UP Geneva Sub
Scenic
showpiece** p.34

PLUS

DCC control for Walthers' turntables p.46

Build a rail-served salt warehouse p.22

Tips for modeling from a wheelchair p.18

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EST. 1999



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Seven milestones in model railroading



On the cover: Freelance or prototype? Tony Koester cites Mike Burgett's HO scale C&O layout as an example of realism. Craig Wilson photo



Next issue

In August, read how Dave Abeles kitbashed an iconic diesel for his Conrail layout. Plus, visit a layout dug out of the dirt, make a view block from trees, and more!

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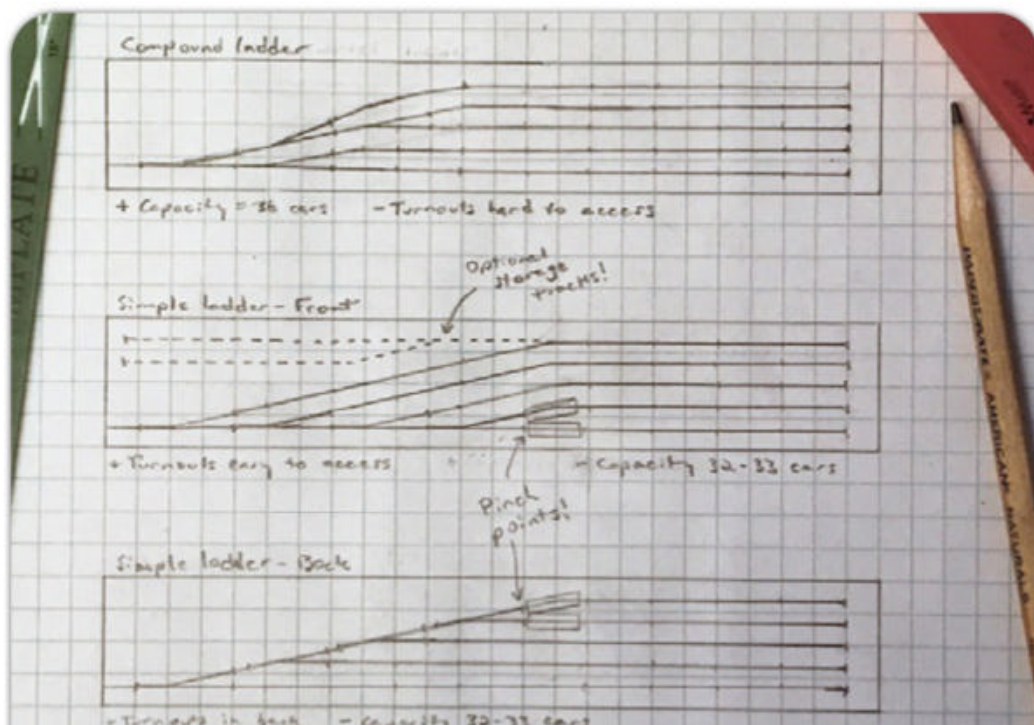
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Sketching with Steve

Follow along with Associate Editor Steven Otte in *Model Railroader's* first-ever edition of Sketching with Steve. Through the use of hand-drawn outlines, Steven walks you through the process of designing a yard ladder, explaining the importance of arranging turnouts to allow for different car capacities. For more expert advice, check in every month at Trains.com to see what new tips Steven has on the drawing board.



Feraca Stone Canyon Gallery

Head on over to Trains.com to check out photographs of John Feraca's HO scale Stone Canyon. This impressive freelanced layout was started back in 2003, and now, several expansions later, fills its 28 x 40-foot space with detailed scenes depicting the Mountain West region of the United States. Any modeler is sure to find inspiration for their own layout in this gallery, showing some of the layout's more than 100 town and industry structures.



Scale it Down

Be sure to watch this brand-new, exclusive Trains.com video series, where host Steve Brown is attempting to build an N-scale version of his favorite HO-scale layout, the Winston-Salem Southbound Ry. Scaling down the track plan, which was previously featured in the pages of *Model Railroader* magazine and on MRVideoPlus, may prove to be more complicated than Steve had originally thought! To follow his progress in *Scale it Down*, become a Trains.com member for unlimited access to all the *Model Railroader* video series.



Passenger car tips

In this quick how-to, originally published in *The Model Railroader's Guide to Passenger Equipment & Operation*, the late Andy Sperandio recommends a simple solution for making sure your passenger fleet looks better than ever: a stainless steel finish. His easy paint trick involving a few select lacquer layers will help add a heightened level of realism that guarantees your cars are ready for the track.



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THE SHAY



The Shay locomotive was the most widely used geared steam locomotive. The locomotives were built to the patents of Ephraim Shay, who has been credited with the popularization of the concept of a geared steam locomotive. Although the design of Ephraim Shay's early locomotives differed from later ones, there is a clear line of development that joins all Shays. In 1884, they delivered the first 3-cylinder (Class B) Shay.

Class B, Lima-built 50-ton 2-truck Shay

Our rendition of The Shay will feature ESU LokSound V5 sound decoder. Cast Chassis, working external valve gear and drive shafts. Working directional lamps front and rear.

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HO scale

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Making a plan and sticking to it

In his cover story this month, Contributing Editor Tony Koester explores the benefits and drawbacks of modeling a prototype railroad versus a less-rigid freelanced approach. It's an interesting topic, and Tony shows how some well-known model railroaders have tackled the subject.

Picking an era is another important decision. You're much closer to creating a believable model railroad if your locomotives, rolling stock, buildings, and vehicles all reflect a given era.

I'll admit to being lazy when it comes to following my era



Set in Milwaukee in the 1940s, our Beer Line project railroad benefited from a specific time and specific place. Jim Forbes photo

(mid-1960s, in case you were wondering). If a model appeals to me, it's as good as sold! Consequently, I own rolling stock representative of a broad range of rail history.

Now that I think about it, I see how a little discipline would have given me a more useful fleet and saved money.

So don't be me. Pick an era and stick with it.

While we're on the subject, wouldn't it be great if we could settle on what we're calling these eras? Steam-to-diesel transition era is clear enough, but what if someone told you they model the diesel era? That covers 60 years!

United Kingdom-based retailer Hattons is trying to bring order out of chaos.

"We resell a lot of preowned U.S. model railroad items to customers whose primary interest is U.K. railways," explained Richard Davies, Hattons proprietor. "They tend



to ask 'what should I run with this?' type questions.

"Era information helps make informed decisions on what makes sense for your given road or time."

Hattons suggests a system for naming eras in its advertisements, and wants to hear your ideas. Join the conversation at hattonsmodelmoney.com/US-Eras

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We welcome contributions from readers, including articles, photographs, and drawings. For more information on submitting material, e-mail Editor Carl Swanson at cswanson@kalmbach.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.

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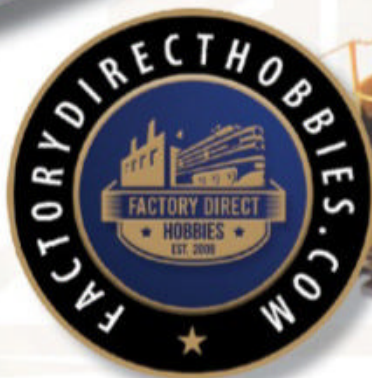
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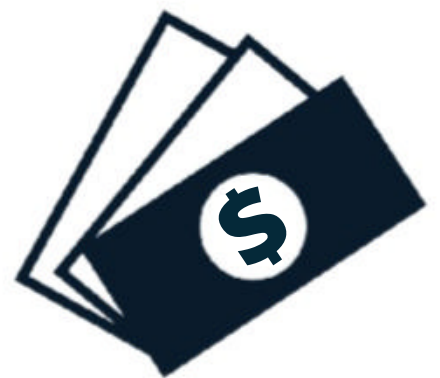
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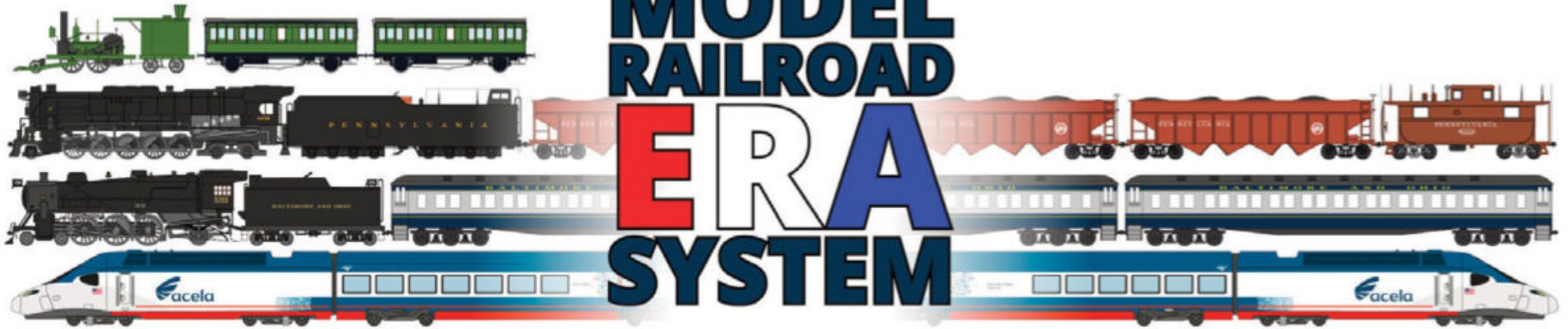
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**Shouldn't America have it's
own Era System?**

Please join us at hattonsmodelmoney.com/US-Eras
and give us your thoughts and opinions.
We'd love your assistance in developing one!

**Our proposed method of grouping
products based on prototypes
across nearly 200 years of railroads
in the United States!**

Era	Date	Name	Steam	Alco	EMD	GE	Passenger
1	1827-1880	Old Time	American 4-4-0s				Open vestibule wood cars <60ft
2	1880-1916	Turn of the Century	Atlantics, Moguls, Consolidations, Camelbacks				Closed vestibule wood cars 80ft
3	1917-1928	Golden Age	USRA to Superpower and Modern Steam				Steel Clerestory/Early streamliners
4	1929-1949	Superpower	4-6-4s, 2-8-4s, 4-8-4s, 2-10-4s and 2-6-6-4s	Small switchers HH, S and DL series	NW Series/Streamline Trainsets/Early E Series		
5	1949-1960	Steam/Diesel Transition	Steam Decline	FA/PA/S Series Early RS Series	E/F/SW Series Early GP/SD Series	U Series launched	Rise of the post-war streamliner
6	1960-1972	1st Gen	End of steam	RS27-36/Century Series	SW1000/1500, GP20 to SD45	U Series	Decline of the post-war streamliner
7	1972-1979	2nd Gen			GP/MP15, GP/SD50, GP/SD60, Dash 2 Series	Dash 7	Amtrak Heritage/Amfleet
8	1980-1989	Eighties			GP50/60 SD50/60	Dash 8	Amtrak Superliners/Amfleet II
9	1990-2010	Nineties and noughties			SD70 Early AC traction	Dash 9, Early AC	Amtrak Viewliner/Superliner 2
10	2010 to Present	Current			SD70 ACe-T4	AC Series, GEVO	Avelia Liberty (Amtrak Acela II)

Thank you to **Mr H. Fuller, Mr R. Shirey, Mr J. Agneta** and many others for their help in progressing the eras we proposed in our previous advertisements.

www.hattonsmodelmoney.com/US-Eras

We welcome assistance in developing this resource - please contact our proprietor Richard Davies on richard@hattons.co.uk if you are interested in participating with this project.

HO scale



Electro-Motive Division SD45 diesel locomotive. Give your layout some flare with this road unit from ScaleTrains.com. The HO scale Rivet Counter line model is decorated for Burlington Northern; Atchison, Topeka & Santa Fe (warbonnet); Conrail (blue); and Norfolk & Western (high

short hood; Pevler Blue and American Revolution Bicentennial schemes). Direct current models sell for \$184.99, and versions with a dual-mode ESU LokSound 5 sound decoder are priced at \$274.99 (add \$5 for N&W Bicentennial units). ScaleTrains.com Inc., 423-299-3689, scaletrains.com

Broadway Limited announces Paragon4 line

Broadway Limited Imports announced its new Paragon4 sound and control system with Rolling Thunder. The first two HO scale models with the new technology will be an Atchison, Topeka & Santa Fe 2-8-2 steam locomotive and Electro-Motive Division (EMD) GP20.

Features of the dual-mode Paragon4 system include a built-in GoPack capacitor that's automatically disabled on the programming track for full compatibility with JMRI's Decoder Pro, Switcher Mode for low-speed control, Pro Lighting Mode for individual control of all

lights on a model, quillable whistle, choice of three air horns, adjustable bell ringing intervals, grade crossing whistle signal, automatic forward/reverse signal, load-based diesel engine sound intensity, individually adjustable sound volumes for each effect, and an EZ Reset Button for quick return to factory default settings. A DC Master, sold separately, is required to control sound effects on direct-current layouts.

The Santa Fe 2-8-2 steam locomotive will be offered in two versions: with a switching pilot and oil tender and with a

road pilot, oil tender, and large rear headlight in four road numbers each. The model will be priced at \$499.99.

The EMD GP20 will be decorated for Atchison, Topeka & Santa Fe; Burlington Northern; Chicago, Burlington & Quincy; Conrail; Electro-Motive Division demonstrator (one road number); New York Central; Southern Pacific; and Union Pacific, in two numbers per scheme unless noted. The four-axle road switcher will be priced at \$329.99.

For additional information, visit broadway-limited.com.

HO scale locomotives



- **General Electric U30C diesel locomotive.** Chessie System with Chesapeake & Ohio reporting marks, Conrail (blue and white), Delaware & Hudson (blue, gray, and yellow), Reading Co. (yellow and green), Pennsylvania RR (Dark Green Locomotive Enamel and

gold), and Seaboard Coast Line (black and yellow). Three road numbers per scheme; also available undecorated (with and without nose headlight). New tooling based on Phase I prototype. Features etched-metal grills; railroad-specific cab, headlight, and nose light variations; newly tooled Adirondack truck side-frames; and metal couplers. Direct-current model with 8-pin plug for Digital Command Control decoder, \$189.95; with dual-mode ESU LokSound sound decoder, \$299.95. Fourth quarter

2021. Master Line. Atlas Model Railroad Co., 908-687-0880, atlasrr.com



- **Electro-Motive Division SW7 diesel locomotive.** Chicago, Burlington & Quincy; Atlantic Coast Line (purple and silver); Detroit & Toledo Shore Line (black, three road numbers); Illinois

Central Gulf (orange and white); New York Central (black); and Union Pacific (Armour Yellow and Harbor Mist Gray). Four road numbers per scheme (two each in direct current and Digital Command Control) unless noted. Newly tooled model based on Phase II prototype. Six louvered side doors with letter-board gap and factory-installed grab irons on hood and cab. Direct-current model, \$149.98; with dual-mode ESU Sound and DCC decoder, \$199.98. WaltherMainline. Wm. K. Walther Inc., 414-527-0770, walthers.com

HO scale freight cars



- **International Car Co. riveted-side caboose.** Norfolk & Western (class C-20, dark blue with “hamburger” herald), Pittsburgh & West Virginia (red and black), and Seaboard Air Line (red and black, four road numbers). Three numbers per scheme unless noted. Prototype-specific details, see-through end platforms and steps, light-emitting-diode lighting, and body-mounted McHenry scale couplers. Without sound, \$109.99; with SoundTraxx Tsunami SoundCar decoder, \$149.99. April 2022. Genesis series. Athearn Trains, 800-338-4639, athearn.com



- **Santa Fe Refrigerated Despatch class RR-56, RR-60, and RR-61 mechanical refrigerator cars.** RR-56: *El Capitan*, *Chief*, *San Francisco Chief*, *Santa Fe All the Way*, *Super Chief*, and *Texas Chief* slogans. RR-60 and RR-61: *San Francisco Chief* and *Santa Fe All the Way* slogans. Separate, factory-applied door posts, door latches, and uncoupling levers; detailed underframe with piping and equipment; positionable roof hatches; see-through side grills; Trane diesel generator; and Kadec no. 158 whisker couplers. Optional sound unit available. Single car, \$59.95; six-pack, \$239.80. 2022 delivery. Rapido Trains, 905-474-3314, rapidotrains.com

HO scale



Milwaukee, Racine & Troy Pullman-Standard 4,750-cubic-foot capacity three-bay covered hopper. This custom-decorated Accurail kit is available exclusively from the Kalmbach Hobby Store. The HO scale car is offered in one road number and features a plastic body with a separate hatch cover casting and running board ends; free-standing end cages with a modeler-installed brake wheel, chain fulcrum, end braces, and crossover platform; roller-bearing trucks with plastic wheelsets; and Accumate couplers. The limited-run kit is priced at **\$27.99**. Kalmbach Hobby Store, KalmbachHobbyStore.com

HO scale details and accessories



- **52'-6" gondola lids.** Early (ribbed) and late (smooth) versions. 3-D printed lid in white scheme. Includes modeler-installed lid locks and grab irons. Designed to fit Atlas, ExactRail, and Walther Thrall gondolas and cars from other manufacturers. \$20. MAC Rail LLC, macrailproducts.com



- **1980s GMC Brigadier dump truck.** Kit includes cast-pewter wheels, tires, and details; resin cab and dump bed; photo-etched details; and windshield panels. \$34.95. Showcase Miniatures, 334-750-3276, showcaseminiatures.net

N scale freight cars

- **52-foot depressed-center flatcar.** Department of Defense with Sheridan tank load: Black flatcar with green tank, desert camouflage flatcar and tank, and

green camouflage flatcar and tank. Without load: St. Louis-San Francisco (Frisco, yellow) and New York Central (black). One road number per scheme. Celcon trucks; blackened metal RP-25 contour wheels; and blackened brass axles. With load, \$49; without load, \$26. Silver Series. Bachmann Trains, 215-533-1600, bachmanntrains.com

N scale structures



- **The house of the labyrinth.** Laser-cut cardboard kit with PDF instructions. Measures 4.33" x 2.16" x 2.16". \$46.76. Price may vary based on exchange rate. Minifer, manifer.fr/en

Z scale locomotives



- **Electro-Motive Division F7A and F7B diesel locomotives.** Western Pacific (A unit and A-B set in silver-and-orange scheme, one road number each; A unit in green-and-orange scheme, two numbers). Blackened metal wheels, directional light-emitting-diode lighting in A units, 7mm motor, optional

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HO scale



Flyer Express Fast-Freight. This WalthersTrainline set is scheduled for release in August. The HO scale set (**\$199.98**) will include an Electro-Motive Division GP15-1 diesel locomotive; a 53-foot smooth-side gondola; a 50-foot insulated boxcar; a wide-cupola caboose (all freight cars have metal wheels and Proto-Max metal couplers); a 36" x 45" oval of Power-Loc track; a power pack and speed/direction controller; and more. Wm. K. Walthers Inc., 414-527-0770, walthers.com

replacement truck with truck-mounted coupler, and drawbar (A units only). American Z Line, 614-764-1703, americanzline.com

Books

- **The Baltimore & Ohio Chicago Terminal History.** By David J. Leider. Book traces the history of the railroads that formed the B&OCT from the LaSalle & Chicago RR projected in 1867 to the Chicago & Great Western, which together with the Chicago & Calumet Terminal formed the Chicago Terminal Transfer, which became the B&OCT. The B&O is followed from its entry into Chicago in 1873 to the formation of CSX in 1980. Softcover, 325 pages. More than 280 photos, 128 maps, 20 drawings and illustrations, and more. \$50 (includes media rate shipping to the continental U.S.; contact for prices outside the U.S.) Check or money order to David Leider, 9070 64th Way N., Pinellas Park, FL 33782-4663; sooauthor@netzero.com



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O scale

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Showcase



The Kalmbach Hobby Store recently received several new tools and sets from Excel Blades Corp. Above is a small sampling of the items. To see the full lineup of products, and to place an order, visit KalmbachHobbyStore.com

1 Hobby knife set. This multi-piece set includes K1, K2, and K5 hobby knives and nos. 2, 10, 11, 16, 17, 18, 19, 22, and 24 blades. The set,

priced at **\$27.99**, includes a wood case.

2 21-piece mini tool set. Included in this assortment set (**\$19.99**) are five hex-nut drivers, six slotted screwdrivers, three hex-key drivers, two Phillips-head screwdrivers, and five open-ended wrenches, all in a plastic storage box.

3 Machine squares. These polished carbon steel tools

include markings in inches and millimeters. Available sizes are 4" (**\$19.99**), 6" (**\$24.99**), 8" (**\$29.99**), and 10" (**\$34.99**).

4 Hemostats. Features on these gripping tools (**\$7.99 each**) include stainless steel construction, a three-level locking mechanism, and serrated jaws.

5 Three-piece pounce wheel set. Trace patterns or

simulate nail holes in wood with these tools (**\$29.99**).

Each pounce wheel has a 5" handle and can create 24 (small), 18 (medium), and 14 (large) perforations per inch.

6 Hand tools. Add these end cutters, bent nose pliers, and wire cutters to your toolbox. The tools (**\$9.99 each**) feature carbon steel construction and plastic grip handles. **MR**

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Model Railroader July 2021

Tips on modeling from a wheelchair

Q I've searched all over the internet for information on how to build a model railroad when you're in a wheelchair, but I've found nothing. Nada! Zilch! Can you help, please? I'm desperate!

Joe Kienlen, Conshohocken, Pa.

A Though we haven't previously published an article specifically about how to build a layout while using a wheelchair, we've run a good number of articles with tips and techniques that add up to the information you need.

Start with the article "New life for the Pennsy Middle Division" by Lou Sassi in our February 2013 issue. In it, the author explains how Jimmy Deignan (seen in the photo at right) and his friends refurbished an existing layout and made it wheelchair-accessible after Jimmy was left partially paralyzed following a motorcycle accident.

Next, check out "Operating sitting down," by Paul Dolkos, in our April 2009 issue. Though that article talks about operating from rolling office chairs, a lot of the same issues mentioned in that article apply – reach-in distance, turnout controls, and visibility. Apply these principles to the entire layout, rather than specific operating stations.

Lastly, Bob Wundrock's article "Modeling with a disability" on Trains.com has good advice for improving accessibility.

To make a layout wheelchair-friendly, I would suggest you keep the following in mind:

Leg and chair clearance. If you don't want your knees or the arms of your chair bumping into your benchwork, you'll want about 28" to 30" of clearance under the model railroad. An around-the-walls shelf layout will let you use low-profile shelf brackets or cantilevered beams to support the layout sections so you don't have to maneuver around benchwork legs or angled supports.

Layout height and reach. While two feet might seem like a



Jimmy Deignan runs a passenger train into St. Andrews on his HO scale Pennsylvania RR Middle Division. The 33-inch-wide aisles of the layout provide plenty of room for Jimmy and his friends to operate the layout. Lou Sassi photo

reasonable maximum distance to reach in to align a turnout or rerail a car, and 36" from the floor might seem like a good height at which to view and operate a layout from a seated position, remember that the higher the layout is, the shorter your reach-in distance will be. Also remember that once your layout is scenicked, you'll be reaching over trees, line poles, and buildings, too. So keep your shelves narrow – 12" to 18" or even less. Consider modeling N scale to pack the most modeling fun onto those narrow shelves.

Benchwork thickness. If we want at least 28" of clearance under the benchwork and a maximum rail height below 36", that's not a lot of wiggle room. Look into commercially available benchwork systems like Mianne, KamKonnnect, and Sievers. If you want to build your benchwork yourself, use an open grid of 1 x 3 lumber to keep your modules as low profile as possible. Look at how Lance Mindheim built benchwork for his Los Angeles Junction shelf layout in "Floating benchwork for shelf layouts" in our Oct. 2016 issue.

Accessibility during construction.

Access to the bottom of the layout for such tasks as wiring and turnout machine installation will be difficult in a wheelchair. I would suggest planning your layout so you can build it in a modular fashion, on the workbench. Plan sections no more than 3 or 4 feet long so you can easily take them to the workbench to access the underside. Once the tracks are laid and wired, mount the sections on low-profile shelf brackets you've installed on the walls.

Turnout control. You'll want to avoid installing switch motors under the benchwork, where they can be bumped. Consider mounting these on the layout's surface, hidden under structures or behind scenery. Or you could line turnouts via choke cables, with controls mounted on the front of the benchwork. Check out the articles "Easy turnout controls" (May 2003) and "Installing ground throws in the foreground" (Oct. 2018) for a few ways to do this.

I hope this provides you with the information and inspiration you need to get started on your layout. Happy railroading!

Q Where did Pelle Søbørg get the parts for his utility poles? They're the most correctly done of any I have seen.

James Bodnar, Brunswick, Ohio

A Luckily, Pelle wrote an article for us explaining not only what parts he used, but how he used them. "Quick and easy utility poles" was published in our November 2016 issue. If that issue isn't in your back-issue stash, you can read and print it, as well as any other article from our 88-year history, by subscribing to our online Archive at Trains.com.

Q After five decades away from model railroading, I dug into my trove of old N scale track, locomotives, and rolling stock, and built a small, old-school, direct-current layout. I moved on to build a sizable layout with new Atlas flextrack affixed to a Homasote surface. Track laying was completed by mid-summer last year. But after the

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

winter in my basement, to my great disappointment, there are stretches of track that are now no longer straight. Sections that were straight last October have become "squiggles."

Obviously, during the fall and winter, there's lower temperature and humidity in my basement. I can't imagine that the flextrack has expanded under those conditions, so maybe something has changed with the Homasote. Have you ever seen this kind of problem?

Mike Weise, Jefferson City, Mo.

A You're right, it's not likely your track has changed size in the basement. More likely is that the benchwork and baseboards you installed the track on have shrunk due to low humidity. It's an imperceptible difference, but there's little to no tolerance in model track to absorb such changes, so you end up with what can look like drastic curves. But you don't have to rip up and reattach all your trackwork. The solution is to cut expansion joints in your track with a cutoff



Model Railroader contributing editor Pelle Søbørg explained how he details his HO scale line poles in our November 2016 issue. Pelle Søbørg photo

wheel in a rotary motor tool. You may have to add a few more electrical feeders to make up for these gaps, but that's sound practice anyway.

HIGH CALIBRE

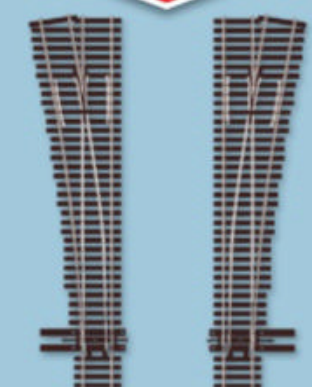
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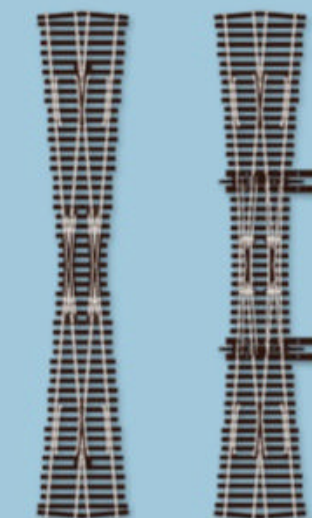


Green River, built by Bob Phelps
Photo: Andrew Burnham



#6 LH Turnout
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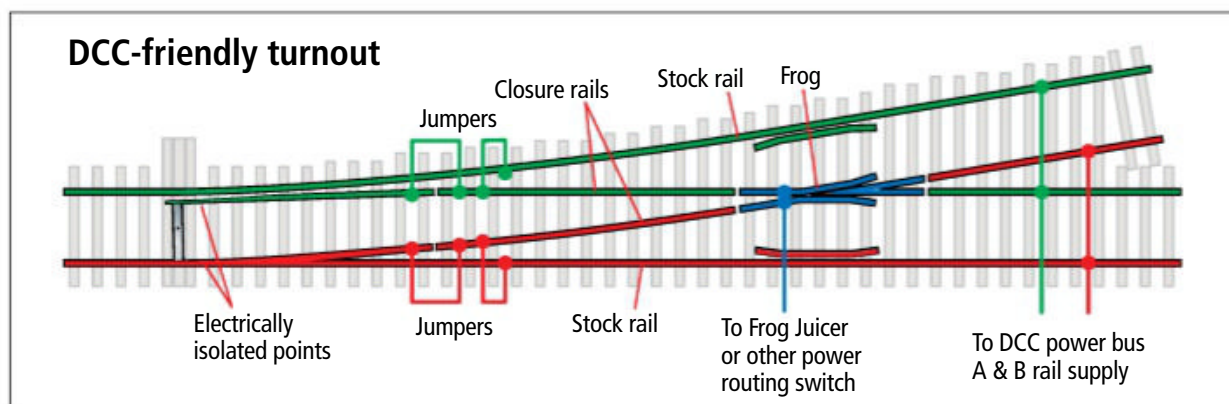


Q Are Atlas turnouts “DCC friendly” in the way Walthers turnouts are advertised? Do I need to do anything special to make Snap-Switches and other track products operate properly on a Digitrax DCC-powered layout?

Edward Gardineer, East Berne, N.Y.

A Before I answer your question, I have to give you two caveats. First, although our DCC Currents columnist Allen Gartner coined the term “DCC friendly,” neither the National Model Railroad Association nor any other body enforces an official definition. So a turnout might be DCC-friendly even if it’s not labeled or sold as such. Second, if it’s properly installed and maintained, and traversed by rolling stock whose wheels are in gauge, any turnout can be used on a DCC layout. Direct current is actually less tolerant of short circuits than DCC.

That said, Atlas has several different lines of track – code 100, code 83, Snap-Track, True-Track, etc. So the answer is “it depends,” which I recognize is less than helpful. So instead let’s look at what



A DCC-friendly turnout will have point and closure rails that are wired to their adjacent stock rails to minimize the chance of short circuits.

“DCC friendly” means. When a metal wheel that’s slightly out of gauge comes in contact with a point rail and a stock rail that are energized with opposite polarities, a short circuit occurs. A DCC-friendly turnout is one that minimizes the risk of that happening by electrically isolating the points and closure rails; powering those components the same as their adjacent stock rails; and switching the frog’s polarity depending on the route lined through the turnout.

A turnout that’s labeled DCC-friendly should come wired like that out of the

package, but if your turnouts aren’t, you can still make them so. Use a razor saw or a cutoff disk in a motor tool to separate the closure rails from the frog and install jumpers under the track connecting each point/closure rail assembly to its adjacent stock rail, as shown in the diagram above. Then attach a wire to the frog and run it to a switch that will change the polarity depending on the way the points are lined, like a Tam Valley Frog Juicer or the secondary contacts on a Tortoise by Circuitron switch motor. **MR**

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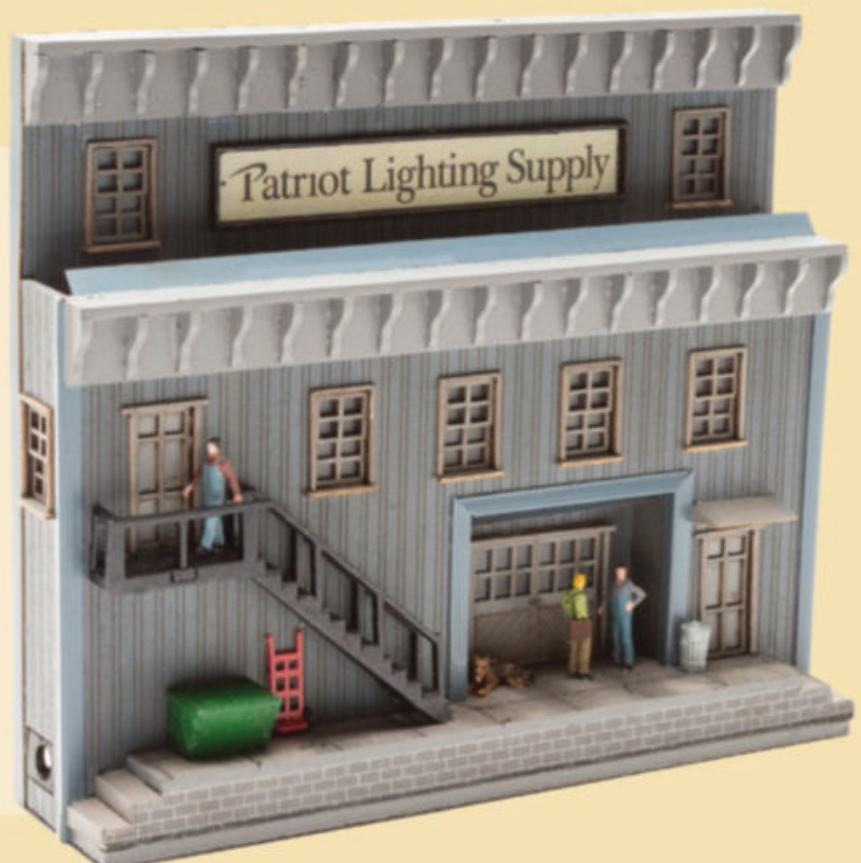
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Cody Grivno used two Pikestuff structures to kitbash the warehouse for Cargill Salt. He shortened the truck scale, a Walthers kit, that will go next to the building. Bill Zuback photos

Building Cargill Salt, part 1

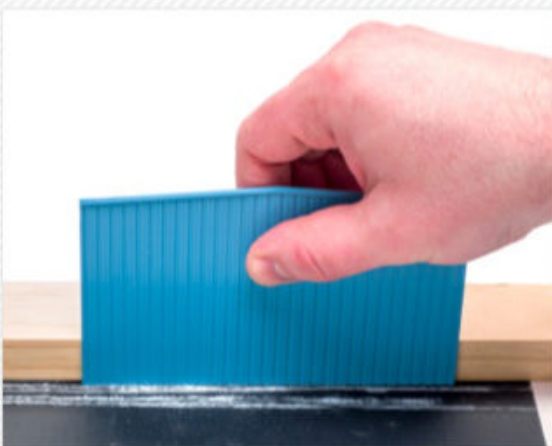
In last month's **Rehab My Railroad**, I showed you how I weathered and restenciled a three-bay covered hopper to look like those used in salt service on full-size railroads. This month, we'll start a two-part series on how I built Cargill Salt, the industry that car (and others) will be spotted at on our HO scale Jones Island project layout.

The prototype Cargill Salt is located on the Milwaukee Municipal Mooring Basin, just to the southeast of the COFCO International grain elevator. The industry receives solar salt from Utah by rail, as well as mixed salt from the Midwest. The solar salt is bagged, placed on pallets, and distributed to hardware stores by tractor-trailer. The

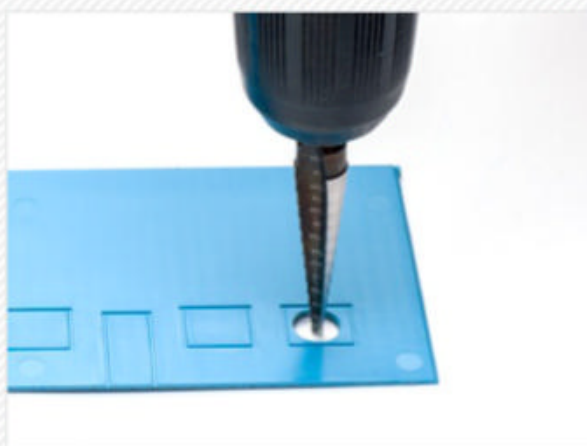
mixed salt is loaded into trucks and used in animal feed.

Those familiar with Jones Island will recognize that this isn't an exact copy of the office/warehouse portion of the full-size industry. However, by using a similar color palette and adding signature details, this building looks the part using off-the-shelf components.

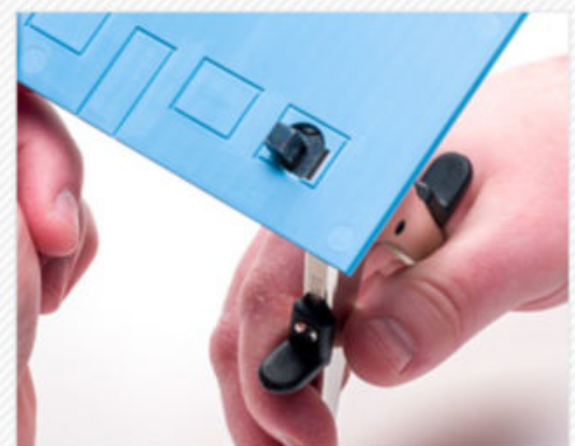
STEP 1 CUTTING AND SANDING



I built this part of Cargill Salt with Pikestuff's One or Two Door Engine-house (no. 541-0008) and Truck Terminal (no. 541-5001) kits. Since I'd be adding a foundation, I ran the bottom edge of each wall panel over a piece of 600-grit sandpaper. Hold the panels against a piece of wood to keep the edge square.



Next I worked on the openings for the windows, personnel doors, and roll-up doors. Cutting guides are molded into the back of the wall sections for the windows and doors. On the window openings, I used a tip from veteran modeler Wayne Wesolowski. I removed most of the plastic using an $\frac{1}{8}$ " to $\frac{1}{2}$ " step drill bit.



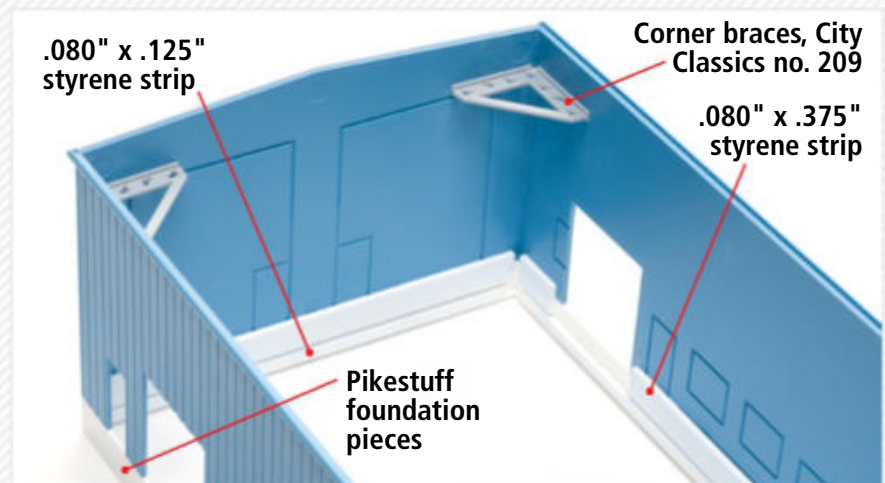
Then I used a nibbling cutter to remove the remaining plastic close to, but not on, the molded lines. I used files to finish the openings.

I turned to a no. 11 blade in a hobby knife for the door openings. Make the cuts in several light passes. Do any clean-up work with files and sanding sticks.

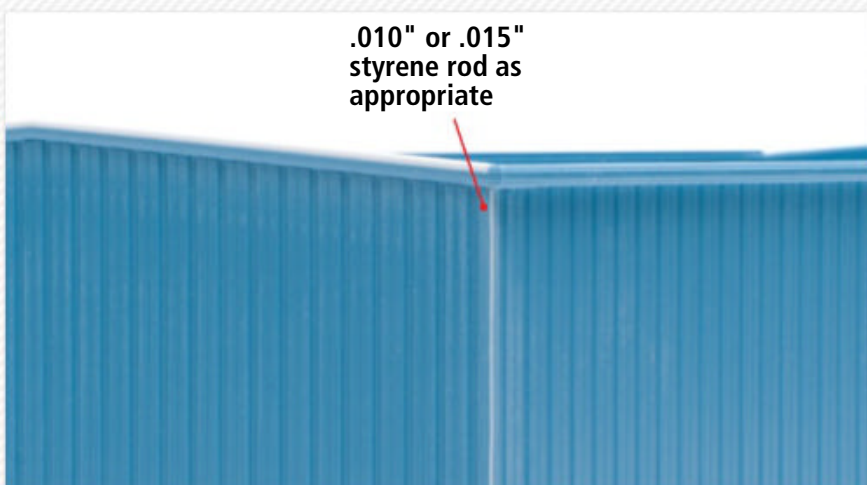
STEP 2 ASSEMBLY, BUMP-OUT, AND ROOF



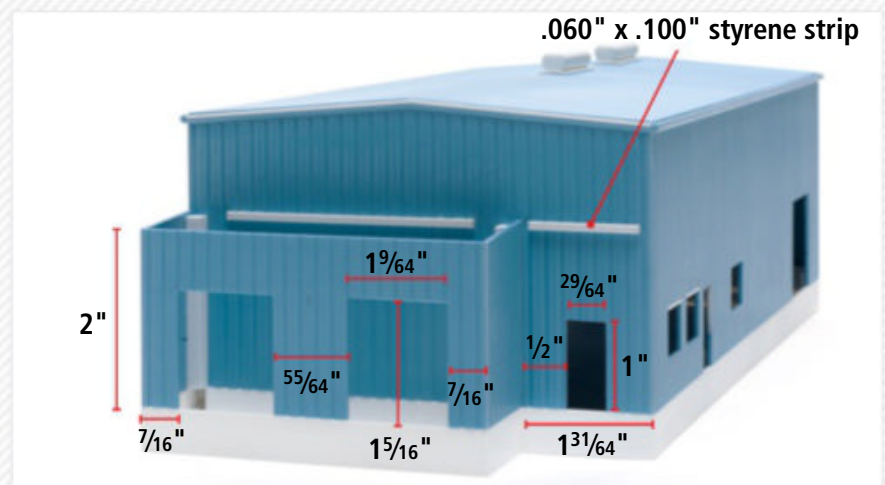
I assembled the enginehouse walls using plastic solvent cement applied with a Microbrush. To keep the walls at right angles during the assembly process, I used Bachmann's magnetic snap and glue set (Kalmbach Hobby Store item no. 84013). The set contains four clamps. I used two per corner, one near the top as shown above, and one at the bottom. The clamps have notches, making it easy to apply glue.



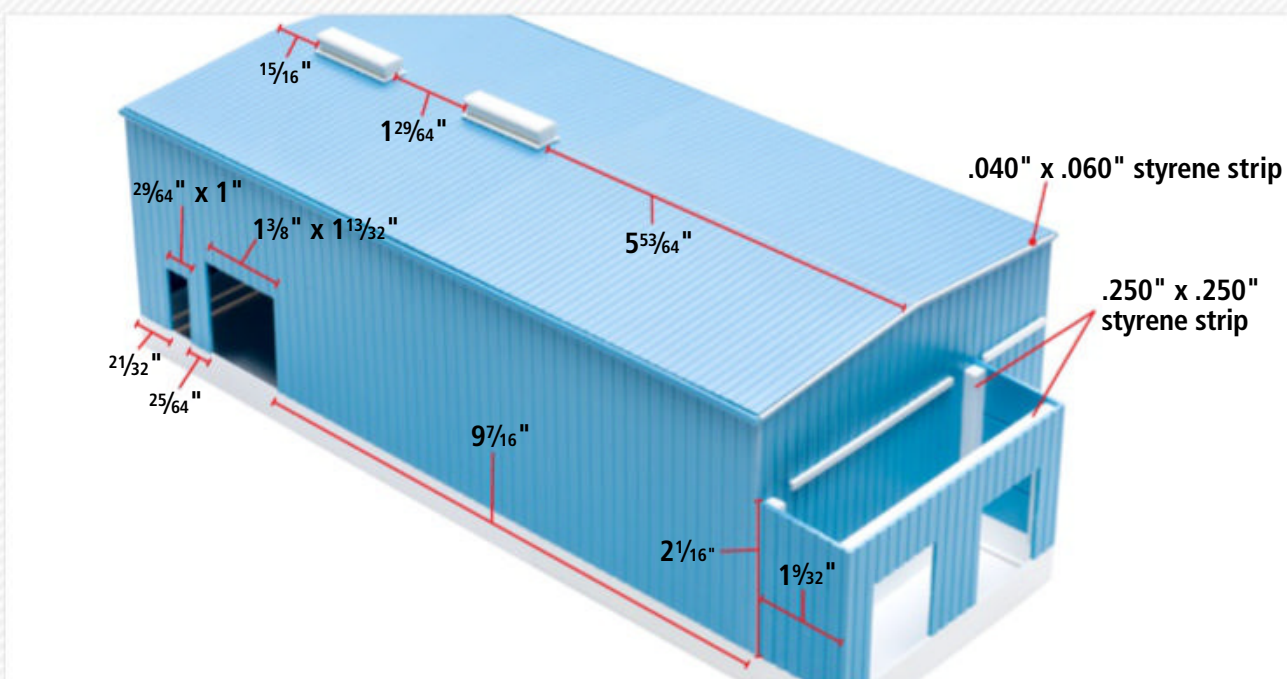
After the glue had dried, I installed City Classics corner braces (no. 209) to the interior. Then I added the foundation pieces, which I had in my scrap box from previous Pikestuff kits ($\frac{1}{2}$ " styrene strip would also work). I glued $.080" \times .125"$ styrene strip along the bottom edge to tie the pieces together. I used plastic solvent cement to attach $.080" \times .375"$ strip behind the joint where the foundation meets the wall.



There were a few corner joints that had gaps I wasn't happy with. To fix those, I used $.010"$ or $.015"$ styrene rod as appropriate. With the styrene in the gaps, I flooded the joint with plastic solvent cement. This melted the styrene rod, filling in the gaps. Once the glue dried, I used a sanding stick to blend the styrene with the adjoining plastic.

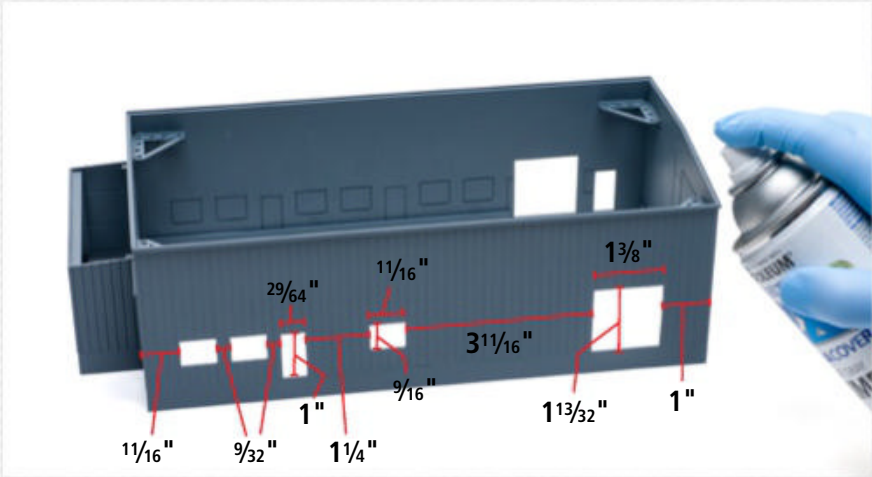


I made the bump out for the truck dock using pieces from Pikestuff's Truck Terminal kit. The openings are sized for doors and weather bellows in the Walthers Truck and Railroad Docks kit (no. 933-4070). The $.060" \times .100"$ styrene strip supports the roof, which I fashioned from left-over Pikestuff corrugated roof material.



Next I assembled the roof halves per the instructions. I added the two ridge roof ventilators, supplied with the enginehouse kit, as shown. I mistakenly removed the upper molding for the gutters on the end walls (I had the instructions for a few Pikestuff kits on my workbench – I looked at the wrong one!) To remedy the mental lapse, I applied $.040" \times .060"$ styrene strip.

STEP 3 PRIMING AND PAINTING



With the building and roof sections completed, I washed the parts in warm water with dish soap added. This removed dust, skin oils, and other impurities that may affect paint adhesion. Once dry, I primed the building and roofs with Rust-Oleum Painter's Touch 2X Flat Gray Primer.



I let the primer dry for 24 hours. Then I used Flat White (no. 249126) from the same Rust-Oleum line to paint the building and dock roofs. Don't forget to paint the underside of the roof where it will be visible along the edges of the truck dock and by the personnel door.



The truck scale and bridge plates, which both have diamond-tread pattern, and the open-grate platform have finer detail that I wanted to preserve. Though the Rust-Oleum primer probably would have been OK to use, I opted for Tamiya Surface Primer L for these parts.



I used a variety of Vallejo Model Air acrylic paints, noted in the materials list below, to paint the building and details. As shown above, I used Concrete on the foundation. I painted the corrugated metal walls Light Sea Blue.

Materials list

City Classics

209 Corner braces

Evergreen styrene strip

155 .060" x .100"
166 .080" x .125"
371 .080" x .375"
409 .250" x .250"

Pikestuff

541-1010 Concrete staircase
541-1114 Staircase handrails
541-0008 Enginehouse
541-5001 Truck Terminal

Rust-Oleum spray paint

1917 Khaki (Camouflage line)

249088 Flat Gray Primer

249126 Flat White

Tamiya

87064 Fine Surface Primer L
TS-82 Black Rubber

Tichy Train Group

8001 Open-grate platform with handrails
8011 Brackets

Vallejo Model Air and Model Wash

70.520 Matte Varnish
71.001 White
71.062 Aluminum
71.072 Gunmetal
71.089 Light Sea Blue

71.122 Desert Tan

71.131 Concrete

71.135 IJA Chrome Yellow

76.516 Gray (Model Wash)

76.518 Black (Model Wash)

76.521 Oiled Earth (Model Wash)

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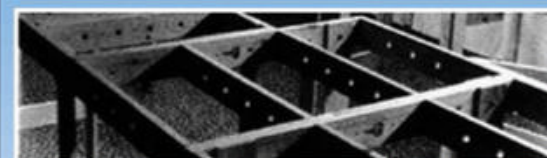


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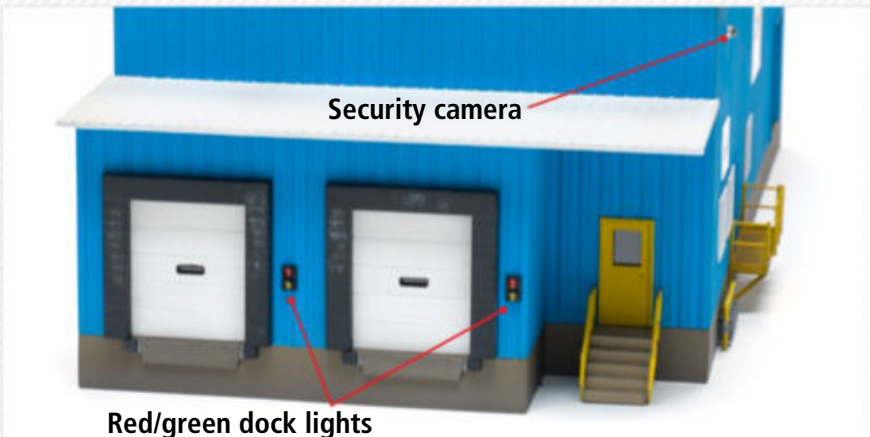
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STEP 4 DETAILS



The full-size warehouse has a covered platform by the truck scale for drivers to exchange paperwork with the office. Pinched for space, I used Tichy Train Group's open-grate platform with handrails instead. I placed two brackets under the platform.

When studying prototype images, I noticed gas meters on the scale side of the building. I found these in the Walthers Modern Electrical Gear kit (no. 933-4075).

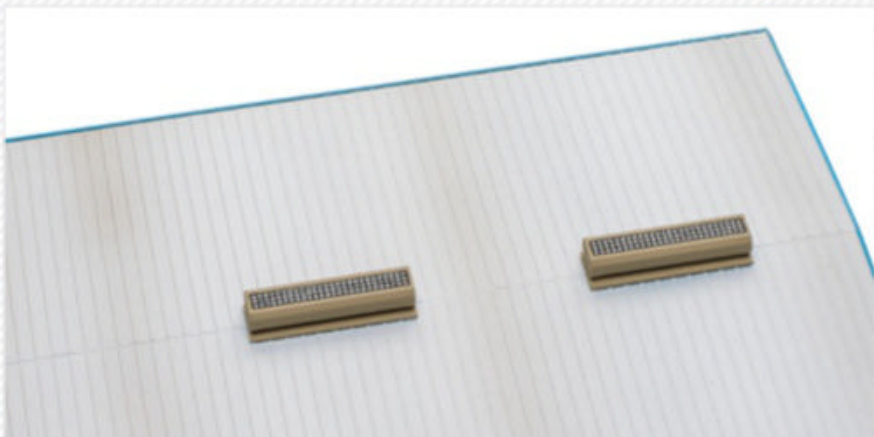


Red/green dock lights

The roll-up doors, weather bellows, and bumpers/dock leveler are from the Walthers Truck and Railroad Docks kit. I painted the doors Rust-Oleum Flat White, the bellows and bumpers Tamiya Black Rubber, and the dock leveler Vallejo Gunmetal. The red/green dock lights (modified) and dome-style cameras are from Walthers kit 933-4074.



Though it will be somewhat obscured by the hallway window frames, I wanted to include a truck scale. I used the small scale included in the Walthers Truck and Rail Scale kit (no. 933-4068) for this. I shortened the weigh-bridge and base by one panel each using the molded cut lines on the underside of those parts and the curbs by two lengths each. I painted the base with Rust-Oleum Khaki and the weighbridge Vallejo Gunmetal.



To make the ridge roof ventilators stand out, I masked the roof and airbrushed the parts Vallejo Model Air Desert Tan (no. 71.122). Once the paint had dried, I brush-painted the top with the same company's Aluminum (no. 71.062). To add depth to the casting, I applied Vallejo Black Model Wash (no. 76.518).

STEP 5 FINISHING TOUCHES



To weather the building, I used an airbrush to apply Vallejo Gray and Oiled Earth Model Wash. I found 20-25 psi the ideal pressure for spraying the weathering washes. The manufacturer says dry time is around 20 minutes, but to be safe I waited a few hours before overcoating the washes with Vallejo Matte Varnish.



Finally, I asked Trains.com associate producer Ben Lake to make signs for the building. After printing the signs on a color printer, I attached the paper to a piece of .015" styrene sheet with 3M Super 77 spray adhesive. Once the individual signs were cut, I attached them to the building with Micro-Mark Liquid PSA. 



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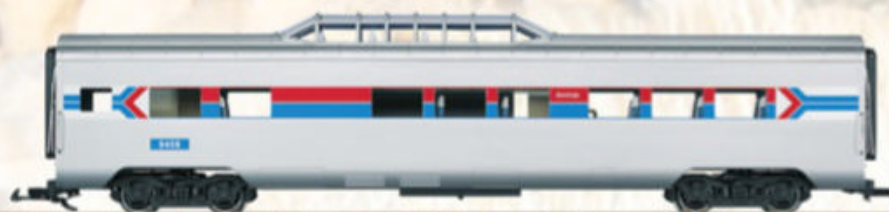
21580 / 21582 F7A Diesel Locomotive (different road numbers)



36601 Coach Passenger Car (#4813)



36600 Baggage Car



36603 Vista Dome Car



36602 Coach Passenger Car (#4817)



36605 Observation Car

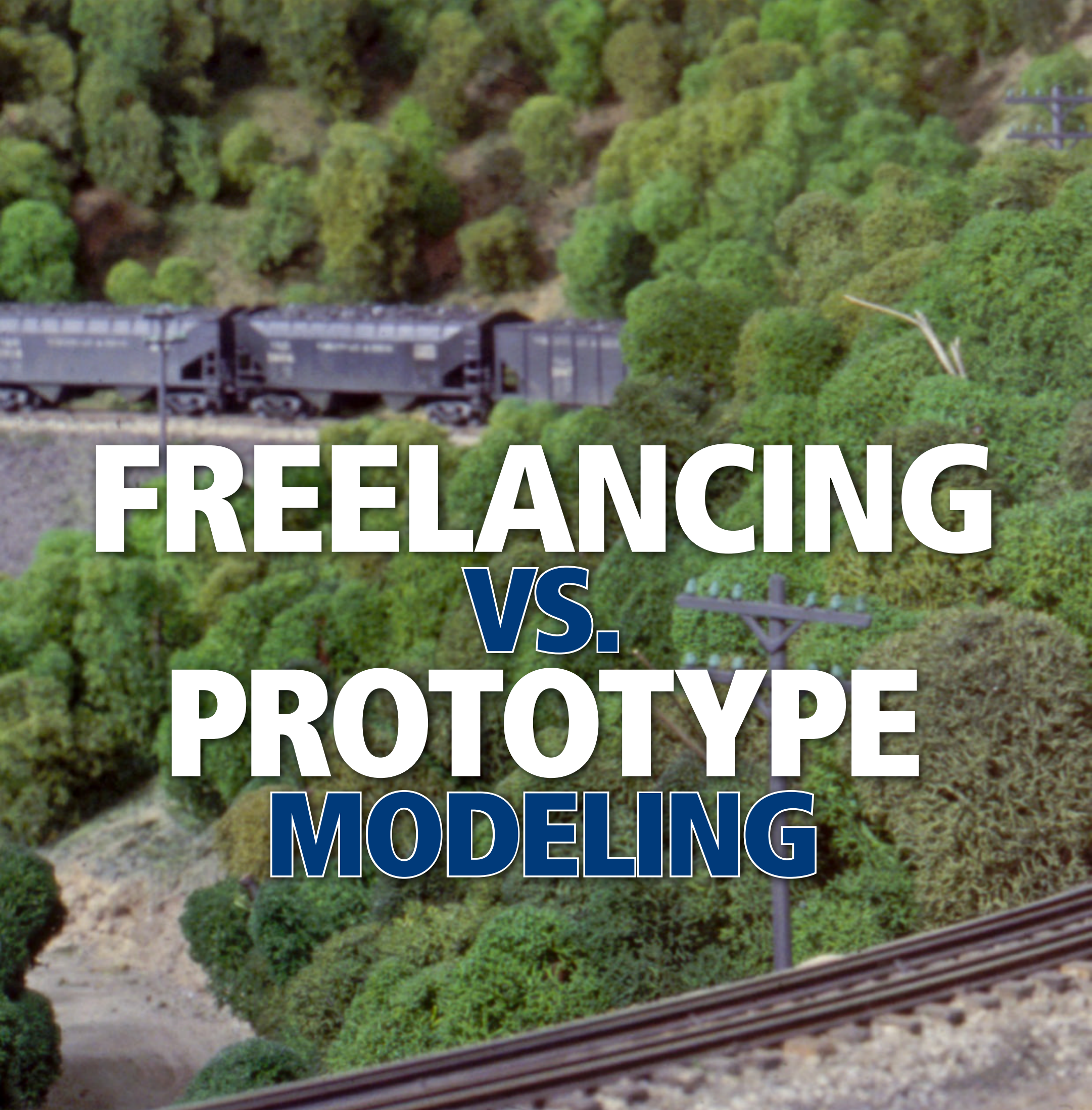


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FREELANCING VS. PROTOTYPE MODELING

Both offer advantages and disadvantages; both remain popular

By Tony Koester

Photos by the author except where noted

Those who are just venturing into model railroading have enough decisions to make without worrying about refining their rosters to model a specific prototype railroad or even one that reflects the characteristics of a specific region. But as one's knowledge of full-size railroading matures, he or she begins to notice that many model railroads are indeed based on one prototype, or they are what we

call prototype-based freelanced railroads – proto-freelanced, for short.

In the latter case, one bases the physical characteristics of his or her railroad on those of a narrowly defined set of prototype (full-size) railroads in a given region – central Appalachia, New England, the Southeast, and the Pacific Northwest, for example. The idea is for the mythical railroad to look so much like its full-size counterparts that one



can easily assume it actually existed in 12"-to-the-foot scale. Indeed, I recall hearing about modelers who traveled to the Virginias and were very disappointed to find no traces whatsoever of Allen McClelland's Virginian & Ohio!

Prototype-based freelancing

I've built basement-sized HO railroads of both types. Before the concrete

floor was poured in our under-construction home back in early 1973, I was already sketching out the right-of-way of the proto-freelanced, HO scale Allegheny Midland – the Midland Road – in the sand. It was my first home layout of any size or sophistication, but I was entirely confident that I could “get there from here.” That was due to a large degree to visits to see Allen McClelland's original HO Virginian & Ohio and Jim

The original master of showing us how to create a plausible freelanced railroad using “everyday” models was Allen McClelland. The Virginian & Ohio rostered Athearn plastic F units and Geeps but looked every bit the part of a workaday Appalachian coal hauler.

W. Allen McClelland photo



Tony's Allegheny Midland (the Midland Road) connected his favorite prototype, the Nickel Plate Road, with McClelland's V&O. It depicted various eras from the late 1970s back to the 1950s and lasted for 25 years before being replaced by an NKP layout.

Paine's Durham & Southern in the Dayton, Ohio, area.

The gold spike wasn't driven until 1980, the result of a busy job (I edited *Railroad Model Craftsman* at the time), handlaying every inch of visible track, and learning how to fly sailplanes and teaching others how to do so on warmer weekends. When regular operating sessions commenced, there were a number of gray-primer locomotives

bedecked with nothing more than decal road numbers.

Slowly, the roster of properly painted and lettered equipment grew. The lesson I learned was to get most of the roster ready for prime time before work on the railroad commenced. Not helping things was my decision to keep the railroad relatively up-to-date to ensure RMC readers were also being kept up to date on what was happening on the full-size railroads.

When I left RMC for Bell Labs in 1981, that need went away, and I decided it was time to go back to my original goal, which was to operate the railroad in the steam era. Dynatrol had a very good steam exhaust sound system, and Key Imports was producing an excellent line of Nickel Plate Road Mikados and Berkshires as well as Chesapeake & Ohio articulateds. The Midland Road was clearly an amalgamation of the rosters and structures of those two railroads, so it was an easy and plausible decision to make.

The era therefore shifted back to 1957, the last year a timeline chart I made showed the NKP still ran steam in southeastern Ohio, where it connected with the northern end of the AM. The Nickel Plate also took delivery of EMD SD9s and Alco RSD-12s that year. This gave me enough roster latitude to add some Atlas RSD-12s as well as RSD-4s to the AM roster.

One of the primary pitfalls of freelancing is succumbing to the one-of-these, one-of-those temptation. By modeling your roster after a base prototype, you'll avoid most of the clangers. That's especially true for first-generation diesel paint schemes, as most were designed by a handful of stylists at Alco, Baldwin, and especially EMD. Each had their individual characteristics, so the less creative and the more plagiaristic you are with your freelanced livery, the better. Better still, you may be able to modify a factory paint scheme or use a commercial decal set to this end.

Prototype modeling

British modeler Brian Moore, who models "a chunk of" the Southern Pacific's Coast Division centered around Guadalupe, Calif., in 1954, points out that prototype modeling is always a compromise in some way. "I'd probably always compromise some aspects of appearance because my primary interest



Bill Darnaby's Cleveland, Indianapolis, Cincinnati & St. Louis – the Maumee Route – is based on a rock-solid foundation of prototype knowledge and practices. Bill chose to freelance when he found that he couldn't obtain steam power for his favorite prototype in the most interesting operating era. Here's No. 57 westbound leaving Avoca, Ohio. Craig Wilson photo



World-famous Tehachapi Loop is the centerpiece of the La Mesa Club’s HO railroad at Balboa Park in San Diego, Calif. Tony rates it as the finest expression of prototype modeling in terms of both scenery and operation to be found anywhere. Don Mitchell photo

is running actual trains in a reasonably realistic setting.”

But it’s important to get key elements right, he adds. “The Guadalupe depot is a ‘signature’ model; by modeling it accurately, people won’t look so much elsewhere for compromises.” You can take Brian’s advice to the bank: Focus on key elements, and don’t spend time on lesser aspects that can consume vast amounts of research and modeling time with little promise of paying equal dividends.

After a quarter century of prototype-based freelancing, I decided it was time to pay homage to my favorite railroad. So at the turn of the century, the

Allegheny Midland was dismantled. Frank Hodina drew plans for a double-deck HO railroad representing the Nickel Plate Road’s Third Subdivision of the St. Louis Division from Frankfort, Ind., to Charleston, Ill., which filled the same basement and a little more, as it usurped the back 9 feet of our garage.

A timeline I had prepared showed that 1954 was the year that Alco RS-3s – my favorite B-B hood units – were delivered and steam was gone from that division by the next summer. So the fall of 1954 was chosen to capture the last fall grain rush with steam power. Making timeline charts showing when key events

occurred, especially when certain locomotives debuted or were retired, is probably the most important first step the proto-freelancer or prototype modeler can take.

By setting the railroad in autumn 1954, I had established limits on my spending. I could acquire 1955 vehicles, as new cars and trucks appeared in showrooms in late summer or early fall. But I couldn’t add Pullman-Standard PS-2 covered hoppers, as they first appeared in 1955. The NKP’s first GP9s showed up in the summer of 1955, ending steam’s reign west of Frankfort in July, so they were off the table. Alco

NKP ST. LOUIS DIVISION TIMELINE														
EVENT	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
MARS LIGHTS ON 2-8-2s, 2-8-4s	••••	••••	••••	••••	••••									
STEAM TO PEORIA	••••	••••	•••											
STEAM TO ST. LOUIS	••••	••••	••••	••••	••									
GP7s			••	••••	••••	••••	••••	••••	••••	••••	••••	••••	••••	••••
RS-3s				•••	••••	••••	••••	••••	••••	••••	••••	••••	••••	••••
GP9s					••	••••	••••	••••	••••	••••	••••	••••	••••	••••
RS-11s						••••	••••	••••	••••	••••	••••	••••	••••	••••
NEW NKP PAINT SCHEME									••••	••••	••••	••••	••••	••••
NOS. 9 AND 10	••••	••••	••••	••••	••••	••••	••••	••••	•					
GP18s										••	••••	••••	••••	••••
BAY-WINDOW CABOOSES												••••	••••	••••
RS-36s												••••	••••	••••
GP30s												•	••••	••••
GP35														••
C-420														••

Making a timeline chart like this one is a key step for both proto-freelancers and prototype modelers to determine what year key events such as when certain locomotive types debuted or were retired took place. Tony’s chart showed that 1954 was an excellent choice. Each • symbol represents a quarter-year (three months).



Mike Burgett is a professional railroader but enjoys reliving an earlier time on the Chesapeake & Ohio's James River Line in HO. Here SD35 no. 7426 leads two mates and a long string of hoppers past Mitchell's Dry Goods along U.S. 501 at Waugh, Va. Craig Wilson photo

RS-11s were also unavailable, as they debuted in 1956.

(Full disclosure: Several of Athearn's gorgeous Genesis GP9s in NKP's as-delivered paint scheme are on the roster, as many of today's modelers can't tell a GP7 from a GP9 anyway, especially during a busy operating session when they're used in multiple-unit consists.)

Such roster limitations are perceived as an advantage for the prototype modeler, as it "bookends" one's roster and hence purchases. But the same principles apply to prototype-based freelancing. Obviously, the anything-goes freelancer has no such limits, and indeed that is seen as an advantage by some and a concern by others.



Pennsylvania RR Extra 1122 East is what the PRR called a "mineral train." It originated at Mingo Junction, Ohio, to move coal from southern Ohio mines to the mills around Pittsburgh. The engine is just clearing Weirton Junction on Bill Neale's HO tribute to the PRR's Panhandle Division. The L1 2-8-2 is a rebuilt PFM brass model; the tower was scratchbuilt by a friend to ensure the proper PRR setting. Craig Wilson photo

'Almost' railroading

Perhaps the strongest argument in favor of prototype-based freelancing is that it lets you get very close to a specific goal without actually having to reach it. If your favorite railroad had most of the features you most admire but lacked a few you wished it had, you can bend reality just a tad by including them. Perhaps an industry went out of business a few years before the year that otherwise seems ideal to model. Maybe they had a passel of Geeps but never bought an SD and you admire six-motor power.

You can keep the prototype road name up to a point, but at some juncture you reach a breaking point. In my case, the NKP had Alco RS-3s and RSD-12s, so adding some RSD4s or -5s to the fleet wouldn't have been a big stretch. But extending it 200 miles into West Virginia probably would have been, hence the subsidiary Midland Road. Now that I'm actually modeling the Nickel Plate, there are only very small such transgressions.

No right or wrong

If you've been looking for a right way to approach scale model railroading, you won't find that advice here. I know some very bright folks who model specific prototypes, and I know some equally sharp people who are devout prototype-based freelancers. All of them seem to be having a delightful time.

I just had a conversation with one of the best-known freelancers about what he'd do if the very real possibility of a relocation comes to fruition. Like me, he has long had a favorite prototype, but when he built his freelanced railroad, it wasn't practical to model it in the steam era when traffic density was high. So here's a chance to do just that, I assumed. I assumed wrong.

"I really like my railroad," he told me. Job one would therefore be to find a new basement with a similar footprint that would accept the extant railroad with minimal modification. It's not that he wouldn't like to model his favorite prototype. Rather, it's that he has done such a good job creating a "new prototype" that he sees no reason to walk away from that.

Put another way, done well, prototype-based freelancing is a form of prototype modeling! So you really don't have to worry about making a choice. But you do have to be concerned about doing a good job once you make the choice. 



Proof of the pudding: comparing the modeled scene with the prototype, here a November 1952 photo of train 72, the daily eastbound *Coast Mail* at Guadalupe, Calif. (top), and Brian Moore's fall 1954 version (bottom). Like most British modelers, Brian has to do more with less; see *Model Railroad Planning 2020*. Prototype photo, Dallas Gilbertson; model photo, Brian Moore



Maumee Route caboose 1015 is labeled for the Youngstown Division it is assigned to. The slogan and letterboard stripe hint at Bill Darnaby's knowledge of Midwestern railroad practices, here the Nickel Plate Road High Speed Service slogan and gray stripe. Bill Darnaby photo

After a cross-country move, the N scale UP Geneva Subdivision is reconstructed and expanded

By **Daryl Kruse** • Photos by the author

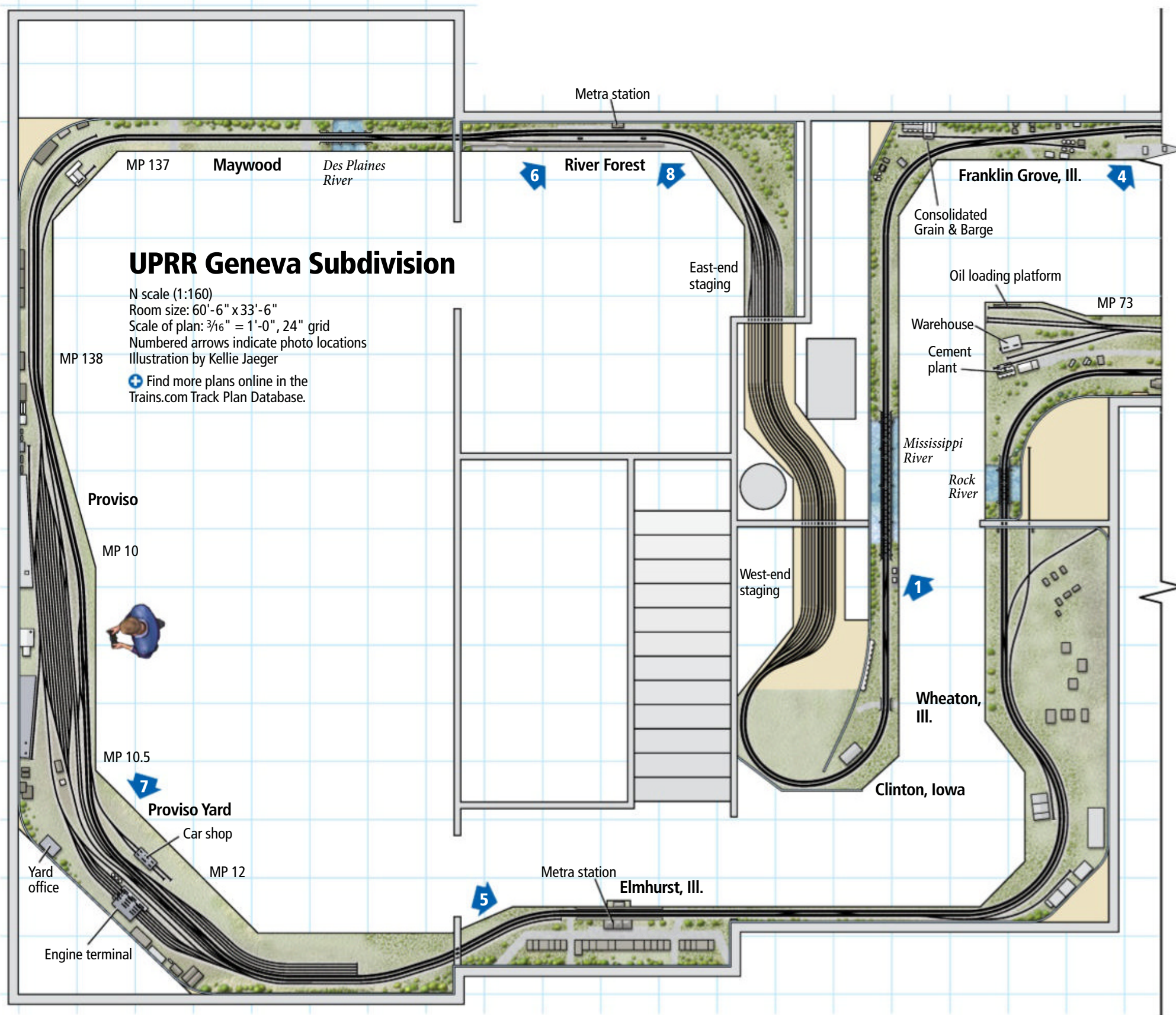


From Rochel



1 Union Pacific no. 6463, a General Electric AC44-CW, leads a double-stack train over the Mississippi River on Daryl Kruse's N scale Union Pacific Geneva Subdivision. This signature scene is one of several Daryl moved from his previous basement in northern Illinois to his new Georgia home to build the new Geneva Sub.

le to Atlanta



I fell in love with Midwestern railroad-ing while living in Rochelle, Ill., from 1997 to 2014. Rochelle is home to both the Union Pacific and BNSF railroads, which cross each other at grade there. A major intermodal facility, UP Global III, is just one of the railroad-served industries in Rochelle, along with several large warehouses.

Best of all, on average more than 100 trains a day passed through the city. I could always count on seeing multiple trains whenever I visited the main line. Rochelle is a great place to be a railfan. It's even better for someone modeling the Union Pacific main across northern Illinois, the Geneva Subdivision.

The 140-mile Geneva Subdivision runs from Chicago to Clinton, Iowa, through mostly flat suburbs, farmland,

and small midwestern towns. My N scale Geneva Sub includes the Chicago suburb of River Forest, Maywood, Proviso Yard, Elmhurst, and Wheaton. It then skips 45 miles and picks up again just east of Rochelle and continues through Rochelle, the Global III intermodal yard, Franklin Grove, the Mississippi River bridge, and finally Clinton.

Move to Georgia

The first six years of construction began while we lived in Rochelle (see the September 2016 MR). A job move in 2014 required dismantling, relocating, and reassembling the layout in our new home in Georgia. Thanks to some good planning before construction, I was able to cut the layout into 8-foot sections and

carefully pack the pieces for the moving van. The 11 sections made it to Atlanta in great shape, and after some remodeling and preparation in the basement, the layout came back together without issue.

Our larger basement in Georgia allowed me to expand the layout. I was able to add the towns of River Forest, Maywood, Elmhurst, and Wheaton, as well as expand Global III. The town of Fulton was eliminated from the layout.

The layout is a continuous loop of double-track main line with an 11-track staging yard connecting the west end of the layout to the east end. Operating sessions begin with five eastbound trains and five westbound trains.

After a train makes its run across the modeled layout, it returns to staging and is ready for the next session. It can also

The layout at a glance

Name: UPRR Geneva Subdivision

Scale: N (1:160)

Size: 60'-6" x 33'-6"

Prototype: Union Pacific

Locale: northern Illinois

Era: 2014

Style: walkaround

Mainline run: 250 feet

Minimum radius: 36"

Turnouts: no. 10 (main), no. 8 (secondary and yards)

Maximum grade: 0.5 percent

Benchwork: open grid

Height: 55"

Roadbed: $\frac{3}{16}$ " cork (main), $\frac{1}{8}$ " cork (secondary and yards)

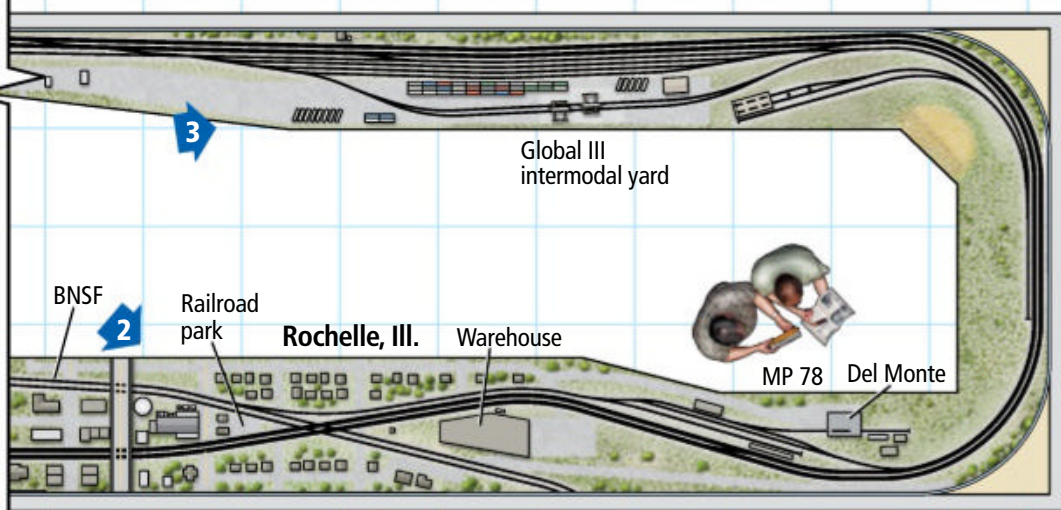
Track: Micro Engineering code 55 flextrack with handlaid turnouts

Scenery: plaster on screen wire

Backdrop: styrene deck flashing roll with photos

Control: Digitrax

Digital Command Control



be run a second time, if time and manpower permits. Trains also originate and terminate at the Proviso Yard, so trains can run from the staging yard to Proviso and vice versa.

The Geneva Sub is fully signaled using a variety of signals from various manufacturers. Searchlight signals are used throughout. At some point, I plan to switch over to hooded signals, which are more prototypical for the Geneva Sub. Signals are controlled through Centralized Traffic Control (CTC) and a dispatcher. However, when our crew is smaller or I operate solo, I swap the signals over to "automatic" and dispatch on the fly.

The commuter district

Heading westbound on the Geneva Sub, the 250-foot main line begins on elevated tracks through the River Forest Metra commuter station. A main feature of the prototype is a shallow underpass and retaining wall along Hawthorne Avenue. The tunnel through the retaining wall allows passengers to walk from their parked cars under the tracks and up to the middle passenger platform.

From the Metra station, the main line runs through the forest preserve and a hole in the wall. The forest hides the hole in the wall with tall trees on both sides. Mirrors on both sides complete the illusion. Once through the forest preserve, the main line continues across the Des Plaines River and into Maywood, Ill., which has a small Metra platform as well as a street along the tracks, two road crossings, and some storefronts.

From Maywood, we continue past a few industries to Proviso Yard. Proviso is a major yard on the prototype (though less so recently) as well as on my N scale

layout. There's an 11-track classification yard that holds 125 cars, two arrival/departure tracks, a foreign power track, a car shop, yard tower, warehouses, and major engine facility. I made quite a few photo research trips to Proviso and have modeled the structures and track layout as faithfully to the prototype as I could.

Three trains originate and three trains terminate at Proviso. There are two yard switcher sets, one for each end of the classification yard. The yard crews also take care of any local switching for the warehouse, car shop, and other industries around Proviso. The yard can keep three people busy during an operating session, or operations can be streamlined, with limited switching of the yard.

West of Proviso, the main line heads through another hole in the wall and into the city of Elmhurst. The hole this time is concealed with trees on one side and a highway overpass and mirror on the other. There are no industries served in Elmhurst, but there is a Metra station in the middle of the busy downtown. The Metra station is a Kato kit modeled after



2 Rochelle, Ill., Daryl's former hometown and a favorite spot for railfans on the prototype, was Daryl's inspiration to model the Geneva Sub. Here, a BNSF Ry. manifest freight (foreground) waits for the Union Pacific to clear the quadruple diamonds seen behind the signal bridge.



③ At 20 feet long, the Global III intermodal yard is the biggest industry on the layout. The intermodal facility is big enough to have its own engine servicing terminal. Four trains a day stop here.

④ Daryl put a lot of research into intermodal yard operations to model Global III, and is particularly proud of the automated truck gate at the yard's entrance.





a station in Schaumburg, Ill. While not a complete match to the prototype Elmhurst station, it fits the locale and looks at home.

Down the line from Elmhurst is Wheaton. Wheaton contains the last Metra station on the layout, a commercial downtown, a residential area, a couple of industries, and a warehouse district. One manifest train a session stops in Wheaton to switch industries and the warehouse district.

There are three mainline tracks in Wheaton. West of there, the third track runs into a holding track, as this is as far as Metra trains run. The main line heads through yet another hole in the wall west of Wheaton, concealed by a bike path bridge on the Wheaton side and more trees on the other.



5 A Union Pacific manifest freight led by EMD SD70ACe no. 1995, the Chicago & North Western heritage unit, rolls through Elmhurst while a Metra train picks up passengers. The station is a Kato kit based on the Metra station in Schaumburg, Ill.

Into the prairie

The hole in the wall just west of Wheaton represents 45 miles of unmodeled distance as the main line transitions from suburban Chicago to rural northern Illinois. Trains head across the Rock River and travel through Rochelle, a small town with tons of railroad action. As the signature location of the layout, Rochelle has a great deal of benchwork devoted to it. The city is 24 feet long and covers close to 30 square feet. It includes an industrial area, lower downtown, the 7th Street overpass, a water tower, power plant, residential area, and a warehouse district, in addition to the area's well-known railroad park.

Rochelle also includes a portion of the BNSF main line with the four-diamond crossing and the BNSF/UP interchange yard. A local BNSF switcher transfers cars to and from the interchange yard and local industries. Two manifest trains a day stop in Rochelle to drop off and pick up cars at the interchange.

One of my favorite sections of the layout is the Global III intermodal yard. Global III is 20 feet long, which is enough room for a locomotive service facility, classification yard, loading area with two cranes, and more than 7 scale acres of paving. During operating sessions, one or two operators work Global III. On the layout, trains don't terminate or originate at Global III. Four trains a

day stop there to drop off and pick up cars, as well as to swap motive power and crews.

I'm especially happy with the automated gate for trucks coming into or leaving the facility. I had a lot of fun researching intermodal gate operations for the Union Pacific and was able to get some useful prototype photos of the facilities.

Just west of Global III is Franklin Grove. Franklin Grove is typical of the many small Midwestern towns across northern Illinois. Included is a small neighborhood and a couple of railroad-served industries, Pitzer & Sons and Consolidated Grain & Barge. One train a day stops in Franklin Grove to drop off and pick up cars. The two industries have opposite facing turnouts on two different mainline tracks, so switching cars there can be a fun challenge, especially when the dispatcher is trying to get mainline traffic through the area at the same time.

Finally, the main line crosses the Mississippi River on a bridge built from scratch based on many pictures and measurements of the prototype. The model was built back in 2010 when the layout was still at our house in Rochelle. The bridge and river made the trip to Georgia in great shape and was quickly reinstalled in its new location.

The westernmost end of the Geneva Subdivision is Clinton, Iowa. In Clinton



6 A manifest freight switches tracks to take the main while an auto rack train holds the other track west of River Forest. The Geneva Sub is fully signaled. Signals can be controlled by the dispatcher or switched to automatic for solo operation.

7 Proviso Yard is the heart of operations on the Geneva Sub. Daryl made numerous research trips to the prototype in order to model it as faithfully as he could. The engine servicing area is a good place to show off the model railroad's diesel roster.





Meet Daryl Kruse

An N scale modeler for more than 50 years, Daryl Kruse's layouts have been featured in *Great Model Railroads*, *Model Railroad Planning*, *Model Railroader*, and other hobby publications. A retired educator, he and his wife, Patti, have four grown children and four grandchildren.

there is a major ADM plant represented along the backdrop, a highway underpass, and an abandoned passenger station. From there, the main heads into the west end of the staging yard.

The almost-present day

I am presently 12 years into construction on the Geneva Sub. I planned the railroad to represent "modern" railroading. However, things change rapidly on the prototype. The prototype Geneva Sub has changed quite a bit in the last 12 years. Changes include all new signal bridges in Rochelle and concrete ties on track 1. Global III has been shut down, Proviso Yard operations are almost completely shut down, and new locomotives have been added to the UP roster while older models retired. Rather than try to keep up with all the changes, I've locked the layout to summer 2014, which was when we moved to Atlanta.

This is the last time I'm moving a layout! The original Geneva Sub was built with the idea that it would be moved when I retired. But a sudden job move to Atlanta in 2014 moved up the relocation and has given me the opportunity to continue and expand the N scale layout in a bigger basement. The move and continued construction on the Geneva Sub have gone exceptionally well. However, when we move again in a few years to get closer to our children and grandchildren, I will not be moving the layout again. As I get older and my modeling skills decline, I will most likely just start over with a simpler layout in an easier-to-see scale, like HO or O. **MR**



8 Passengers wait on the platform at River Grove for the next Metra train to arrive while a pair of UP freights pass on the main. A stairway in the middle of the platform leads down to a pedestrian tunnel through the retaining wall.



A house or other structure that sits on top of the scenery, rather than in it, looks unrealistic. See how Gregg Condon gave this house and other structures realistic foundations.

FOUNDATIONS FOR STRUCTURES

Methods to help blend your building base into the scenery

By **Gregg Condon** • Photos by the author

Famed architect Frank Lloyd Wright said: “A house should not be on a hill; it should be *of* the hill.” The same is true of our scale model structures – they should be *of* the scenery, not sitting on its surface. Realism suffers when gaps appear between the base of a structure and the model terrain.

One fix for this problem is to set the structure on the layout, place scenery materials around it, and glue it in place. This isn’t an ideal technique because it locks the structure permanently to the layout. Plus, our scenery-building methods typically entail lots of water, and wooden or cardstock models can’t handle that.

The solution? Build each model structure a solid, flat foundation that will make it look like it is *of* the layout, not upon it – and that goes a long way to establish realism!

A model structure looks best when its base perfectly conforms with a surface that is built into the scenery. Here are four methods, with variations.

TRACING WITH MASONITE

Trace the base of the structure on a sheet of tempered hardboard, cut along the lines, and glue the hardboard base to the layout using a foam-safe structural adhesive such as Liquid Nails for Projects. Some adhesives may cause the hardboard to warp, so it's best to weight it while the adhesive cures. Sidewalks or roadways can be included as part of the structure base. Before the structure is in place, the final layer of scenery is built up around the base. Care must be taken to not glue any scenery materials on top of the hardboard. While tempered hardboard has a good earth-tone color, I usually give the edges a quick burst of tan spray paint.



A piece of tempered hardboard has been cut to match the footprint of the coal shed (temporarily sitting beside it) and glued in place.

LAYING WOOD STRIPS

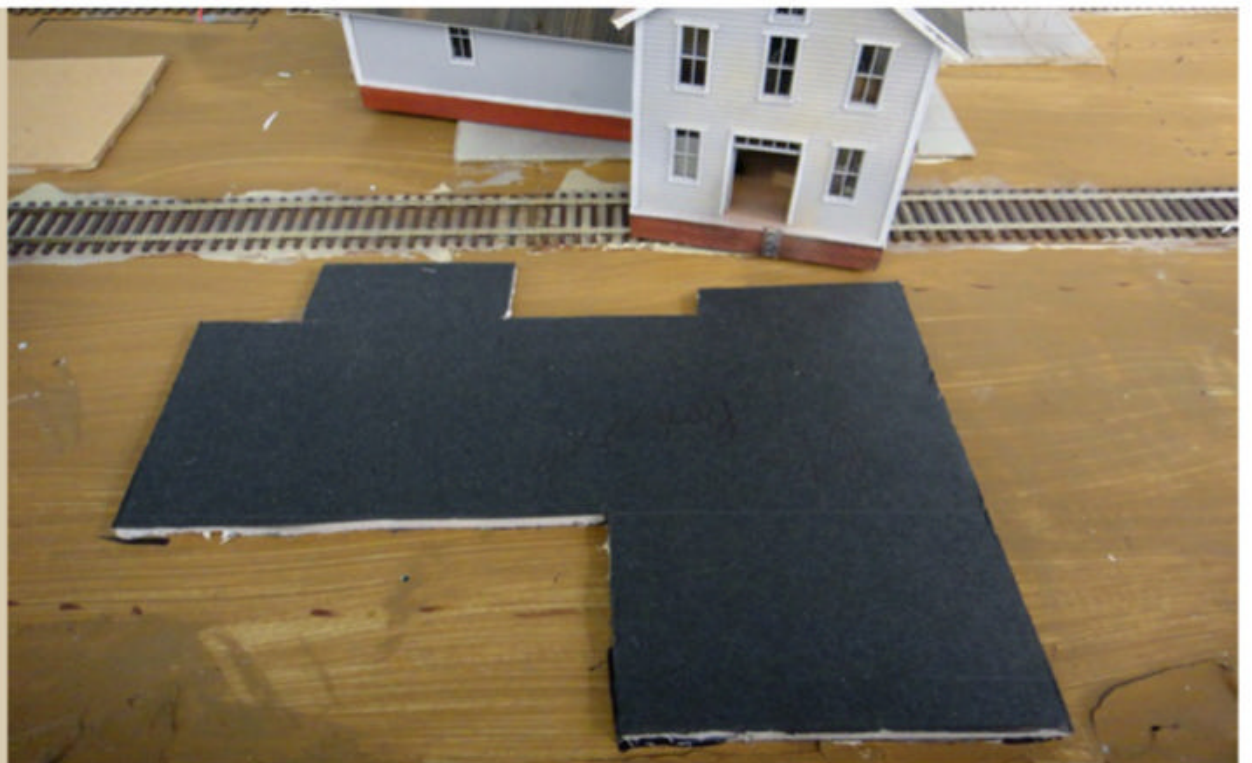
Place the structure on the layout. Trace the perimeter on the surface with a pencil. Then glue wood strips inside the pencil line. I commonly use $\frac{1}{8}$ " square balsa stripwood, but just as often I've used O or S scale ties. HO scale ties wouldn't be thick enough to stand above the ground cover layer. Paint the stripwood an earth tone so that the light wood doesn't show through the final scenery cover.



$\frac{1}{8}$ " square stripwood serves as the foundation of a barn.

CARVING FROM FOAM CORE

This material is used the same way as tempered hardboard. It's easy to use, as it can be readily cut with a carpenter's knife. I prefer foam core that has a black surface so there's no chance that a light color will peek out along the base of the structure. The center of foam core is white, so these edges should be painted a darker color before the scenery material is applied.



This foam core structure base has been cut to the shape of the factory above it.

Scenery tip

If **sidewalks or platforms** are part of the foundation, they should be finished before placing other scenery materials.

For concrete, a hobby knife can be used to carve expansion joints. Lighter, squiggly passes of the knife make cracks in the concrete. A quick pass of gray spray paint followed by a light application of weathering solution results in a good concrete appearance. The weathering solution can be made from denatured alcohol with a few brushfuls of black and gray paint. Fine weathering solutions are available from hobby dealers. Apply weathering materials sparingly. — Gregg Condon



STONework



This stone foundation features Chooch rubber rocks glued around the perimeter of a foam core base.

Place the structure on the layout and trace the perimeter. Lay scale stones inside the line. The stones, of course, must be perfectly flat on both top and bottom and of uniform thickness. I've used Dr. Ben's Baby Building Blocks, which I've not found recently.

I made a rectangular mold of $\frac{1}{8}$ " stripwood and cast long rectangles of plaster. When set, I broke the plaster rectangles in half lengthwise. Then I broke these pieces into smaller sections a couple scale feet long to simulate rough-cut stones. I glued these

stones down with their rough edges facing out.

A third method, seen in the photo above, is to make the structure base out of foam core with flexible rubber rock castings from Chooch (now Walthers) glued around the edge. **MR**

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Controlling your Walthers turntable with DCC



Allan Gartner installed this Walthers turntable on his HO scale layout. The turntable is operated with Digital Command Control using the Walthers Advanced Control Module. Allan shares tips this month to get the most from the device. Allan Gartner photos

The Walthers Cornerstone series of turntables with indexing is quite popular. Chances are if you don't have one, you want one. The control panel that comes with it works well, but did you know you have other options, including controlling it with Digital Command Control (DCC)? Digital operation is slick, inexpensive (about \$70), easy to hook up to your existing turntable, and can be implemented in about an hour.

The Advanced Control Module (ACM) from Walthers will work with DCC systems capable of controlling accessories (turnouts). Your system will need at least one throttle that you can set thrown/closed, on/off, 1/2, or whatever your system calls it, as needed. Systems where the throttle only allows you to toggle from the previous state won't give you the flexibility you may need.

Walthers' ACM, part no. 933-2321, can be used on Walthers turntable models 933-2618 (N scale 130 foot),

933-2860 (HO 90 foot), 933-2851 (HO 110 foot), or 933-2859 (HO 130 foot). These are recent models and have a blue control box, ①. If you have the older turntable with a gray controller, you'll have to buy a new turntable. This older model can't be upgraded.

Controlling the turntable with DCC is as simple as lining a turnout. In setting up the ACM, you'll associate turnout addresses with track numbers up to 99. For example, on my layout, address 201 moves the turntable to track 1. A turnout address "1 thrown" moves the head (end with the shack) of the turntable to track 1. A "1 closed" moves the tail of the turntable to track 1. I use 233 to rotate the turntable 180 degrees wherever it is. That's all there is to it! This is also easier and less error-prone than pushing the button on the Walthers turntable controller a bunch of times.

If you have a club layout that's open to the public, you

can hide the Walthers turntable controller and ACM out of the way of probing public fingers while still allowing club members to operate the turntable.

Wiring the ACM couldn't be simpler ②. You connect the ACM to your existing Walthers turntable controller with the supplied cable. Then you connect the ACM to your DCC track bus with two wires. The wiring for DCC control of your turntable is done.

All you need to do now is associate accessory addresses with your tracks. As delivered, the ACM has a jumper on two pins labeled DCC ENABLE. Move it to the pins labeled DCC LEARN.

Using your turntable's controller, move the bridge head end to track 1. Then on your DCC throttle, enter the address you want to use for that track and enter "thrown," "on," or whatever your system uses for accessory commands. In my case, I keyed in 201 and hit "thrown." The

turntable bridge will execute an "alignment jog" to acknowledge receipt of the command. Continue on in this manner with the rest of your tracks.

You also have the option of setting up an accessory address that will make your turntable do a 180 degree turn wherever it happens to be. To do this, move your



① **Blue box.** If your turntable controller doesn't look like this one, you'll need to get a new turntable and control box to use the Advanced Control Module.

turntable bridge to an unused position and enter the accessory address you want to use for this.

When done, take the jumper off DCC LEARN and move back to DCC ENABLE. That's essentially it. Test every track and make sure it works the way you intended.

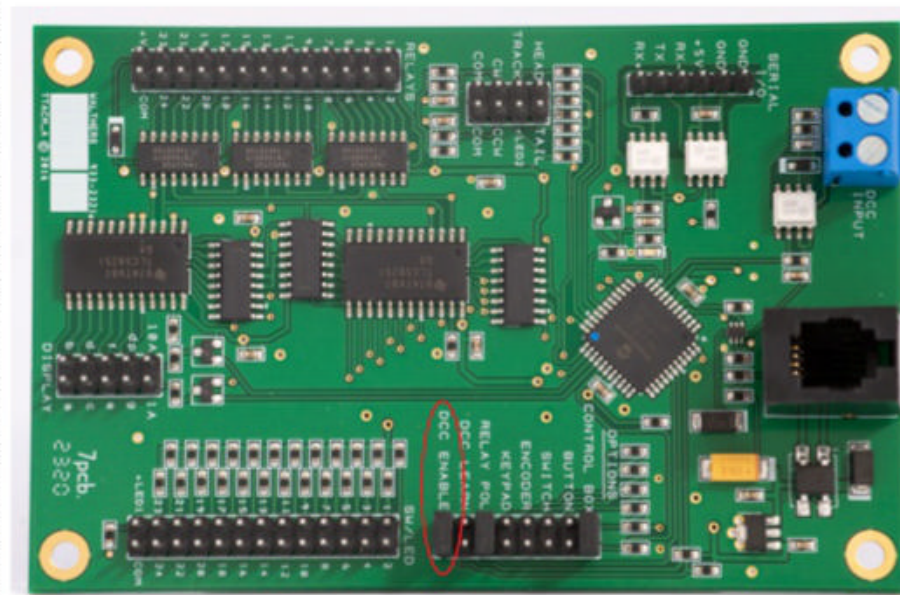
Be sure you don't have any devices on your DCC network that are sending the opposite turnout command to delete a track association. If you have any devices that do this, disconnect them while you are setting up your ACM.

I initially tried to use addresses 1001 to 1033. I observed the jog I expected for each address, but when I was done, I had several addresses that didn't work. I tried several times. Each time, it appeared to take the address and gave me the jog, but didn't work in the end.

After contacting Walthers, I figured that something was sending a closed command while in learn mode. I tried to figure out where these phantom commands were coming from, but couldn't. I also thought about using a different DCC system to set up the ACM, but figuring most people don't have multiple DCC systems, I tried a different address range. I found 201 to 233 worked just fine.

There are a few other details you should be aware of. Your track numbers don't have to be in order. If you do change things with your turntable such as adding a track, you'll have to cycle the power to your ACM to pick up the new track numbers. You'll also have to teach your ACM the new track.

If you add a new track between an existing track and decide you want all your track numbers to be sequential,



2 The Walthers Advanced Control Module. Just hook up your track bus to the blue terminal block and plug in the cable to the turntable control box. You're done wiring for DCC control. Note the jumpers for DCC ENABLE and DCC LEARN.

you'll have to re-teach your ACM all the changed track numbers.

The ACM has a lot of other non-DCC capabilities. They can be used in conjunction with DCC control or instead of DCC control.

You can control the turntable with an Arduino, a Raspberry Pi, or any computer. You can control the turntable with up to 24 switches – one for each track. Perhaps you have an old turntable that you controlled this way. You can adapt these controls to your Walthers turntable. You can also use rotary switches, encoders, or even a keypad where you key in the track number.

Finally, you can make a control panel of your own choosing that mimics the buttons on the Walthers controller.

The ACM can drive up to 24 light-emitting diodes (LEDs) to identify your stall tracks. You can put in a two-digit display to indicate your stall tracks, just like the one that comes with

your turntable controller. You can put the display in your own panel.

The ACM has 24 low-power outputs that can drive relay cards. Each relay provides power to its respective track. I found relay cards with four relays at All Electronics (allelectronics.com). At \$8 each, this was by far the best deal I could find. You'll need a 5V power supply to power the relays. You'll also need to route the signals from the ACM's 26-pin connector to each of the relay cards. Of course, no one supplier had everything I needed. None of this is hard, but there are more details than I can cover

in two pages here. See my website if you are interested in doing this.

If you want to see all the things you can do with the ACM, you can download the instructions from the Walthers website at walthers.com, or check the links on my website as mentioned at the end of the column.

The turntable installation is



3 Take note. Mark your connector so you know which terminals get DCC track power (DCC) and which ones get power to operate the turntable (PWR).

fairly straightforward. I just offer the following tips if you don't already have your turntable installed.

Neither the turntable nor the four-pin green connector is labeled as to which terminals get DCC power and turntable power. This can easily be figured out when the turntable is upside down and you reference the photo in the turntable instructions. Mark your connector right away. **3**.

When attaching the DCC track bus to the turntable bridge, there's no way to know the track polarity. If a locomotive shorts leaving the turntable, reverse the wires going to the turntable.

On your layout, mark the circle for the turntable pit, the home sensor location, and – most importantly, before you do any sawing – the locations for the anchor screws around the perimeter. If you don't, you'll lose your center reference point when you cut out the turntable opening.

At this point, you should be all set. Enjoy!

For all the links in this column, as well as wiring turntable tracks, go to my website at: WiringForDCC.com/dcc_currents.htm. 



YOU ALSO HAVE THE OPTION OF SETTING UP AN ACCESSORY ADDRESS THAT WILL MAKE YOUR TURN-TABLE DO A 180 DEGREE TURN WHEREVER IT HAPPENS TO BE.
– ALLAN



Bachmann N scale NYC J-3a 4-6-4 Hudson

Bachmann's latest N scale locomotive is a classic. New York Central's J-3a Super Hudson, designed to lead the railroad's top streamlined passenger trains, incorporated all the best steam technology available to the Central's designers.

The result was an iconic locomotive that would epitomize the idea of steam power for generations to come. Bachmann's N scale replica of the locomotive is likewise impressive, with accurate dimensions, wire details, Digital Command Control (DCC) sound, directional light-emitting-diode (LED) lighting, a smooth-running drivetrain, and many separately applied details.

A thoroughbred. The New York Central's class J-3a 4-6-4 Super Hudsons, a batch of 50 ordered in 1935 and numbered 5405-5454, were built by Alco in 1937 and 1938. The order was unusual in that it came in the midst of the Great Depression, when passenger traffic on the NYC was in decline and revenue for large capital outlays was scarce.

There was a reason for the madness, though: NYC brass had seen the future, in the form of streamlined lightweight cars being rolled out on the Chicago,

Burlington & Quincy's *Zephyrs* and the Union Pacific's name trains. Although there wasn't a need for newer and better passenger power on the NYC at the time, management knew that when it did replace its aging heavyweight passenger car fleet, it wanted equally impressive power up front.

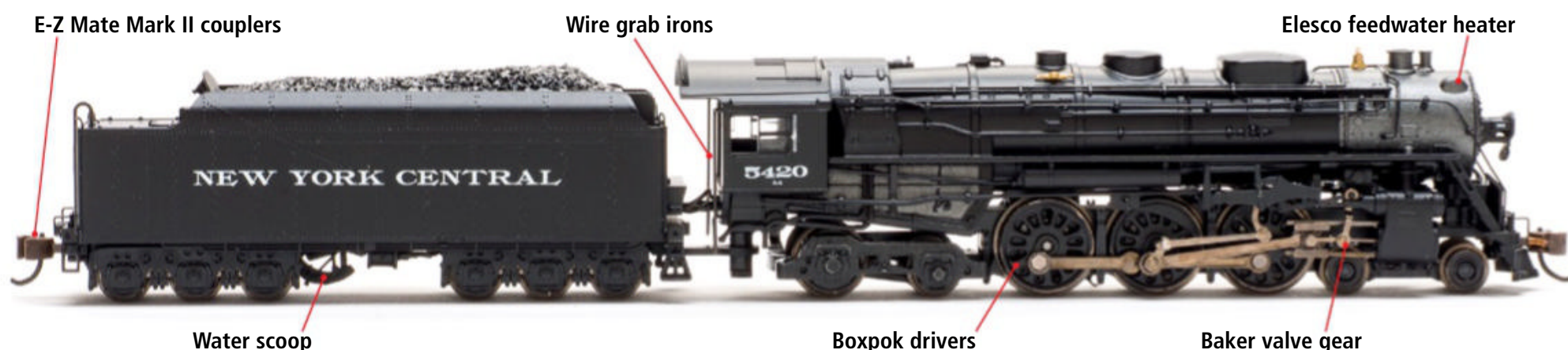
Buying Hudsons right away meant older locomotives could be demoted to branch line and freight service, where there was a need, allowing older engines to be scrapped. And NYC could afford to do so because of the generosity of Uncle Sam, who provided assistance through the Reconstruction Finance Corporation, a government stimulus program.

The order was also unusual in that all 50 locomotives were ordered at once, rather than a single demonstrator followed by small batches. The reason boiled down to three words: testing, testing, testing. The railroad had run plenty of tests on its class J-1 and J-2 Hudsons and applied to the class J-3's design all the latest technology: all roller-bearing wheels; a bigger combustion chamber; a conical boiler; and small, high-pressure cylinders. The result was an improvement to 4,275hp at 75 mph over the class

J-1's 3,900 hp at 67 mph. (In fact, the cylinders produced so much force that in some cases it bent the side rods, so working boiler pressure was reduced from 275 psi to 265.) Coal usage actually decreased compared to the J-1, also.

One place designers did skimp, though, was in equipping the J-3a with Elesco feedwater heaters, sometimes derided as "the poor man's feedwater heater." Starting in 1943, all 50 of the NYC's Hudsons were refitted with Worthington feedwater heaters. Bachmann's models bear Elescos, seen as a cylindrical bump-out on either side of the top of the smokebox. This places Bachmann's models roughly between 1937, when the first J-3a was delivered, and 1943. If you want to model a later version J-3a, Detail Associates makes a white metal Worthington unit in N scale.

Class J-3a Hudsons led the NYC's crack name trains, including the *20th Century Limited*, the *Empire State Express*, and the *Commodore Vanderbilt*. Some were demoted to less prestigious duties after World War II, when the lessons learned with the Super Hudsons was applied to a 4-8-4 design that would be dubbed the Niagara. But the J-3a



Bachmann's N scale New York Central class J-3a Super Hudson bristles with authentic details, including a water scoop under the tender. Our sample represents an as-delivered locomotive, with an Elesco feedwater heater and Boxpok drivers.

soldiered on through the end of steam, finally being replaced by first-generation diesels and retired in the mid-1950s. None survived the scrapper's torch.

A handsome model. In the subtitle of their book *Thoroughbreds*, railroad authors Alvin F. Staufer and Edward L. May call the NYC's Hudsons "the most famous class of locomotive in the world." While that point is arguable, the most famous Hudsons are the Dreyfus-styled streamlined versions that epitomize Art Deco locomotive design.

Bachmann's models are of the more common, workaday, unstreamlined version more likely to be seen on the typical model railroad. It may not be the one you see in movies, cartoons, and Art Deco posters, but to a steam connoisseur, it's still a handsome locomotive.

The molding on the die-cast metal boiler is impeccable, with fine rivets and boiler bands, separately applied piping and other details, and wire grab irons. The satin black paint is smoothly and evenly applied, and the white lettering on the cab and tender is crisp and opaque. I would have preferred for the cylinder fronts to have matched the prototype's shiny aluminum covers, and for the front handrails to be painted white like the full-sized locomotive's, but both are easily remedied with a bit of paint.

I found detailed, dimensioned drawings of the J-3A in the 1938 edition of *Locomotive Cyclopaedia of American Practice* (Simmons-Boardman). All the dimensions I checked on the model matched the dimensions of the drawing,



The fine lettering on the locomotive's front number plate and herald was crisp and legible under magnification.

PERFORMANCE CHARTS	
DRAWBAR PULL	.8 ounces 9 N scale passenger cars
SCALE SPEED (DC)	
VOLTS	SCALE MPH
8.5 (start)	<1
9	5.7
10	8.8
11	13
12	19
14.5 (max)	40
SCALE SPEED (DCC)	
SPEED STEP	SCALE MPH
1	5.5
7	72
14	124
21	154
28	156

from the overall length, width, and height to the driver wheelbase – the latter being quite a feat in N scale. The model is equipped with as-delivered Bopok drivers; over the years, some on the prototype were replaced with Scullin disc drivers.

Operation. As the N scale locomotive is equipped with a dual-mode Digital Command Control sound decoder, I tested it under both direct current (DC) and DCC. Under DC control, sounds came on at just over 5V. It started to roll at 8.5V, creeping along at a barely measurable .1 scale mph. Just as it had started slowly, it stayed in the low end of the speed curve throughout the voltage range, topping out at 40 scale mph at our power pack's maximum output of 14.5V.

In addition to the steam chuffs, which followed the expected four chuffs per drive wheel revolution, a bell sounded when starting under DC. When I reduced the throttle, a wheel squeal could be heard under the steam sounds.

The speed curve bent the other way under Digital Command Control. It started out at a workable 5.5 scale mph in speed step 1, but exceeded the prototype's maximum allowed speed of 75 mph by speed step 8. This would make the majority of the throttle range useless, so I put our NCE ProCab DCC system into programming mode and experimented with various settings for Configuration Variable 5 (CV5, also known as Vmax). I found that a setting of 64 gave the model a starting speed of 2.7 scale mph in step 1 and a top speed of 76 scale mph in step 28, with a nice, smooth distribution in between. I also programmed the locomotive's decoder address to the cab number, a simple task.

Facts & features

Price: \$439

Manufacturer

Bachmann Trains
1400 E. Erie Ave.
Philadelphia, PA 19124
bachmanntrains.com

Era: 1937-1943

Road numbers: As delivered, 5420 and 5426; later Gothic lettering, 5405 and 5445

Features

- Blackened metal wheelsets, in gauge
- E-Z Mate Mark II knuckle couplers, mounted at correct height
- Minimum recommended radius: 11.25"
- Reversing light-emitting-diode lighting
- Separately applied plastic piping
- SoundTraxx Econami Digital Command Control sound decoder
- Weight: 3.6 ounces (engine only), 5.1 ounces (engine and tender)
- Wire grab irons and uncoupling levers

Under DCC, I had a lot more control of the locomotive's sound effects. Function key 1 (F1) triggered the bell, while F2 played a toggled horn blast and F3 a short toot. While I could play a long-long-short-long grade-crossing signal with these two keys, I found that one was already programmed into key F9.

There were also some automatic sounds in DCC. I could hear the generator spin up when I pressed F0 to turn on the headlight, and rapidly decreasing the throttle played a rod-clank sound.

I tested the Hudson on our N scale Canadian Canyons layout. Pulling six heavyweight passenger cars, the Hudson handled the layout's Peco medium-radius turnouts, 13" curves, and 1.9 percent grade with nary a complaint.

A must-have for NYC modelers. If you're modeling the New York Central in the last two decades of steam, you just have to have a 4-6-4 or two. There's no getting around it. And if you don't model the NYC in N scale, Bachmann's N scale class J-3a Super Hudson might be enough to make you consider doing so. It's not only a faithful representation of the prototype, it's a good looking, smooth running, great sounding model. – Steven Otte, associate editor



Rapido Trains HO scale MLW M420 diesel

Rapido Trains is bringing the comfort, Canadian style. We recently received a sample of the company's new Montreal Locomotive Works (MLW) M420 locomotive, and it's a beauty, eh?

The prototype. When Alco locomotive production ceased in Schenectady, N.Y., in 1969, locomotives continued to be built in Canada by former subsidiary Montreal Locomotive Works until 1985. While MLW never offered its own version of the Century-series C-420, it did develop a 420 for its "M" line of Montreal-designed power.

The M420 used a 2,000-horsepower 12-cylinder 251 series diesel engine and AC traction. It also introduced the wide-nose Canadian cab (also known as the comfort or safety cab) to North American rails. One of the main features of this cab was a reinforced nose section to protect the crew in the event of a collision.

The model. Our sample from Rapido is painted in the CN zebra-stripe scheme and captures the look of the prototype well. As usual, there are hundreds of detail parts on the shell and underframe. There's also a detailed interior and a new feature – a replaceable nose door.

After carefully releasing the closed door from the model with the tip of a hobby knife, I installed an open door in its place. I had to scrape paint from the pins that hold the door in place so it would fit the holes molded in the body. If you enlarge the holes in the body, the closed door won't stay in place.

A feature I really appreciate is Rapido's wire and plastic handrails. The plastic

stanchions are well detailed, and the wire railings are sturdy and scale sized.

The model measured within scale inches of drawings in the *Car and Locomotive Cyclopedia Centennial Edition* (1974) from Simmons-Boardman. All of the paint was opaque and smoothly applied with sharp color separations. Lettering was likewise sharp, opaque, and legible down to the smallest type.

Because of all the detail parts on the model, I didn't try to remove the shell. An exploded-view drawing shows the model has a center-mounted motor with flywheels. The motor is concealed in a horizontally split die-cast metal frame. A motherboard is screwed to the top half of the frame, and an ESU LokSound V5 decoder plugs into that. A pair of downward-facing sugar cube speakers are in an enclosure mounted just ahead of the rear truck.

On the test track. I tested the locomotive on the MR staff's Milwaukee, Racine & Troy layout. The Rapido M420 put its 1-pound, 2.4-ounce weight to use, pulling 15 cars up the 3 percent grade. The burble of an Alco 251C is always popular, and the LokSound version sounds as good as expected.

Back in the workshop I measured a barely perceptible .5 scale mph speed at speed step 1 using our NCE PowerCab DCC system. Top speed was 61 scale mph, just a little below the prototype's 65 mph top speed.

Using direct-current from an Atlas train set power pack, it took 8.5V for the sound package to start up. At 10V, the locomotive started to move at .7 scale

Facts & features

Price: \$335 (DCC, sound), \$225 (DC, no sound)

Manufacturer

Rapido Trains Inc.
500 Alden Rd, Unit 21
Markham, ON
L3R5H5 Canada
rapidotrains.com

Era: 1973-1997

Road names: Canadian National stripes (8 numbers), CN red-orange cab and stripes (2 numbers)

Features

- Detailed cab interior with optional open front door
- Die-cast metal chassis
- Macdonald-Cartier knuckle couplers mounted at the correct height
- Metal handrails with plastic stanchions
- Operating headlights, rear lights, tri-color class lights, and illuminated cab control stand
- Weight: 1 pound, 2.4 ounces

mph, and hit 31 scale mph at 12V. The power pack's maximum voltage, 14V, produced 80 scale mph.

This is another well-detailed model from Rapido. The innovative handrails appear to be the company's new standard. The optional open door adds another feature that boosts realism without being a gimmick. Canadian National modelers hit the jackpot with this one. – *Eric White, senior editor*

Walthers HO scale Railgon gondola



A Railgon 53-foot gondola has joined the growing lineup of freight cars in the HO scale WalthersMainline product range. The plastic model, based on a Thrall prototype, features a mix of molded and separate, factory-applied parts; 36" metal wheels mounted on plastic axles; and body-mounted Proto-Max metal couplers.

The prototype. Railgon Co., a nationwide gondola pool, was formed as a subsidiary of Trailer Train in 1979. Its initial fleet of 4,000 cars was constructed by five builders: Thrall (310000-310999), Berwick Forge & Fabricating (320000-320499), Greenville (330000-330499), Bethlehem Steel Car (340000-340499), and Pullman-Standard (350000-351499). The gondolas were built between July 1980 and October 1981.

The WalthersMainline sample we received is decorated as GONX

no. 310502. The 1,000 Thrall cars have the class designation TSG10. Other classes are WSG10 (Berwick Forge & Fabricating), GSG10 (Greenville), BSG10 (Bethlehem), and PSG10 (PS).

Between 1984 and 1987, more than 600 cars from the TSG10 class were leased by the Seaboard System (500), Denver & Rio Grande Western (93), and Kansas City Southern (17). According to the January 2019 *Official Railway Equipment Register*, 364 gondolas from the GONX 310000-310999 series were still in service.

For additional information on Railgon, read *The TTX Story, Vol. 2* by James D. Panza, Richard W. Dawson, and Ronald P. Sellberg (Pennsylvania RR Technical & Historical Society, 2018).

The model. The gondola is part of the budget-friendly WalthersMainline series. The model has a one-piece plastic body

with a molded brakewheel platform, grab irons, and roping staples. The brake wheel is a separate, factory-applied part.

The car's interior has seams for the floor panels, beaver tail connection plates (these connect the bottom of the exterior posts to the crossmembers), bolster blocks, and body bolsters. The upper corners accurately feature the pin connection between the side and end top chords.

Underneath, the car has a one-piece plastic casting consisting of the draft-gear boxes, crossties and crossbearers, center sills, and body bolsters. The draft-gear boxes have separate, screw-mounted covers. The air reservoir, brake cylinder, and control valve are separate pieces tethered by molded pipes. A painted 1³/₁₆" x 4⁵/₈" steel weight is secured to the underbody with glue.

Measuring up. I compared the model to prototype drawings published in the



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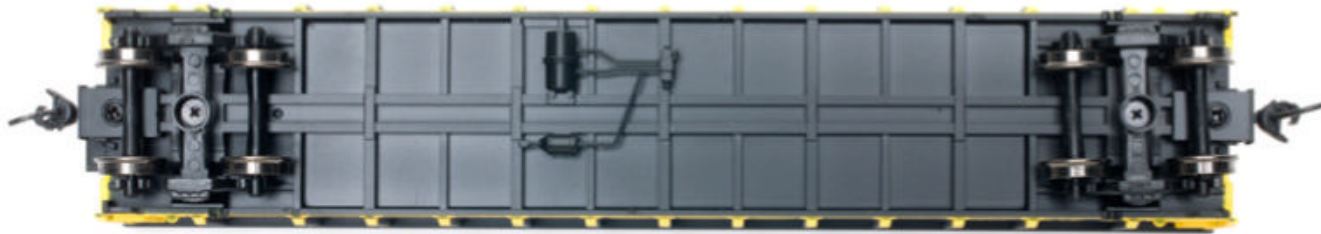
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The gondola rides on screw-mounted trucks and has Proto-Max metal couplers.

August 25, 1980, issue of *Railway Age*. The majority of the dimensions are spot on. The inside length and width are both off about a scale 6". This is typical on most open-top models.

The black and yellow paint is smooth and evenly applied, and the printing is legible. There was some minor yellow overspray at the outside corners where the side and end top chords meet.

The gondola weighs 3 ounces, which 1.7 ounces too light based on National Model Railroad Association Recommended Practice 20.1. Weights could be concealed under the car between the crossmembers and sills. The 36" metal wheels are correctly gauged, and the Proto-Max metal couplers are at the correct height.

I put the empty gondola in a train on our HO scale Milwaukee, Racine & Troy staff layout, which has nos. 4 and 6 turn-outs and 36" minimum radius curves. The car ran without incident while being pushed and pulled.

A rugged hauler. I'm a big fan of the Walther's Mainline series. The Railgon gondola, like other cars in the product range, has a nice blend of molded and separately applied parts that will stand up to regular handling. If you want to further enhance the gondola, you can add consolidated stencils and Thrall builder's logos using waterslide decals available from Microscale and other companies. – *Cody Grivno, group technical editor*

Facts & features

Price: \$27.98

Manufacturer

Wm. K. Walther's Inc.

5601 W. Florist Ave.

Milwaukee, WI 53218

walters.com

Era: 1980 to present

Road names: Railgon (as delivered, eight road numbers); Baltimore & Ohio (Railgon patchout); Chicago & North Western (Railgon patchout); Delaware & Hudson; Denver & Rio Grande Western (Railgon patchout); Elgin, Joliet & Eastern; and Soo Line. Four numbers per scheme unless noted. Also available undecorated.

Features

- 36" metal wheelsets, in gauge
- 100-ton roller-bearing trucks
- Proto-Max metal couplers, at correct height
- Weight: 3 ounces, 1.7 ounces too light per NMRA Recommended Practice 20.1

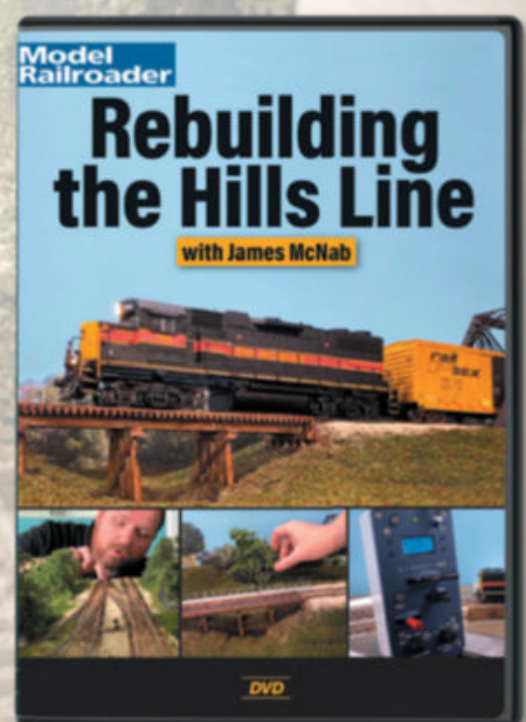
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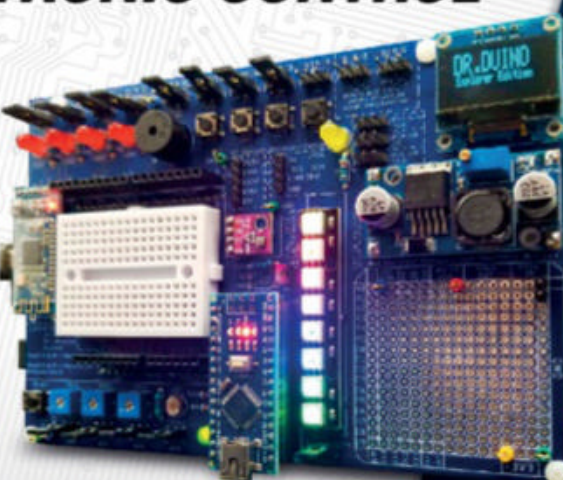
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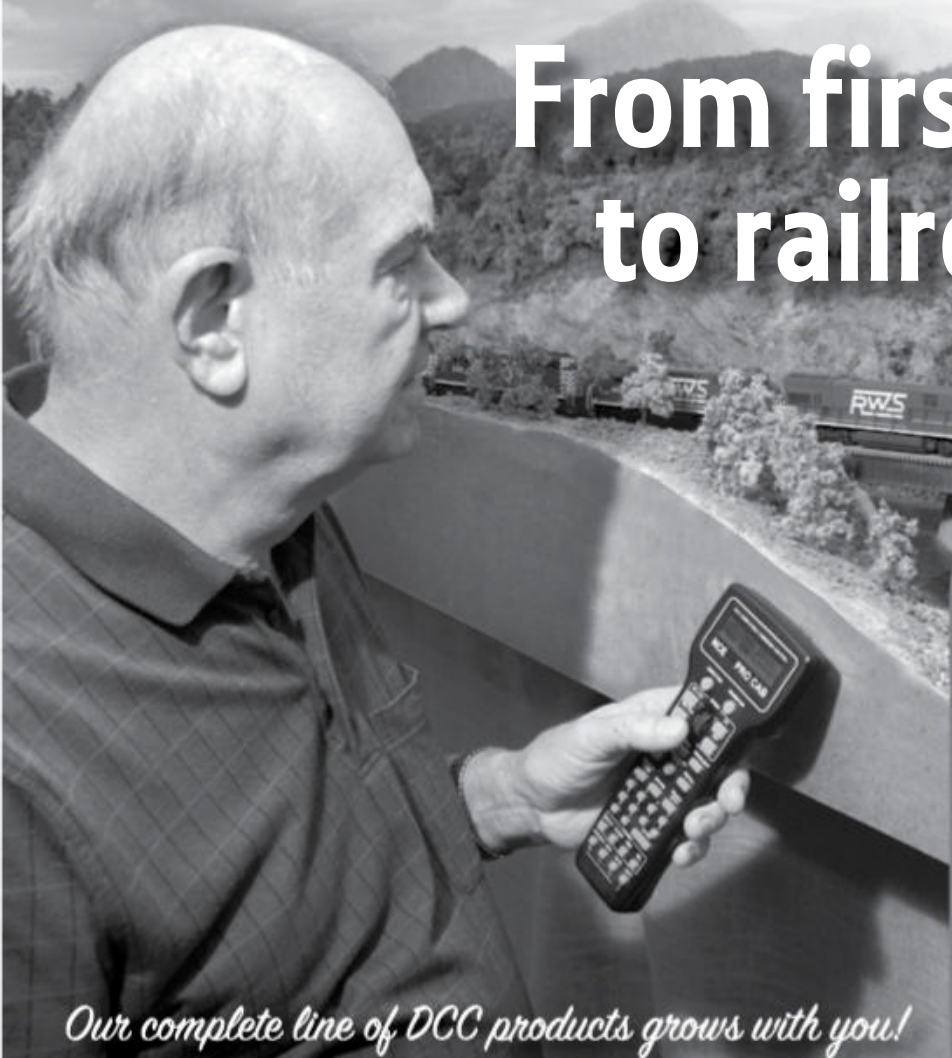
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The unexpected rewards of one-man crews

It's more than a year since the pandemic upended our world, forcing many of us to find different ways to enjoy our hobby. Regional prototype modeling meets started using Zoom, and railroad historical society meetings went online. Virtual operating sessions emerged, as I described here last November. But there's nothing like running a train on your own layout. Do we do this enough?

Richard Morrison, chair of the Toronto chapter of the Canadian Association of Railway Modellers, described his own one-man operating session to me. His 10 x 25-foot layout is a folded dog-bone design that hosts almost 30 industries. The layout has a return loop that allows continuous running. Like so many others, he hasn't run an in-person operating session in more than a year.

Working as a one-man crew kept him operating. Richard arranged a through freight to run continuously, lapping the dogbone loop every five or so minutes. He then serves the industries with a switch job, ducking in and out of industry tracks, always clearing the main for the through freight when it comes around. The exercise forces him to plan efficient moves. "It's more challenging than I expected," he said.

I started my own one-man crew long before the concept dawned on railroad executives and Wall Street, way back when I ran the Lionel set Dad built on a couple of plywood sheets. There was one town on the oval, which featured a



Richard Morrison works a one-man crew on his Northeastern Guildwood layout, loosely patterned on Union Pacific, his childhood favorite. Richard Morrison photo

log loader, a forklift lumber platform, and another accessory I don't remember clearly. I operated as if each accessory was its own town. I'd work the log loader and simulate distance between towns by making four or five loops before stopping to work the forklift platform.

Richard's description also reminds me of a local working a busy main line. I was a commuter on a former Reading double-track main near Philadelphia for many years. Though well past their prime, the number of businesses once served by rail was startling. Only a few were left when I rode 30 years ago, but I'd often see a local freight tucked away, waiting for my train to pass.

I commuted to Philadelphia on Amtrak's ex-Pennsylvania four-track main, too. It had long running tracks along the main that allowed locals to switch without

interfering with mainline movements. Richard's design includes both: many of his industries are served by a running track and others can only be switched from the main.

Want an eye-opener? Work a one-man crew on your own layout. Mine serves a rural area in which creameries in almost every town generate plenty of fresh milk traffic. All but one of the creameries are easy to serve because they're trailing-point sidings. The one facing-point siding usually makes the train late because it requires a time-consuming runaround. Guess who was perplexed by these delays until he caught the job during one short-handed operating session? Me.

Puzzling over this stirred memory of a long-time veteran's description of the moves a railroad designed to spot cars delivered by an express. A local freight working nearby was assigned to assist, positioning itself and waiting at the scheduled time. When the express arrived, its engine cut away so the local's power

could couple to the setouts and pull them into the clear quickly. The local spotted the cars after the express left. Aha! Typically, a freight meets my milk train at the station with the facing-point pickup. From now on, I'll assign it to pull the load and place it in the milk train.

I ask my crew to report derailment-prone hot spots and other mechanical or electrical issues, and I log this info to see if they repeat themselves. However, many little headaches like the delays caused by the facing-point switch don't reach me. Working a one-man crew between sessions, undisturbed by the demands of hosting, can draw my attention to them.

No doubt online events will find a place in our post-virus world. So might virtual operating sessions. These changes may increase interest in the hobby, expanding participation without the time and expense of travel. As for me, I'll certainly make it a habit to run some trains between sessions so I can put myself in my crews' shoes. **MR**



WANT AN EYE-OPENER? WORK A ONE-MAN CREW ON YOUR OWN LAYOUT. — JERRY



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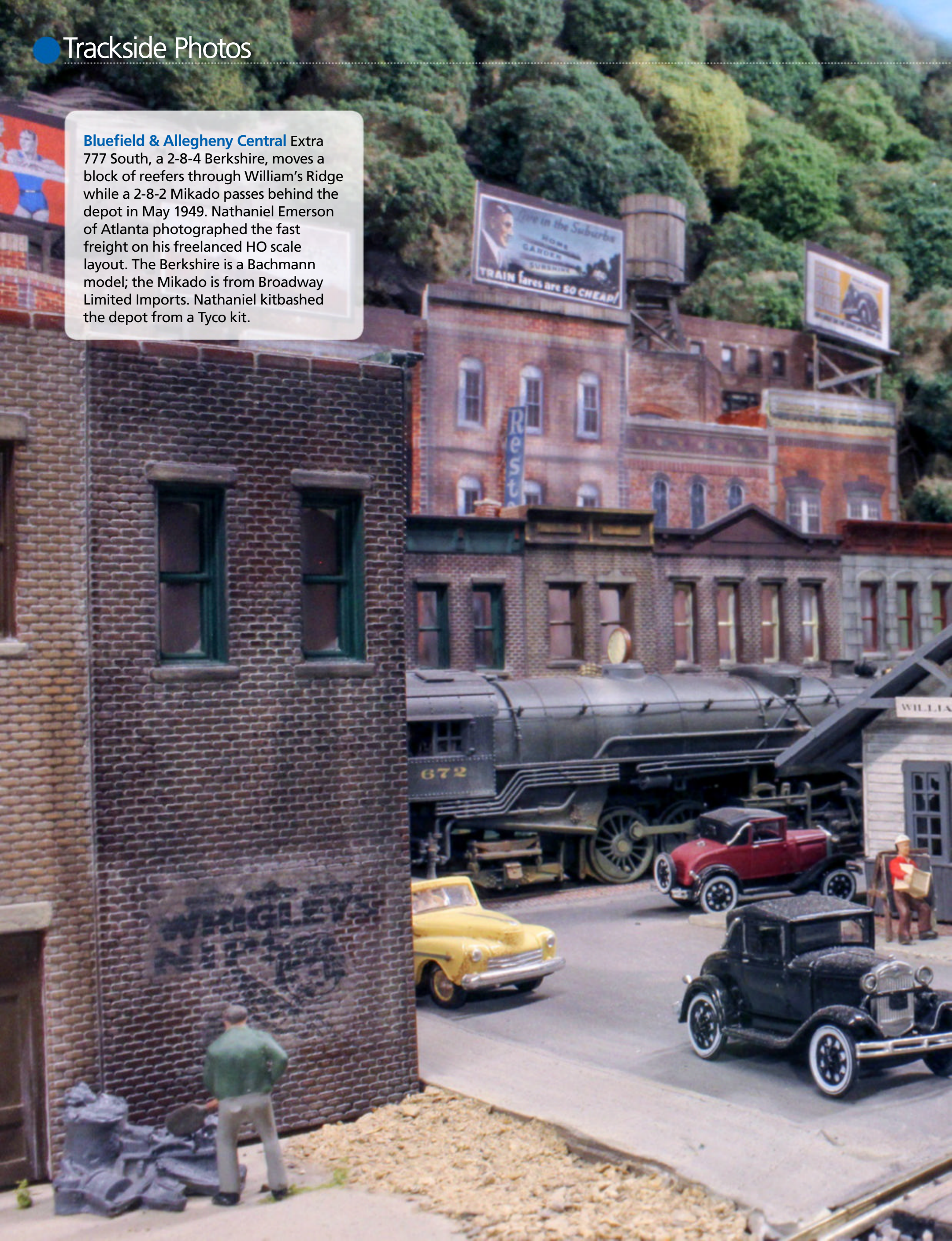
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Bluefield & Allegheny Central Extra 777 South, a 2-8-4 Berkshire, moves a block of reefers through William's Ridge while a 2-8-2 Mikado passes behind the depot in May 1949. Nathaniel Emerson of Atlanta photographed the fast freight on his freelanced HO scale layout. The Berkshire is a Bachmann model; the Mikado is from Broadway Limited Imports. Nathaniel kitbashed the depot from a Tyco kit.



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Mr. and Mrs. Thaddeus J. Ott (of the Philadelphia Otts) wait for the company photographer to emerge with his equipment and shoot their portrait as they “rough it” on their Western excursion. Ron Foreman of Glendale, Calif., took the picture on his HO_{N3} Devil’s Gulch & Helengon RR. Ron modified the former Denver & Rio Grande locomotive and scratchbuilt the shorty tender to fit on the railroad’s 51-foot turntable. He also kitbashed the Model Die Casting combine.

The eastbound *San Diegan* rolls through a grade crossing in San Juan Capistrano, Calif., on its two-hour journey from Los Angeles Union Station to San Diego. Alain Kap’s HO scale layout depicts the Atchison, Topeka & Santa Fe’s 4th District, also known as the Surf Line, in the 1940s. The Electro-Motive Division E1 is a Broadway Limited model and the passenger cars are from Wm. K. Walthers. Alain shot the photo.



MORE ON THE WEB

Paul Kahne’s photo of Lee Gasparik’s O scale layout, seen above, is this month’s free wallpaper. Get it from [Trains.com](https://www.trains.com)

Two Pennsylvania RR class J1’s pass in the early evening, one laboring upgrade with a manifest freight and the other drifting with a train of empty hoppers. The action takes place on Lee Gasparik’s O scale PRR/New York Central layout, which was featured in *Great Model Railroads 2020*. The layout runs on battery power and radio control. Paul Kahne photo

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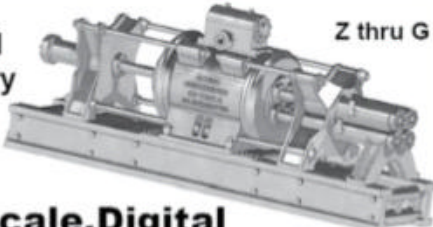
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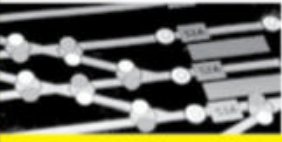
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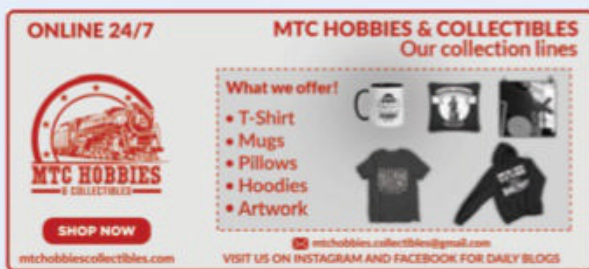
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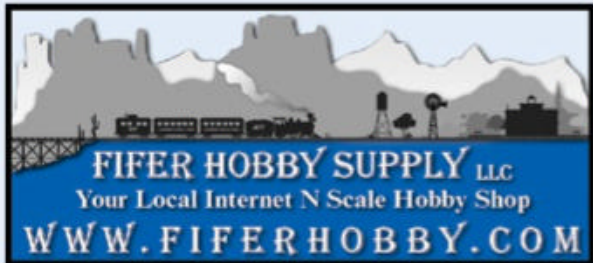
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Schedule of Events

AZ, PRESCOTT AREA: Beat the Heat Model Trains Swap Meet. Liberty Traditional School, 3300 N. Lake Valley Rd., Prescott Valley. Saturday, August 21, 2021, 9:00am-1:00pm. Adults \$5.00, children 12 and under free. Presented by: The Central Arizona Model Railroad Club. Contact: Doug Gilliatt, 480-390-0320. Face masks are required in the hall.

FL, TALLAHASSEE: 30th Annual Tallahassee Model Railroad Show and Sale! 2-DAYS! Leon County Fair Grounds, 441 Paul Russell Rd., Bldg. 2 & 4. June 26-27, 2021. Saturday, 9:00am-5:00pm & Sunday, 10:00am-4:00pm. Admission: Adults/Children 13 & over, \$10 BOTH DAYS! Scouts in uniform/children 12 & under FREE! SCALES Z-G! FOOD! Contact: Andy Zimmerman, 850-524-4399. Email: GNTrainman@comcast.net

IL, GALESBURG: Galesburg Railroad Days Train & Toy Show. Knox College, T. Fleming Fieldhouse, 199 East Knox Street., Galesburg, IL 61401. June 26-27, 2021, Saturday 9:00am-4:00pm and Sunday 10:00am-3:00pm. Admission \$5, kids under 12 free. Free parking and shuttle service from parking to entrance. Food & drinks available. Info: 309-343-6700 Email: barrywainer@yahoo.com or visit www.GalesburgTrainAndToyShow.com

IL, GREENVILLE: American Heritage Railroad Train Show @ American Farm Heritage Museum I-70 @ IL Rt. 127 (Exit #45). Saturday, June 12, 2021, 10:00am-4:00pm. Admission: \$5.00, under 12 FREE. Train ride with paid admission. Operating layouts. Dealers welcome, \$15.00 per table. Contact Jim @ 217-825-6230.

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

IL, ST. CHARLES: 45th Annual Kane County Railroadiana and Model Train Show. Kane County Fairgrounds, 525 South Randall Rd. Sunday, June 13, 2021, 10:00am-3:00pm. Admission: \$6.00 w/tax. Tables \$60.00. Please visit our website for latest Covid updates. For information: 847-358-1185, RussFierce@aol.com or www.RRShows.com

NE, DESHLER: Train Show & Open House, July 24-25, 2021. Thayer County Activity Center, 4th & Race St. Hours: Saturday, 9:00am-5:00pm, Sunday 10:00am-4:00pm. Clinics, custom vendors, layouts, and manufacturers. Admission \$6.00, under 12 FREE. Extended hours at Spring Creek Model Trains. 304 E. Bryson Ave. Details: www.springcreekmodeltrains.com

NE, SPRINGFIELD: NE-IA Railroaders Train and Toy Show. July 17-18, 2021. Saturday 9am-4pm, Sunday 9am-2pm. Admission: \$8.00, 12 and under FREE. Sarpy County Fairgrounds, 100 Main St., Ag. Bldg., Zip: 68059. 20,000 sq.ft. of train and toy items for sale, plus parts/repair vendors. Free parking. Information: Mark Nelson 402-731-1349; Bob Schaffer 402-990-0085; Jeff Carper 402-960-7824 www.NebraskalowaRailroaders.com

OH, FOSTORIA: 19th Fostoria Rail Festival, 1001 Park Avenue, Zip 44830. New larger school building. Saturday, September 25, 2021, 10:00am-4:00pm. Admission: \$5.00, children 10 and under free w/adult. Information: Fostoria Rail Preservation Society, 419-435-1781, EllenGatrell@gmail.com, www.FostoriaIronTriangle.com, Fostoria Rail Park Facebook

OK, EDMOND: Train Show - Steaming into Summer Fun. July 16-17, 2021. Friday, 5pm-8pm. Saturday, 9am-3pm. Admission: \$5.00. Edmond Community Center, 28 E. Main St., in the heart of downtown Edmond, OK 73034. Sponsored by the TTOS Sooner Division. For further information visit: www.ttos-soonerdiv.org

TX, AUSTIN: Austin Train Show. New location! Over 25,000 sq.ft. of railroading fun for the whole family! Palmer Events Center, 900 Barton Springs Road, Austin, TX. August 28-29, 2021. Saturday 10am-6pm, Sunday 10am-4pm. Admission \$8 (includes both days, children 12 and under FREE). Vendors, model and Lego railroads, home layout tour included. For more information, visit austintrainshow.org

TX, HOUSTON: Greater Houston Train Show presented by the San Jacinto Model Railroad Club. Saturday, August 14, 2021, 10:00am-4:30pm. Stafford Centre, 10505 Cash Rd. (at Murphy Rd.), Stafford, TX 77477. Instructive classes, vendors, operating layouts, contests. \$5 admission, under 12 free, \$10 family. Concessions and free parking. Subject to mandates surrounding Covid. More info at: http://sanjacmodeltrains.org/

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Seven milestones in model railroading



Ordinary models such as well-detailed but plain-painted Athearn F7s rolling through lichen-covered ridges nonetheless added up to an authentic view of 1960s central Appalachian railroading on Allen McClelland's original HO Virginian & Ohio. Jim Boyd photo

Thinking back over the decades of our hobby, many of which I have had the pleasure of witnessing firsthand, I can think of more than a few key junctures where something significant happened. A few that come to mind are the founding of the National Model Railroad Association and the resulting standards and recommended practices; John Allen's gift for adding texture, hence realism, to models; the Globe (later Athearn) plastic F7; Kadee's magnetic coupler; flex track; command control – you get the idea.

Too often we wait too long to thank those who made such key contributions to scale model railroading to thank them publicly. So at the risk of ignoring other important contributors for the moment, I am going to cite one man who understood what the hobby needed to advance beyond building and operating scale models and instead *seeing them as railroads* that, for purely

practical reasons, needed to be smaller than their full-size counterparts. And he did something about it and shared his ideas with the rest of us. That man is W. Allen McClelland.

I met Allen at a National Model Railroad Association regional convention in September 1970. I had been editing *Railroad Model Craftsman* for just over a year by then and had already figured out that he was doing something extraordinary. We became instant "old friends."

Jim Boyd joined me at Carstens Publications in 1971, and he shared my view that Allen was on to something. Allen's Virginian & Ohio was more realistic than any model railroad we could recall, yet he was using those same Athearn plastic F7s with a "dip blue" paint scheme – very much like what the Baltimore & Ohio was using, in fact. Clearly, he was striving for *plausibility over showmanship*.

By this time, I had enjoyed an operating session on the V&O and was aware of other huge advances that Allen had assembled, even invented, into one package that was essential to make the V&O a railroad rather than merely another attractive model. First, it was a *walkaround layout*. I'm not going to posit that he invented the concept. But he made it the bedrock of the entire point-to-point track plan with hidden staging at either end. It became known by his *beyond the basement* concept, where the goal was to convince crews that their trains were actually going from Here to There. In other words, seeing a model railroad as part of a continental rail network.

But for a walk-around plan to work, he needed walkaround

throttles. Moreover, while it's possible to use direct-current control with a walkaround design, it's more realistic to use command control. When the V&O was starting to roll in the early 1960s, the only command control system was General Electric's Astrac. Its designers assumed one person would run up to five trains.

Allen installed each controller in a 120-volt outlet box attached to a heavy-duty coiled cable that plugged into a receptacle on the fascia. Presto: *Walkaround command control* was born. Model railroading leaped into the future in that instant!

The idea that trains went beyond the basement led to his increasingly sophisticated use of *staging yards*. He didn't knock it out of the park during his first at bat, as the west end terminated in a hidden staging loop with perhaps three tracks, and the east end terminated at visible Afton yard. But as the railroad was extended westward, it included a stub-ended staging yard in the dispatcher's office.

He also taught us about setting a benchmark, which he called *good enough*. We're free to set the bar at any height we're comfortable with, but then everything

from detailing to paperwork should reach that same level of quality and authenticity.

Those are seven remarkable contributions to the art and technique of scale model railroading. Allen's too modest to stake claim to those advances, so I'll do it for him here. **MR**





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