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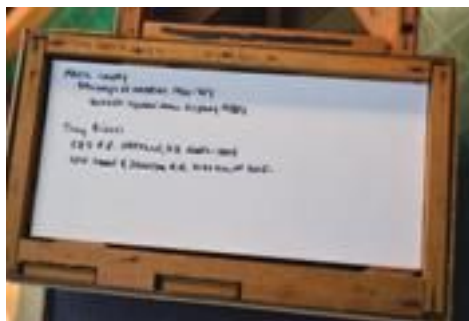
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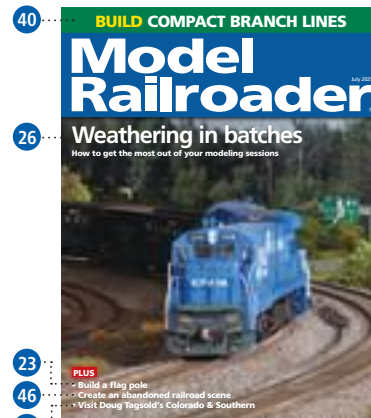
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Why I enjoyed freelancing



On the cover: A pair of Rapido Conrail GE C30-7 diesels round a curve on Dave Abeles' Onondaga Cutoff HO scale layout. Dave Abeles photo



Next issue

In August, Dave Abeles shows us how to protect a layout during house construction, we visit two great layouts, learn photo techniques from Brooks Stover, and more!

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Cody's Office returns!

All-new episodes of **Cody's Office** are back into production! That's right, the popular Trains.com Video series returns at the Firecrown Media offices in suburban Milwaukee, Wis. The setting may be different, but *Model Railroader* Senior Editor Cody Grivno is back with all of your favorite segments.



A new era for the Milwaukee, Racine & Troy

When **Kalmbach Publishing Co.** moved from Milwaukee to the western suburb of Waukesha in 1989, the Milwaukee, Racine & Troy had a blank slate. The ink-stained concrete floor; large, drafty windows; and sun-faded scenery were in the past.

Take a trip down memory lane in this retrospective photo gallery, only on Trains.com

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You could be the author we're looking for!

Model Railroader has had a lot of great authors over the years, but we're always looking for more. When I go to model railroading events, I'm always on the lookout for the next great story.

Whether it's at an operating weekend where I get to see lots of model railroads, or at Railroad Prototype Modeler meets, or National Model Railroad Association meets and conventions, there's a lot of great work to be seen outside these office walls.

Sometimes, the next great story comes to us, though. People will send in a photo of their modeling, and I'll ask them if they want to write about what they're doing. Part of what makes the hobby, and this magazine, great is the willingness of modelers to share their work.

If you've been thinking about sharing some of your own work, why wait? There

are many ways you can join in. One of the easiest ways to get into the magazine is to share a photo for our Trackside Photos section.

Send us a clear, in-focus photo of an interesting scene on your or a friend's model railroad and I'll see if I can get it in the magazine. If you haven't been photographing your layout, we can help you develop the skills to get the kinds of images we need.

With a tripod and some extra lights, it's not too hard to get decent photos of larger projects or scenes. Longtime contributor Brooks Stover has a great tutorial on model railroad photography on our Trains.com *Model Railroader* contributor page that can lead you in the right direction.

Maybe you have or know of a great modeling technique. How-to stories are the bread and butter of modeling magazines, and the photography is

a little less technical here, as the images are usually simpler. You can use a cellphone to easily get images of the steps you're taking to build your models.

Ideally, you'll take photos on a white or gray background (I use a large sheet of paper secured to the back of my spray booth to create a sweep). The spray booth has enough light to get decent photos, and it's right next to my workbench.

If you're contemplating bigger projects, such as scenery or large structures, you'll probably need a digital single-lens reflex camera (DSLR), which Brooks' article can help you with. DSLRs succeeded the 35mm cameras many of us started with.

I've spent most of this space writing about the photographic aspect of creating a story for the magazine because that's the part we



can't do for you. Once the model is built, you can't go back and get a missed step.

The writing is easy for us to help you with. As long as you can show us what you did, we can make sure it all makes sense in the story.

It's a lot easier to get a story in MR than you might have thought! Let's hear about what you're doing.

Model Railroader

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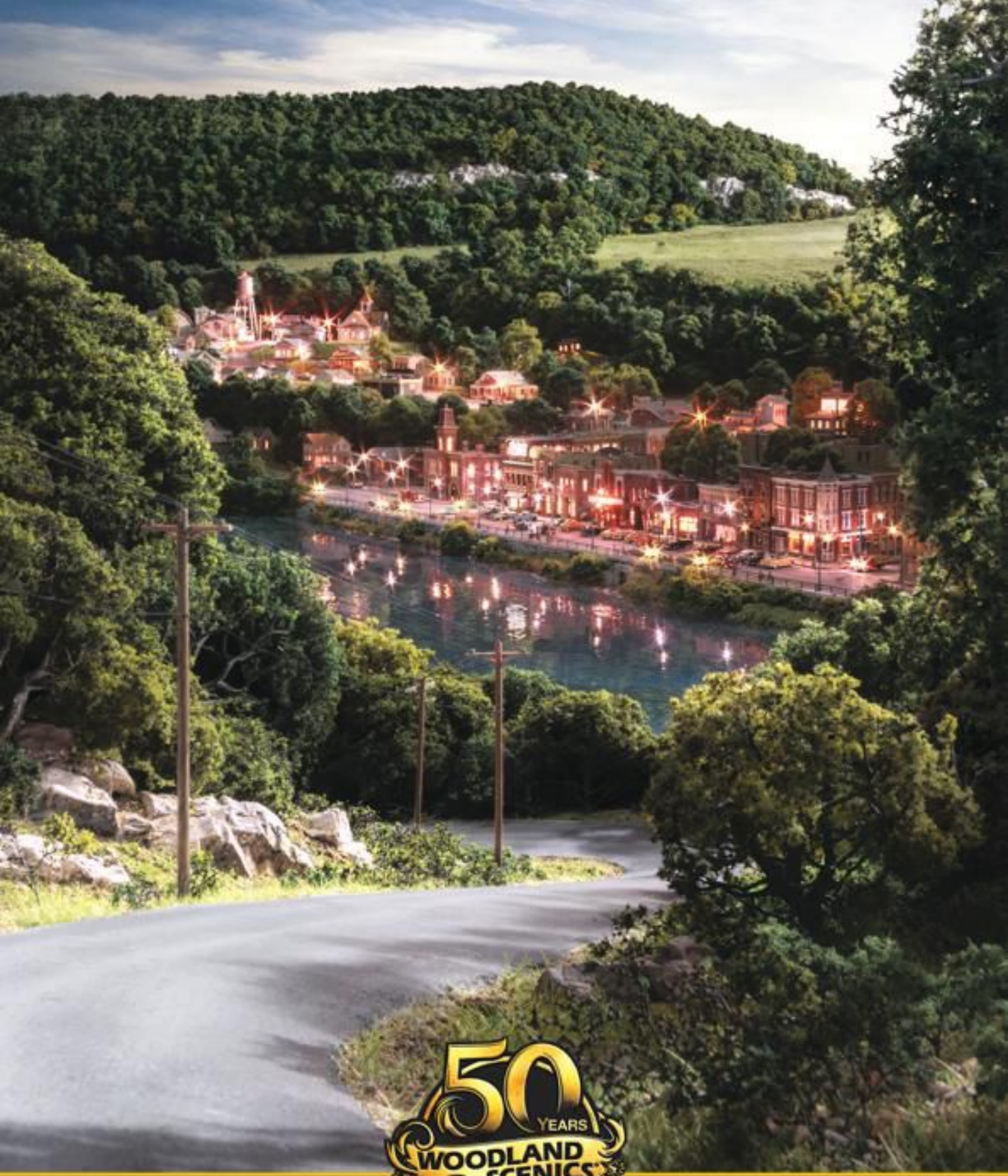
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HO scale



General Motors Diesel Division SD50F diesel locomotive.

This six-axle road locomotive is the latest release from Aurora Miniatures North America Inc. The HO scale SD50F is decorated for Dakota, Missouri Valley & Western and Canadian National (zebra stripes, North America, and single-stripe schemes) in one to four road numbers per scheme. The model has light-emitting-diode lighting,

operating radiator fans, and an improved fan drive unit. The company also offers SD50AF diesels painted for CN and DMVW in two numbers each. Direct-current models with a 21MTC connector and dual sugar-cube speakers retail for **\$249.99**. Versions with an ESU LokSound V5 Digital Command Control sound decoder are priced at **\$349.99**. Aurora Miniatures North America Inc., na.auroraminatures.com

HO scale locomotives



• **Alco FA-1 and FB-1 diesel locomotives.** Chicago, Rock Island & Pacific; Erie Lackawanna; Lehigh Valley; Long Island Rail Road; Missouri Pacific; New York, New Haven & Hartford; New York Central; Soo Line; Spokane, Portland & Seattle; and Wabash. Multiple road numbers per scheme. Road-specific details including flat or angled number boards and dynamic or non-dynamic brake versions. Factory applied grab irons, handrails, underbody piping, and conduit. Minimum radius, 18". Direct-current single A unit, \$229.95; single A unit with DCC and sound, \$339.99; direct-current A-B set, \$429.95; A-B set with DCC and sound, \$649.95. Rapido Trains, 905-474-3314, rapidotrains.com



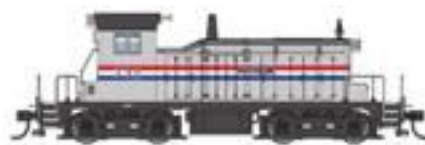
• **Electro-Motive Division GP30 diesel locomotive.** Burlington Northern

(GP39M); Atchison, Topeka & Santa Fe (GP30U); Chessie System (GP30 and GP30M); Chicago Great Western; CSX (GP30M); Penn Central; and Union Pacific. Multiple road numbers per scheme. Road-number- and era-specific details including horn type and location, cab heater louvers, sunshades, bell location, battery box doors, and more. Light-emitting-diode light package featuring headlights, ground lights, walkway lights, tri-color class lights, number boxes, and more as applicable. Factory-applied details including grab irons, uncoupling levers, handrails, and m.u. cable receptacles. Direct-current model, \$204.99; with DCC and sound, \$304.99. Rivet Counter line. ScaleTrains, 844-987-2467, scaletrains.com



• **Electro-Motive Division GP49 diesel locomotive.** Norfolk Southern. Three road numbers. Also available in Boston & Maine, National Railways of Mexico, Norfolk Southern, and U.S.A. 250th anniversary fantasy schemes. Light-emitting-diode lighting including headlights, number boxes, and signal lights

and/or beacons as applicable. See-through cab windows and detailed interior. Separately applied Celcon handrails, etched metal fan grills, train line and m.u. hoses, windshield wipers, and more. Direct-current model, \$249.99; with DCC and sound, \$349.99. Genesis line. Athearn Trains, 800-338-4639, athearn.com



• **Electro-Motive Division SW1 diesel locomotive.** Amtrak; Boston & Maine; Chicago, Burlington & Quincy; Chicago & North Western; Milwaukee Road; New York Central; and Southern Ry. Three to four road numbers per scheme. Also available painted yellow and black but unlettered and undecorated. Updated tooling. Factory-installed sugar-cube-type speakers in direct-current and DCC versions. Factory installed wire grab irons. 21-pin DCC connector. Directional, warm white light-emitting diode headlights. See manufacturer's website for pricing. Walther's Mainline. Wm. K. Walther's Inc, 414-527-0770, walther's.com

HO scale rolling stock

- **40-foot flatcar.** Atchison, Topeka & Santa Fe; Reading Co.; Southern Pacific; and United States Army. One road number per scheme. RP-25 contour wheels with metal axles and Bachmann couplers with springs. Three removable crates included. \$23.98. Rock Island Hobby, rockislandhobby.com



- **1937 Association of American Railroads 40-foot boxcar.** Ontario Northland, Florida East Coast, Lancaster & Chester, and Northern Pacific. Multiple road numbers per scheme. Prototype-specific end, roof, and door variations. Full underbody detail. Single car, \$54.95; six-pack, \$329.70. Rapido Trains, 905-474-3314, rapidotrains.com



- **International Car Co. bay-window caboose.** Chessie System (in three schemes) and Baltimore & Ohio. One or two road numbers per scheme. Also available in U.S.A. 250th anniversary fantasy scheme. Road-number-specific details including antenna and air whistle. Detailed interior including seats. Light-emitting-diode lighting including interior lights. See-through end platforms and steps. Underframe detail

including air brake reservoir, control valve, and brake cylinder with plumbing and brake rod details. Direct-current model, \$134.99 with DCC and sound, \$174.99. Genesis line. Athearn Trains, 800-338-4639, athearn.com



- **Pullman-Standard PS-2 3,215-cubic-foot-capacity covered hopper.**

Chicago, Rock Island & Pacific; Atchison, Topeka & Santa Fe; Chicago & North Western; Great Northern; Minneapolis & St. Louis; Norfolk & Western; Sacramento Northern; and Southern Pacific. Multiple road numbers per scheme. Also available as undecorated kit in three versions. Road-specific details including three brake wheel housing options, two brake cylinder versions, two retainer valve mounting options, and multiple B-end bolster web plate detail options. Separately applied scale wire grab irons and uncoupling levers. Brass corner steps, separate flexible rubber air hoses, and Kadee couplers. \$60.95. Tangent Scale Models, 828-412-3886, tangentscalemodels.com

- **Pullman-Standard Union Pacific business car No. 101.** *Lincoln* and *Lone Star*. Various drumheads available. Also offered painted primer gray with black trucks. Factory-applied handrails, antenna arrangement, and more. Underbody detail with warning labels. Controllable light-emitting-diode lights including ditch lights, marker lights, tail

Club offerings



- **American Car & Foundry three-bay Center Flow covered hopper.**

Accurail HO kit produced for the Thunderbird Model Railroad Club's Phoenix, Turnbow & Apache RR. One road number. Single car, \$30 plus shipping. Thunderbird Model Railroad Club. Call 480-968-1880 or e-mail dick@thehobbydepot.com.

lights, interior lighting, and illuminated drumhead as applicable. Kadee couplers. Minimum operating radius, 18". Broadway Limited Imports, 386-673-8900, broadway-limited.com

HO scale structures

- **Vintage brick warehouse.** Tower, main building, warehouse, and loading docks are separate components allowing for multiple configurations. Decals and printed graphics included. Parts molded in four colors. \$59.98. Walther's Cornerstone. Wm. K. Walther's Inc., 414-527-0770, walther's.com

N scale locomotives



- **Electro-Motive Division F40PH-2D diesel locomotive.** VIA Rail Canada in Kool-Aid, \$10 Bill, Canada, Home Hardware, Love The Way, Operation Lifesaver, original, Renaissance, and Telus schemes. F40PH-2D or rebuilt F40PH-2D body and details as applicable. Light-emitting-diode headlights, ditch lights, number boxes, emergency headlight, and emergency shutdown strobe light as applicable. Separately applied grab irons and handrails. Underbody detail. Prototype-specific rooftop details. Minimum radius, 11". Direct-current model, \$159.95; with DCC and sound, \$269.95. Rapido Trains, 905-474-3314, rapidotrains.com

HO scale



Union Pacific business car Kenefick. Broadway Limited Imports offers car No. 119 in its modern appearance with a Union Pacific shield and Big Boy Tour, Seal of the President of the United States, and Spirit of the Union Pacific drumheads. In addition, the HO scale model is available painted primer gray with black trucks. Features on the car (\$129.99) include a prototype-specific interior and light-emitting-diode lighting (ditch lights, marker lights, taillights, and an illuminated drumhead). The business car is compatible with codes 70, 83, and 100 rail and has a minimum operating radius of 18". Broadway Limited Imports, 386-673-8900, broadway-limited.com

Rapido HO scale EMD F40PHM-2



An Electro-Motive Division F40PHM-2 is the latest HO scale commuter diesel from Rapido Trains. The four-axle unit uses plastic and die-cast metal construction and has numerous factory-applied detail parts and an assortment of modeler-controlled lighting functions.

Electro-Motive Division produced the F40PHM-2 between October 1991 and December 1992. During the course of the production run 30 units were built, all for Chicago-area commuter railroad Metra. The commuter engines are used on Metra's Rock Island District and BNSF Ry. lines.

The sample we received is decorated as Metra 206, part of the commuter agency's 185 through 214 series. The locomotive was built in September 1992 under order number 896065. The unit was delivered in the blue-and-orange scheme. When rebuilt in the late 2010s, the 206 was repainted the fade scheme depicted on the model.

The Rapido model has a plastic body with a variety of factory-applied parts. The front pilot has a snow plow, m.u. and train line hoses with the glad hands picked in silver, train line receptacles, and an uncoupling lever. Except for the snow plow, the rear pilot has similar details, as well as extra train line receptacles on the bottom edge.

The F40PHM-2 has a multi-piece cab interior that's painted in prototypical colors. Details on the cab roof include a Sinclair antenna, a metal Nathan P5a air horn, a Positive Train Control antenna array, two air conditioners, and a layover system alarm light.

To separate the shell from the chassis, I removed the front and rear draft-gear boxes. Then I spread the body above the second and third axles to disengage tabs that lock into slots inside the shell.

The five-pole skew-wound motor with dual flywheels is nested in the center of the chassis. The motherboard, attached to the weight with two screws, spans the motor. The ESU LokSound V5 decoder and capacitors for the MoPower temporary energy storage system are attached to the board. Above the rear truck are two cube-style speakers.

I compared the Rapido HO scale EMD F40PHM-2 to prototype elevation drawings. The Rapido model matches all major dimensions. Nice work!

Our review sample features an ESU LokSound V5 sound decoder. I tested the locomotive at the workbench using an NCE Power Cab. At step 1, the commuter diesel moved at under 1 scale mile per hour. At step 28, the F40PHM-2 achieved a top speed of 66 scale mph. The full-size diesel has a top speed of 108 mph.

The commuter unit has a drawbar pull of 3.7 ounces. This is equivalent to approximately 17 free-rolling passenger cars on straight and level track.

In addition to the EMD F40PHM-2, Rapido offers Budd gallery commuter coaches and cab cars in a variety of paint schemes. This one-two combination makes it easier than every to model Metra commuter trains in HO scale from the early 1990s to the present day.
— Cody Grivno, senior editor

Facts & features

Price: Direct-current model, \$239.95; with ESU LokSound V5 sound decoder, \$349.95

Manufacturer

Rapido Trains Inc.
500 Alden Rd., Unit 21
Markham, Ontario, Canada L3R 5H5
rapidotrains.com

Era: October 1991 to present

Road names: Metra (late 1990s to current blue scheme; blue scheme with Operation Lifesaver logo; 2017 to current fade scheme; and Chicago, Burlington & Quincy heritage scheme).

Features

- Body-mounted metal couplers, at correct height
- Metal wheel stubs on plastic drive axle gears, in gauge
- Minimum radius, 18"
- Weight: 1 pound, 0.3 ounce



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Bluford Shops N scale mill gondola



A 52'-6", 15-panel mill gondola with factory-dented sides is now available from Bluford Shops. The injection-molded plastic N scale model, offered with light, medium, and heavy denting, features metal wheelsets, body-mounted couplers, and railroad-specific end and hand brake options.

The Bluford Shops model is based on a design developed by the Erie RR and Greenville Steel Car Co. in 1940. From the mid-1940s through late 1957, mill gondolas were constructed to this plan by other builders, including American Car & Foundry, Bethlehem Steel, Mount Vernon Car Co., and Pullman-Standard. In addition, Chicago, Burlington & Quincy; New York Central; and Rock Island shops built this style of car.

The sample we received is decorated as Conrail 522738, part of the railroad's 522584 through 522681 series (broken). The full-size 1,761-cubic-foot capacity car was built for the Erie by Greenville Steel Car Co. in April 1954. Following the 1960 merger between the Erie and Delaware, Lackawanna & Western, the gondola became Erie Lackawanna 16520. The car joined Conrail's freight car fleet in April 1976.

Construction of the N scale model consists of plastic sides and ends glued to a die-cast metal floor. The sides feature three levels of denting. What's the difference? "The lightly dented versions have multiple deflections in the side sheets above the floor line," said Craig Ross, owner of Bluford Shops. "The medium dented versions have the side sheets visibly puffed outward between the rivet lines as countless small dings to the inside faces accumulated and stretched the sheets into rough domes.

"The heavily dented versions also have the puffed-out panels, but to a greater extent — plus many of the ribs

have also been deflected outward. The concave dent detail on the inside faces matches the convex outside faces."

The gondola is offered with railroad-specific ends and brake equipment. The Conrail model has fixed Dreadnaught ends, an Ajax brake housing, and the same company's IP80 brake wheel.

The floor has board detail that runs perpendicular to the sides. This reasonably captures the look of wood planks and Armco steel freight car flooring. The Conrail car had a wood floor, as indicated by the "W" on the sides.

The bottom of the model features center sill, crossbearer, crosstie, and stringer detail. Parts of the AB brake system cast into the underbody include the air reservoir, brake cylinder, control valve, levers, brake rods, auxiliary and emergency reservoir pipes, and brake cylinder pipe.

A plastic casting consisting of the draft-gear box, body bolster, and center sill stub is attached with a pair of Phillips-head screws to both ends of the car. The 70-ton solid-bearing trucks are pin mounted.

The paint on our sample is smooth and evenly applied. The lettering is opaque, and the small data is legible under magnification. The "e" in VALVE was missing from the RELEASE VALVE stencil on both sides.

I compared the model to prototype drawings provided by Paul Tupaczewski, Erie Lackawanna Railroad Historical Society modeling advisor. Most major dimensions match up. The interior width is a scale 6 inches too narrow, which is typical on open-side cars. The truck centers are 43'-9", compared to 43'-3½" on the prototype.

I was unable to locate prototype photos of CR 522738. However, images of the gondola from 1976 when it was still EL 16520 are available online. The Wine Railway Appliance Co. lading band

anchors were omitted from the top chord on both sides, but that would be a tricky detail to re-create in 1:160. The route boards were also missing.

To see how the car performed in an operating layout environment, I took the gondola over to our Milwaukee, Racine & Troy State Line Route. The 4 x 12-foot island-style layout features 18" minimum radius curves and No. 6 minimum turn-outs. The gondola ran without issue while being pushed and pulled in a train.

Kudos to Bluford Shops for thinking outside the box and releasing a factory-dented gondola. Though the model is plastic, the interior and exterior denting looks the part. I can see this model being a springboard for some cool weathering effects. — *Cody Grivno, senior editor*

Facts & features

Price: \$37.95

Manufacturer

Bluford Shops

P.O. Box 152

Bluford, IL 62814

bluford-shops.com

Era: 1940s to 1990s (varies by paint scheme)

Road names: Conrail; Chicago, Burlington & Quincy; Erie Lackawanna; Great Northern; New York Central; Nickel Plate Road; Pittsburgh & Lake Erie; Rock Island; and St. Louis-San Francisco (Frisco). Six road numbers per scheme (two each per level of denting).

Features

- 33" metal wheelsets, correctly gauged
- Body-mounted couplers, at proper height
- Minimum radius, 11"
- Weight: 1 ounce, .1 ounce too light per National Model Railroad Association Recommended Practice 20.1

QUICKLOOK

Menards HO Cripple Creek Seed & Feed

Price: \$24.99

Manufacturer

Menards

5106 Menard Dr.

Eau Claire, WI 54703

menards.com/trains

Era: 1930s to present

Comments: Cripple Creek Seed & Feed joins the ever-growing lineup of HO scale structures from Menards. The factory-assembled model measures 4 3/8" wide x 3 1/4" deep x 2 7/16" high.

The Menards HO scale structure features laser-cut siding, multi-piece window and door assemblies, freestanding corner trim, and a separate loading dock. The dock is detailed with a figure and an injection-molded plastic pallet.

All four sides of the building have advertising signs. Brands include Dad's Root Beer, DeKalb corn, Dutch Boy paint, Mastercraft Doors, Purina Chows,

and Sinclair gasoline. The logos range from the 1930s to the present day.

The roof consists of an MDF deck topped with plastic molded to look like corrugated metal. The plastic, weathered with various shades of rust paint, has etched vertical and horizontal seams. Rake boards are attached to the sloping edges of the roof.

A static grass mat is attached to the top of the plastic base. The mat is further detailed with shrubs, rocks, a pair of 55-gallon drums and fertilizer bags, and Jack the German shepherd. Static

grass fibers are applied to the bottom of the corner trim to simulate ivy. The building, unlike many other structures from Menards, doesn't have lights.

Whether used as a standalone structure or part of a larger agricultural complex, Menards HO Cripple Creek Seed & Feed is a versatile building that will add visual interest to your model railroad. The ready-to-use model can be purchased at your local Menards store or through its website. — Cody Grivno, senior editor



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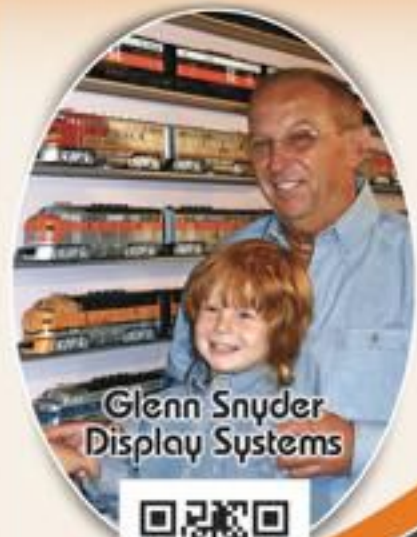


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A simple sign, crafted by master modeler Gil Stovicek some 50 to 60 years ago, now stands proud on the top of a hotel in downtown Columbus, Ohio, on Troy Bisesi's Erie Shore & Ironton RR.

Preserving model railroad history

Making notes inside models helps provide provenance for future owners

By **Troy Bisesi** • Photos by the author

I have hunted for antiques and collectibles over the years. From old phonographs and projectors to motion lamps and of course, model trains. One thing I always wondered about was how an item may have ended up where it was when I ran across it.

I retired about four years ago and the construction was well underway of what will most likely be my last large layout. I was unpacking items that I had stored, waiting for this final build. In some instances, items had been packed away for more than a decade. One in particular started me on a path I hope will encourage modelers, both young and old, to follow suit.

A simple magic marker billboard

Gil Stovicek, an O scale master modeler from Lyndhurst, Ohio, operated a large O scale layout in his basement called the American Central, featured in the February 1972 issue of *Model Railroader*. Gil scratchbuilt many O scale locomotives and won awards for his modeling in both the United States and Canada. Although Gil was a serious modeler, he maintained a sense of fun and humor in his hobby as evidenced by a billboard that read “HELP STAMP OUT HO.” To be sure, Gil had an appreciation for all scales and his friends were wide and varied.

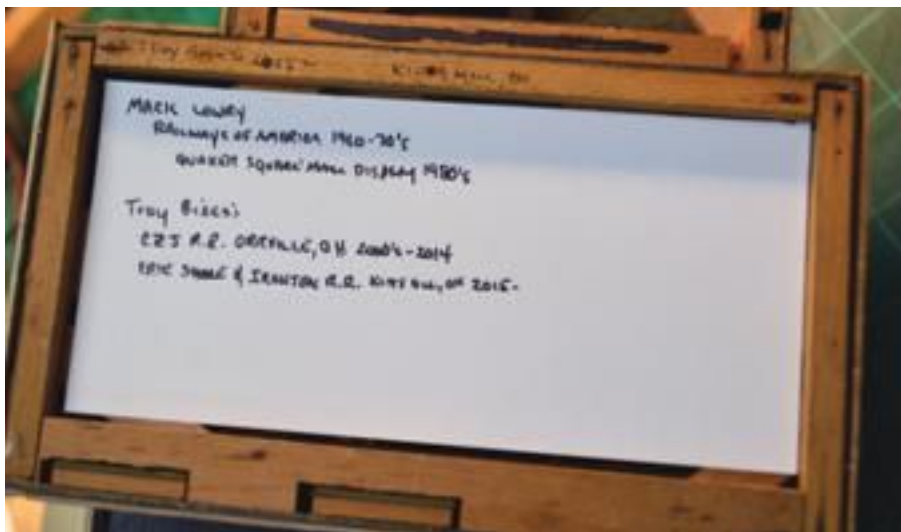
When Gil passed away in 2003, his collection was boxed up and sent to auction. There was one thing I wanted for sure, that billboard. To me that billboard was Gil!

More than 100 people showed up for the auction. I put our gang on the hunt during the pre-sale review. We searched box after box, but there was no sign of the billboard. It seemed as though the billboard might have been considered worthless, and had been thrown away.

But then, a few weeks later, I got a call from a friend of mine, Bruce Baron, who had been at the sale. He had won several boxes of equipment, and what did he happen to find buried deep down in one of the boxes? Amazingly, the billboard! That billboard sits today in a prominent position on my Erie Shore & Ironton layout. It's there, certainly not as a slight to HO modelers, but to pay homage to Gil and his sense of humor.

Preserving the history

When I finally unpacked this sign for display on my model of downtown Columbus, Ohio, I got to thinking that



This note on the bottom of one of Mack Lowry's buildings lays out its provenance for future owners.

although I knew the story behind it today, it might not be the case for someone else in the future.

With that in mind, I wrote a small history on the back of the sign thus establishing its provenance. This then reminded me of other items I had obtained over the years. I have several buildings from the famous O scale layout, Railways of America, by Mack Lowry, built in Cuyahoga Falls, Ohio, back in the 1960s and into the 70s. Mack and his layout can also be found in the September 1955 and August 1974 issues of *Model Railroader* magazine. So, I started to develop a pattern to attach a history too those as well.

So now, both with items I know the history of, and some of the buildings I've built, I block out an area on the bottom or hidden on the inside in white paint, where I record in ink where the item came from, what model railroads it was

displayed on, the actual city it was in, and any associated dates. For my items, I record the date built and the two or three model railroads it sat on.

I keep the writing small (leaving as much room as I can for future modelers) and then give it a light spray with clear varnish. Since these notations will not be exposed, this should be sufficient. How you do it really isn't the point. But you may certainly bring a smile to the face of a modeler some day in the future when they find the notes.

On locomotives and rolling stock, noting history right on the item would not be realistic. However, if the box is still around, a simple note card inside can cover it.

While provenance is often associated with dollar value, that's not what we're trying to do here. It's for the fact that it might be interesting for future modelers to know where an item came from, and what layouts and cities it may have traveled through. "Value" is subjective.

Is there any real value in a simple magic marker billboard that may have taken just a few minutes to construct? My answer to that is a resounding, "Yes!" I have yet to tell the story of the billboard and not have it bring a smile to the person hearing it. These items, these people, and in this case, this humor, deserve to be appreciated by future modelers. Let's help that history avoid the trash. Establish that provenance and let those items tell their story. **MR**

Troy Bisesi is a lifelong model railroader. He was a salesperson and consultant on paint coatings products and systems for nearly 36 years. He and his wife, Mindy, now reside near Ironton, Ohio.



This is one of two buildings Troy has in his collection from Mack Lowry's Railways of America layout. The building made its way to a unique shopping location named Quaker Square Mall in Akron, Ohio. The Reddy Kilowatt sign was added later.

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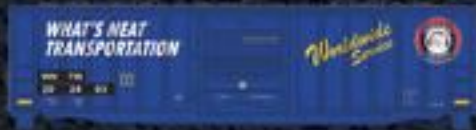
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If you plan on doing a lot of model building, having a dedicated work space is a must. Here is Trains.com Director David Popp's home workbench. He keeps his frequently used hand tools in a small caddy. David Popp photo

Any ideas for building a workbench?

Q Since *Model Railroader* magazine has moved to a new location, have you given any thought to a video or magazine series on building a workbench? I've got to build a new one to fit my new train room and I'm looking for ideas.

Jim Burns

A Thanks for writing in, Jim. Our workshop space is pretty well set up at the moment, so I don't anticipate any articles or videos on that topic. As you may recall, the workbenches at our former Kalmbach Media headquarters were built into the room.

At our new offices, we decided to use portable benches to make the shop spaces more flexible. In the modeling workshop, we have four adjustable-height work stations on leveling feet. This allows staff members to sit or stand while working. We cover the work surfaces with tempered hardboard or a self-healing mat to prevent them from getting damaged.

The modeling workshop has overhead fluorescent lights and large windows that let in plenty of natural light. Outlets along the wall provide space to plug in lights, tools, and computers as needed.

In our layout construction workshop we have Husky 24 x 52-inch adjustable-height workbenches. The benches feature a powder-coated steel frame, a solid wood top, two drawers, leveling feet, and swivel casters with locking brakes. The crossbar support can be put in the middle or at the back.

The height of the Husky workbenches is also adjustable. When using the leveling feet, the height range is 26 to 39 inches. If the casters are installed, add 3 inches to both numbers.

Though we don't have plans for a workbench video or article right now, I did find some stories in the *Model Railroader* archive that may be of interest to you, including "DMBM-2 workbench" (July 1984), "Build a practical home workshop" (July 1991), "Build a portable workbench" (December 2000), "Build a modular workshop cabinet" (April 2002), and "The model railroader's workshop, part 2" (July 2006).



Harold W. Russell's article on the R.B. Crowell & Son Grain Co. in Clifton Springs, N.Y., appeared in our 2021 special issue *Best of Industries*. We help a reader learn more about how mills of this size operated. Harold W. Russell photo

Q In your special issue *Best of Industries*, Harold W. Russell wrote about the R.B. Crowell & Son Grain Co. He stated that the rail-served industry received grain in bulk loads, but in the photos and drawings it seems to me that they would ship grain instead of receiving it. What are your thoughts?

Markus Russ

A To answer your question on feed mills, I turned to Jeff Wilson's book *The Model Railroader's Guide to Grain* (Kalmbach Books, 2015). He wrote, "Rail operations at feed mills vary by their size. Large mills that produce pelleted feeds, as well as the plants that make pre-mixes, will ship products by boxcar or covered hopper."

"Most local feed mills don't ship anything by rail (their outbound traffic is to farmers and other end users), but through the 1960s, they might have received bags of premixes or pelleted feed by boxcar. Much of this traffic today arrives by truck. Feed mills don't often receive grain by rail — it's more likely to arrive by truck."

Q When I was looking at pictures of the Milwaukee, Racine & Troy locomotive fleet, I noticed small numbers near the herald on some diesels. Were those numbers tied to the control system used on the layout?

Jason Trew

A Yes, those single- and double-digit numbers near the herald on MR&T

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diesels corresponded to the Power Systems Inc. Dynatrol command control system that was used on the club layout. In the December 1989 *Model Railroader*, longtime staff member Jim Kelly wrote, "One other very important development came in the early '80s. It was obvious that if the MR&T were to become an operating railroad we needed to be able to run more than one train at a time! We had begun wiring rotary switches and harnesses for six-cab block control, but the task looked absolutely hopeless given our lack of manpower and zero enthusiasm for wiring.

"You may remember that commercial command control systems came of age in the early '80s — this development came to our rescue like cavalry charging over the hill in an old movie. We purchased PSI's Dynatrol system and voila! — finally we could run multiple trains."

I recently e-mailed Jim to learn more about the significance of the numbers. He replied, "With the Dynatrol system you could control up to 16 different locomotives with numbered red plugs about an inch long that were plugged into the controllers. A receiver could respond only to a controller fitted with the plug numbered for its signal. The small number on the cab indicated the number for the receiver inside and the plug required to run it."

When the layout was switched to Digital Command Control, some units had the Dynatrol equipment replaced with decoders. The small numbers were painted over on those locomotives. **MR**



Milwaukee, Racine & Troy Electro-Motive Division GP38-2 No. 719 was one of several HO scale diesels on *Model Railroader's* club layout equipped with a Dynatrol command control receiver. The small 9 by the herald indicated the number of the receiver under the shell.

Bill Zuback photo

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Two Sandy River & Rangeley Lakes crewmen take a midday break on the steps of the Kingfield Post Office. To the left is the town's newest flagpole. Photos by the author

A flag for the Kingfield Post Office

After having my friend Rich Cobb build me a post office for the village of Kingfield on my On30 Sandy River & Rangeley Lakes RR, I struggled with how to come up with an American flag for the building. I considered looking on the internet for examples of period flags and thought about how to copy them at the proper size and on what material.

One morning while pondering my dilemma I realized I had a 1930s-'40s era American flag in my garage that my brother had given me years ago to display outside my home. (Between you and me, in O or HO scale only you will know if the flag is the proper vintage. A more modern one will work if the number of stars isn't immediately evident.) I walked out into my yard that very morning, flag staff in hand, and had my wife, Cheryl, photograph me holding the flag from about 15 feet away. Since I decided to hang my flag on a pole on a calm day I held the pole vertically.

Modeling the flag pole was a simple one-evening project that added prototype realism to the post office scene. I hope you give these techniques a try.

STEP 1 MAKING THE FLAG



I returned to my computer, downloaded the photo, and printed it on copy paper at various sizes. I opted for a contact sheet size. It is shown in ① along with the rest of the materials and tools I needed.

I took the printout to my workbench, placed the paper on a piece



of glass, and used a fresh No. 11 blade in a hobby knife to cut out the flag ②. I carefully squeezed the flag to bend it and give it some dimension while at the same time making sure the plain (white) side of the paper onto which it was printed didn't show ③.

STEP 2 BUILDING THE FLAGPOLE



I made the flag pole from two sizes of brass tubing. The total height of the pole is 18 scale feet, with the top 14 feet made from $\frac{1}{16}$ "-diameter brass tubing and the bottom 4 feet from $\frac{3}{32}$ "-diameter brass tubing (I actually made the bottom 8 feet long so I could plant 4 feet into the scenery base).

I cut the two lengths of tubing with my cutoff tool ①, slid the smaller diameter inside the larger, and secured

them with quick setting epoxy ②. I also slid a straight pin into the opposite end of the $\frac{1}{16}$ "-diameter tubing and epoxied it in place ③. While I had the epoxy out, I added a small V-shaped bracket, cut from a scrap of styrene strip, to tie the flag rope to.

I brush-painted the pole Model Master 4679 Steel [With the Model Master line of paints discontinued by the Testor Corp., substitute another silver shade. — Ed.] ④.

STEP 3 PUTTING IT ALL TOGETHER



I applied some white glue to the edge of the flag with a toothpick and attached it to the top of the pole ①. Once it dried, I added a length of rope (tan button thread). After doubling the thread over, I ran it through some white glue between my fingers ②. This causes the thread to straighten out and at the same time allows you to glue it to the pole. I placed the still-wet thread along side the

pole, pressing into place as I did so ③. Once everything had thoroughly dried, I poked a hole into the "ground goop" in front of the post office with an awl, pushed the pole into place, and I was done.

Now the folks in Kingfield are following government regulations regarding their post office, and it all happened in one evening. **MR**

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Weathering in batches



Dave Abeles recently added a pair of Conrail General Electric C30-7 diesels to his well-known HO scale Onondaga Cutoff layout. Learn the easy-to-follow techniques he used to weather the two Rapido Trains models at the same time.



Get realistic results using these easy-to-follow techniques

By Dave Abeles • Photos by the author

Rapido Trains Inc. recently released its first run of the General Electric C30-7 diesel locomotive in HO scale. The full-size six-axle engine was a common prototype from 1977 through the early part of the 21st century. The model is a welcome addition to the high-end, Digital Command Control-equipped locomotive market. I needed examples of these units to fill a gap in the roster on my Conrail Onondaga Cutoff (OC) layout.

I ordered two of the six-axle locomotives decorated for Conrail. The paint on the Rapido models is well done, representing units as they appeared when they arrived on the property in 1977. These were some of the first locomotives ordered new by Conrail.

However, for my layout the fresh paint wouldn't look appropriate. Why? Because the Onondaga Cutoff is set in 1994. That means the paint on the newest Conrail C30-7s had endured more than 15 years of hard labor. A decade

and a half is a long time for locomotives that run 24 hours a day, seven days a week through hot summer days and frigid winter nights.

In the 1990s, full-size Conrail's locomotives were well maintained. However, faded paint, road grime, and rust were evident. Re-creating those elements offered a way to tell a visual story of two similar, but different, examples of Conrail C30-7 diesels during that time.

Instead of weathering the two units separately, I worked on them at the same time, a process I call batch weathering. In addition to locomotives, this technique can be used for rolling stock, structures, vehicles, and even figures. It's an enjoyable process and an effective way to take a pair (or larger group) of similar models and give them subtle differences that help tell your layout's story. Follow along as I share how I batch weathered two Conrail C30-7 diesels for my Onondaga Cutoff layout.

Getting started



Unboxing new locomotives is always exciting, especially these days when the detail parts have already been added and the warning labels and other small items come factory-applied. When I get new models, I enjoy making a builder's photo to document the experience, much like prototype locomotive manufacturers do. I posed Conrail C30-7 diesels 6600 and 6608 next to Onondaga Yard on my layout **1**. This also provided a perfect opportunity to test run both units and take care of any decoder programming.

Getting started (cont'd)



After I'd programmed both diesels and checked to make sure there were no factory defects, it was time for the creative fun to begin. I laid paper towels on the workbench to catch errant details as well as any excess weathering products during this multi-step process ②.

In addition to preparing the work space, it's also a good idea to gently clean models prior to weathering. Dust, skin oils, and other impurities may effect how washes, paint, and weathering powders adhere to a model. A cloth and 70% isopropyl alcohol is one common method for cleaning models. However, it's a good idea to test any cleaning products on an inconspicuous spot to make sure they don't remove the paint or printing. Once the models are clean, only handle them while wearing powder-free nitrile or latex gloves.

Adding depth



Great weathering jobs often take time and are built up in layers with different techniques to capture the look of the prototype. And as you can see here, you don't have to spend hours taking the models apart to get realistic results.

For the Rapido GE C30-7 diesels, I began with several shades of brown and gray Tamiya Panel Line Accent Color ①. Use this product in a well-ventilated area and follow all manufacturer-recommended safety practices.

I used the factory-diluted enamel paints to highlight doors and seams on the long hood to match prototype photos of the six-axle road units. Battery box doors are another common area for rust to accumulate. I applied more grit and rust to the 6600 than the 6608.

I turned to the black Panel Line in areas that required dark contrast, such as the radiator grills ②, as well as areas near the exhaust stack on the top of the long hood. A nice feature of the Tamiya product is the paint is extra thin and capillary action pulls it into the molded lines. This helps to simulate the buildup of grime in the depths of protected areas, such as seams in the carbody and door seals.

The radiator cores were another area that benefited from some black Panel Line. Rapido did a beautiful job with the see-through grating that's glued in place. Rather than risk damage to the delicate etched-metal parts, I applied Panel Line into the holes and let it run down to the cores below ③. I wiped off any excess with a paper towel, leaving the thinned paint only in the radiator cores.

Flat finish



With the Tamiya Panel Line in place, I moved to the next step, applying a clear flat finish. To prevent the cab window glazing and headlights from getting a frosted finish, I covered these locations with a mix of masking and painter's tape ①. I cut the tape to fit each location. The tape can be left in place for several days while the subsequent weathering products are applied.



A clear flat finish is an important step in the weathering process. I prefer to apply it after the base coats of Tamiya Panel Line Accent Color are in place, but before adding more effects with an airbrush and weathering powders.

The Rapido paint is compatible with Tamiya TS-80 Flat Clear ②. I applied the flat coat to the models in a vented spray booth.

Location-specific effects



Locomotives have different mandated maintenance cycles and receive upgrades at various times. Items that wear out, such as brake shoes, hoses, bearings, and pedestal liners (the plates lining the brackets on each truck sideframe that hold the bearings and axles in place) often get replaced when a locomotive is shopped for inspections.

Pedestal liners are manufactured by different vendors and are supplied in different colors. Painting them suggests a locomotive was recently shopped. I used a brush and Polly Scale Foliage Green to capture the look of replaced liners on the 6600 ①. I left the liners on the 6608 in original black.

It doesn't take long for the exhaust stack area on diesel locomotives to become filthy. Additional weathering can be applied as the process continues. Note how the Panel Line helps define the doors and details, and how deep the radiator cores look after the Flat Clear was applied ②.

Extra Panel Line can be added to areas that need more definition ③. Excess can be wiped off when wet with a paper towel.

Airbrush weathering



I headed back to the spray booth for the next weathering layer, this time applied with an airbrush. I used flat white paint, thinned 5:1, as a fade coat. This helps take away the fresh look of the factory paint. I used Sienna, thinned 4:1, to add grime to the underframe **1**.

Weathering the two units coat by coat, one after the other, let me compare the overall look of both models. You can see my goal of having the 6600 look a bit worse for wear is well underway in **2**. I wanted the 6608 to be a bit more faded compared to the 6600. This was a simple task of adding one more fade coat.

I let both models dry overnight. The next day, I placed the C30-7 diesels side by side for another comparison. Note how the fade coat smoothed out some of the weathering colors while drawing detail out on the factory-painted shell and frame **3**.

A potpourri of techniques



Satisfied with how the fade and grime looked, it was time to add character to each model with pigments and weathering powders. I used a mix of Ammo by Mig pigments and washes, along with powders from Bragdon Enterprises **1**, on the Conrail C30-7 diesel locomotives.



Different brushes help with different applications. I used a stiffer brush to apply colors that appeared to be ground into the paint, like the soot around the exhaust stack **2**. Softer brushes are better suited for adding dust and prototypical highlights.



I turned to AK Interactive weathering paint markers to add rust detail to the battery box doors and other locations prone to corrosion. I started with darker marks and used my finger to pull the drying paint down in a vertical motion **3**. I used lighter colors sparingly to represent fresh rust spots.



Don't overlook the walkways when weathering diesels. I used Dark Dust powders to highlight the walkways and Mig Dark Steel powder to simulate areas where the paint has worn away on the treadplate under foot traffic and heavy use **4**.

Finishing touches



With the bulk of the weathering completed, I used tweezers to remove the masking from the windows and headlights **1**. This is the highlight of any weathering job. The contrast between the clean areas and the dirt and grime on the rest of the model is great.

I cut the masks for the front windows with curves to match the profile of the wipers. After I removed the tape, the glazing in the path of the wipers was clean while the edges were dirty **2**. This suggests a hard-working locomotive that's earning its keep.

A few final steps brought these weathering projects to the finish line. I applied different amounts of Mig Fresh



Engine Oil, an oil-based paint that dries shiny to look like spilled fuel. I applied a touch of this product to the gauges, fillers, and levels. I used a fine Microbrush to apply a few streaks of Fresh Engine Oil down the sides of the tank **3**.

Finally, I painted the blackened metal wheels. With the layout power on, I advanced the throttle while holding the locomotive in place. As the wheels were spinning, I used another fine Microbrush to apply rusty brown paint **4**. Then I cleaned the wheel treads with mineral spirits.

With that, Conrail 6600 and 6608 were ready to enter service. Batch weathering gives models a similar, yet different, appearance, just like the prototypes. **MR**



The journey of **COLORADO & SOUTHERN EXTRA 69 EAST**



Timetable-and-train-order operation doesn't have to be as difficult as it seems

By Doug Tagsold • Photos by Craig Wilson

Though many model railroaders are interested in operating their model railroads, some feel learning the rules for timetable-and-train-order (TTTO) operation is too difficult. Indeed it can be intimidating, as it was for me. However, I learned that by taking it little by little, one step at a time, my operating crew and I were soon able to understand the basics of it,

and were soon having fun with TTTO operation on my Colorado & Southern layout. As numerous operating sessions went by, we began learning the finer points of the operation, and the operating rules that go with it.

But to first get started, let's keep it simple. Just remember that first class trains are superior to second class trains, second class trains are superior to third class trains, and all of those

trains are superior to extra trains. First, second, and third class trains (if there are any) will be listed on a timetable. The timetable states where each of those superior trains should be throughout their run across the railroad. They might get late, but by rule, they can never leave a station earlier than the time listed on the timetable. If they do fall behind their schedule, an extra train must still wait for them.

Extra 69 East follows the headwaters of Clear Creek between Georgetown and Idaho Springs on Doug Tagsold's Colorado & Southern. Follow along as the crew navigates the timetable-and-train-order operated railroad.



① C&S engine No. 69 backs out of the roundhouse in Silver Plume. The first work for the day is to pick up three loaded gondolas at the Burleigh Mine in Silver Plume.



② Extra 69 East passes through downtown Georgetown. The order board on the Georgetown station shows no new orders, so Extra 69 East proceeds past the station without stopping.



③ Extra 69 East arrives at Idaho Springs. The train will stop here to pick up additional ore loads.

Only an order from the dispatcher can relieve extras from their responsibility to wait [The same goes for other inferior trains. — *Ed.*]

Extra trains are not listed on the timetable, so it is up to their crews to determine when they can safely move on to the main line while still keeping clear of the superior trains listed on the timetable. That is where the challenge (and fun) of TTTO operation begins. So let's climb aboard Extra 69 East as it makes its eastward journey from Silver Plume to Denver.

Imagine it's a mild August morning in 1925 as we get to climb aboard Colorado & Southern 2-8-0 steam locomotive No. 69 at Silver Plume and ride it east to South Denver. Engineer TJ Stratton and conductor Craig Wilson are the crew on duty today, called to run our ore extra east to South Denver. Let's go meet them at the Silver Plume roundhouse.

On duty at 7 a.m., engineer Stratton backs No. 69 out of the Silver Plume roundhouse ①. The first work of the day is to pick up three gondolas loaded with low grade gold ore at the Burleigh Mine in Silver Plume. The crew then reviews the orders they received from the Silver Plume station agent. The order reads: To "C&E Engine 69 at Silver Plume," "Engine 69 run extra Silver Plume to South Denver." With a quick glance at the timetable, the crew sees they have three superior westbound trains to watch out for on their eastward trip to South Denver this morning.

Train No. 101 leaves Denver Yard at 7:45 a.m., and No. 103 leaves South Denver Yard at 8:55 a.m. Both are second class freights, one to Silver Plume and the other to Black Hawk. The third train, No. 51, is a first class passenger train from Denver Union Station to Silver Plume departing at 11:45 a.m. The crew of C&S No. 69 did not receive orders to meet any westbound extra trains, so unless they receive any additional orders down the road, they will only have to meet these three superior trains listed on the timetable.

Finished with their work at Silver Plume at 7:45 a.m., conductor Wilson looks at the timetable and sees it will be several hours before any of the superior trains will be getting close, so he instructs engineer Stratton to "Highball" east toward Denver.

Extra 69 East crosses over the Devils Gate viaduct and around the famous Georgetown Loop between Silver Plume and Georgetown. At 8:05 a.m., our train

COLORADO & SOUTHERN RAILROAD										
Northern Division										
WESTBOUND				CLEAR CREEK DISTRICT Timetable No. 8, Jan. 2, 1924					EASTBOUND	
		FIRST CLASS					FIRST CLASS		SECOND CLASS	
103 Freight	101 Freight		51 Passenger	Mile Post	STATIONS	Siding Capacity	52 Passenger		104 Freight	102 Freight
Daily	Daily		Daily		UNION STATION SOUTH DENVER R		Daily		Daily	Daily
AM	AM		AM				PM		PM	PM
Lv 8:55			Lv 11:45				0.0	--	Ar 6:45	
↓	Lv 7:45		↓	1.5	DENVER YARD R Y,W,C,T,P	Yard	↑		↑	Ar 5:45
↓	7:50		↓	2.0	WAZEE Y	18				5:40
9:05	7:55		11:55	3.5	Y,P C&S JCT. R	8	6:35		4:35	5:35
9:15	8:05		Ar 12:05 Lv 12:15	7.2	WHEAT RIDGE Y,W,P	12	Lv 6:25 Ar 6:20		4:25	5:25
9:30	8:20		Ar 12:30 Lv 12:35	13.5	ARVADA Y,P	8	Lv 6:05 Ar 6:00		4:10	5:10
9:40	8:30		Ar 12:45 Lv 1:00	15.7	GOLDEN R Y,W,T,P	15	Lv 5:50 Ar 5:35		4:00	5:00
9:55	8:45		F 1:15	20.3	ELK CREEK W	8	F 5:20		3:45	4:45
10:05	8:55		F 1:25	25.8	BIG HILL	8	F 5:10		3:35	4:35
Ar 10:15 Lv 10:20	Ar 9:05 Lv 9:10		Ar 1:35 Lv 1:50	28.6	FORKS CREEK R Y,W,P	15	Lv 5:00 Ar 4:55		Lv 3:25 Ar 3:20	Lv 4:25 Ar 4:20
	9:20		Ar 2:00 Lv 2:05	32.9	LAWSON Y,W,P,T	10	Lv 4:45 Ar 4:40		↑	4:15
	9:30		F 2:15	34.1	FLOYD HILL W	12	Ar 4:30			4:05
	Ar 9:50 Lv 10:30		Ar 2:35 Lv 2:45	39.2	IDAHO SPRINGS Y,W,C,P	12	Lv 4:10 Ar 4:05			Lv 3:45 Ar 2:55
	Ar 10:40 Lv 11:15		Ar 2:55 Lv 3:00	43.8	GEORGETOWN Y,W,P	8	Lv 3:55 Ar 3:45			Lv 2:45 Ar 2:15
↓	Ar 11:30		Ar 3:15	50.6	SILVER PLUME R Y,W,T,P	6	Lv 3:30			Lv 2:00
↓										
10:30				33.3	SMITH HILL W	-----			3:10	
Ar 10:40				38.0	BLACK HAWK R Y,W,C,T,P	Yard			Lv 3:00	
				39.7	CENTRAL CITY Y,W	5				
AM	AM		PM				PM		PM	PM
Station Codes: "R" Register "W" Water "C" Coal "P" Phone "T" Turntable "Y" Yard Limits "S" Stop "F" Flag Stop										

passes through Georgetown ❷. The station order board displays “clear,” meaning there are no new orders to pick up. With no work to do in Georgetown, and still several hours before westbound train No. 101 will be due, conductor Wilson gives engineer Stratton the signal to “Highball” yet again.

Extra 69 East arrives in Idaho Springs at 8:15 a.m. ❸, opposite, and begins its work there, picking up three additional ore loads at the Argo Tunnel load out ❹, next page. After completing the work, conductor Wilson checks his watch, and the timetable. It is now 8:50 a.m. He sees

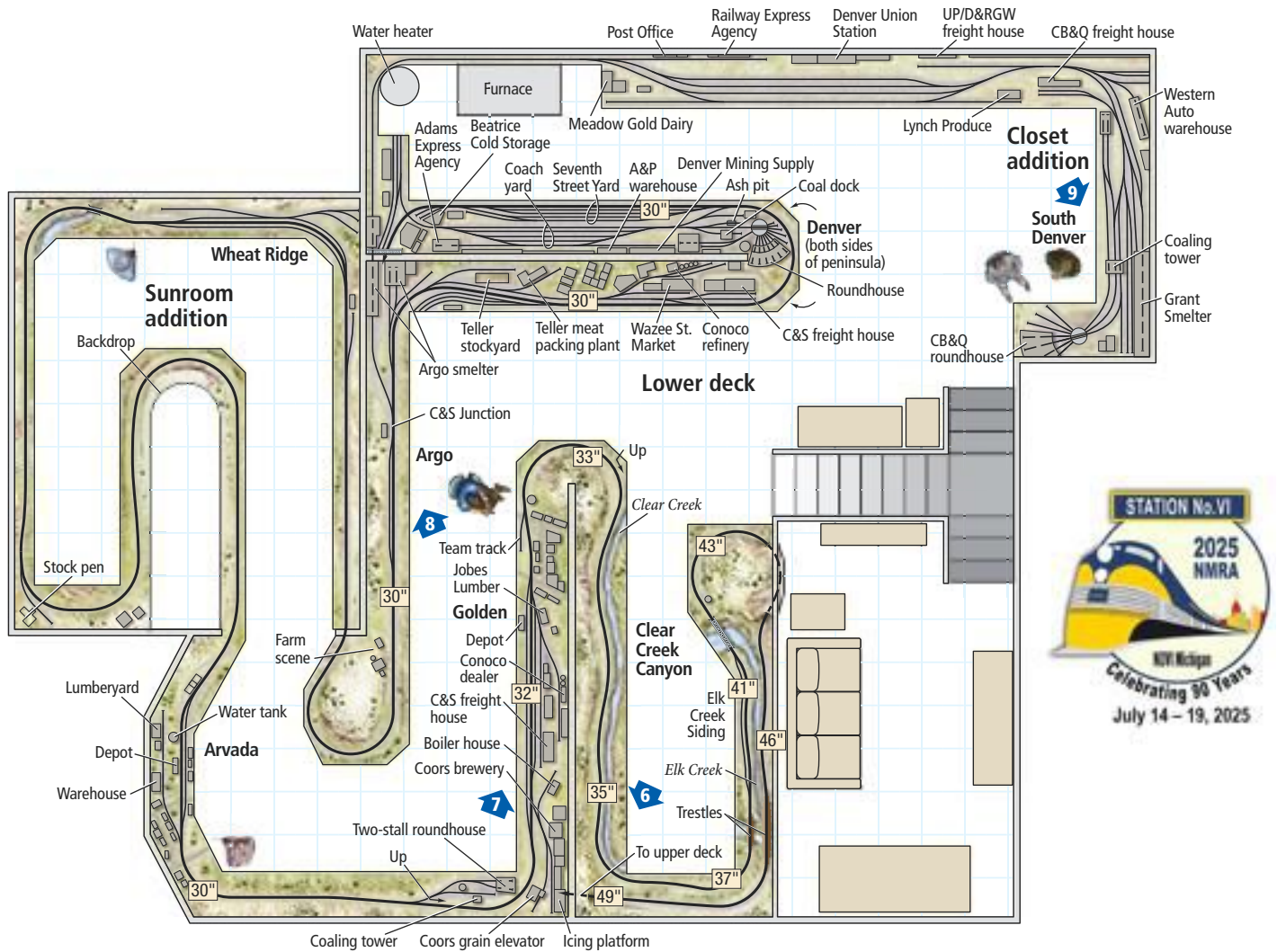
that the running time from Idaho Springs to the next passing siding at Floyd Hill is 20 minutes (based on the running times of the scheduled trains), and he also sees that train No. 101 is due at Floyd Hill at 9:30 a.m. Rules require that an inferior train, such as Extra 69 East, must be in the clear five minutes ahead of the time of an opposing superior train.

So by those calculations, if they leave now, Extra 69 East should arrive at Floyd Hill at 9:10 a.m. That gives them plenty of time to pull into the siding before the arrival on No. 101 at 9:30. Conductor Wilson gives the signal “Highball.”

Between Idaho Springs and Floyd Hill, our train continues eastward. A light snowfall the night before has left this portion of Clear Creek Canyon decorated with a light dusting of snow.

Extra 69 East is waiting in the siding at Floyd Hill as No. 101 passes by on the main line, right on time at 9:30 a.m. Before Extra 69 East leaves, conductor Wilson checks the timetable to see how they stand against the other two morning trains out of Denver. No. 103 is due into Forks Creek at 10:15 a.m., and passenger train No. 51 isn’t due to leave Denver until 11:45 a.m. “Highball!”

Continued on page 38

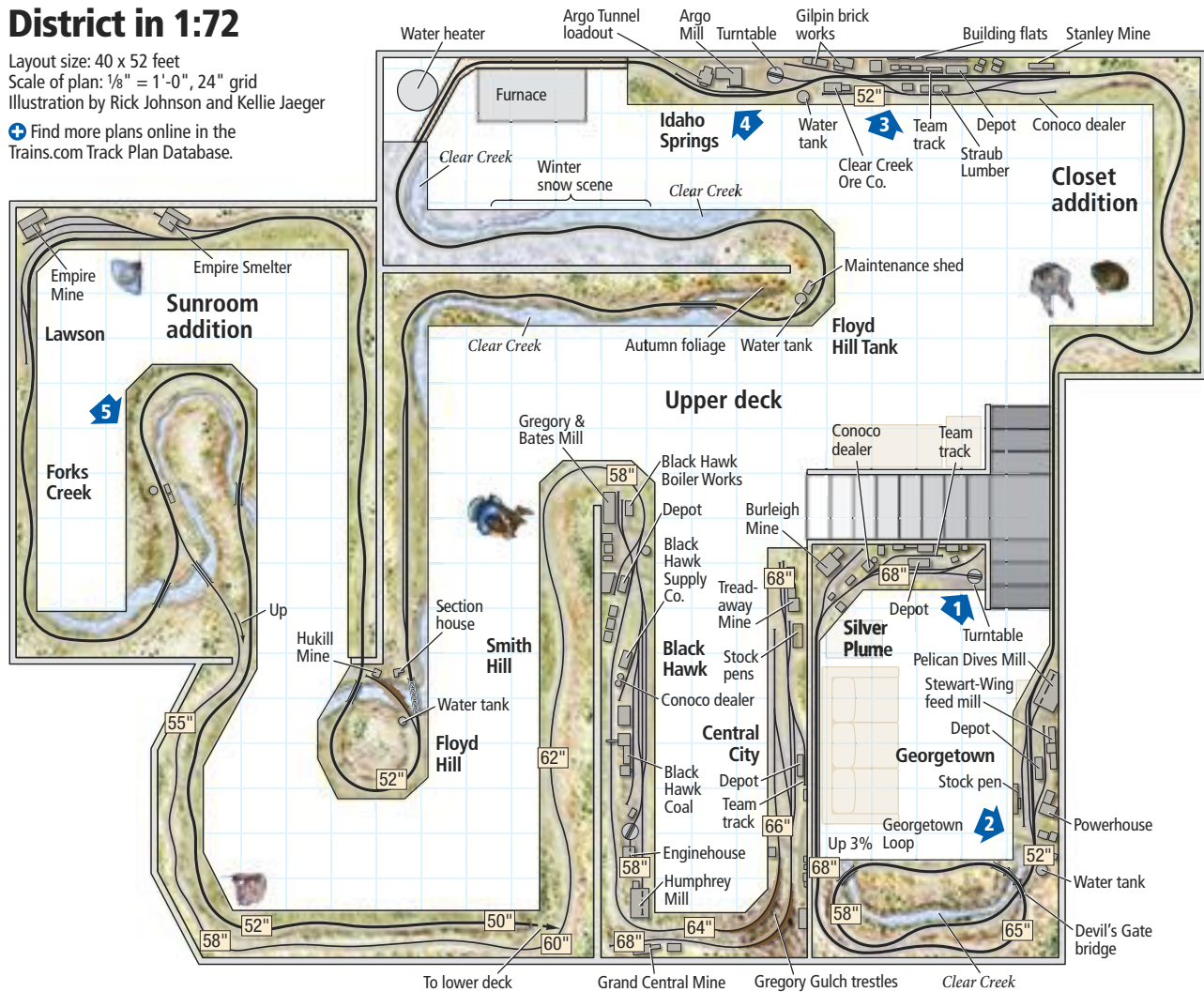


④ Our train picked up three more loaded gondolas of ore at the Argo Tunnel load-out in Idaho Springs.

C&S Clear Creek District in 1:72

Layout size: 40 x 52 feet
Scale of plan: 1/8" = 1'-0", 24" grid
Illustration by Rick Johnson and Kellie Jaeger

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



5 Extra 69 East stops at Forks Creek to line the switch and pull into the siding.

The layout at a glance

Name: C&S Clear Creek District
Scale: 1:72
Size: 40 x 52 feet
Prototype: C&S Clear Creek District
Locale: Denver to Rocky Mountains
Era: 1920s
Style: Double-deck linear walkaround
Mainline run: 725 feet plus branch line
Minimum radius: 24"
Minimum turnout: No. 6
Maximum grade: 3%
Benchwork: open grid
Height: 30" to 70"
Roadbed: cork on insulation board
Track: code 70 and 83 flextrack with re-spaced ties
Scenery: plaster gauze strips over screen
Backdrop: drywall and aluminum sheet
Control: CVP Products EasyDCC



6 A light application of air to the brakes is necessary as Extra 69 East descends the 2% grade in Clear Creek Canyon.

Continued from page 35

Extra 69 East arrives at Forks Creek at 9:50 a.m. 5, previous. The timetable shows No. 103 due out of Big Hill at 10:05 a.m. Wilson determines that with the 10 minutes running time from Forks Creek to Big Hill, and the rule for an inferior train to be in the clear five minutes prior to the superior trains time, we should not try to run to Big Hill now.

Instead, he has our train to pull into the siding here at Forks Creek and wait

for the arrival of No. 103. At 10:15 there is no sign of train No. 103. But because it's the superior train, Extra 69 East must continue to wait. Finally, No. 103 arrives and passes our waiting train at 10:35 a.m. No problem, we still have plenty of time to move eastward. The next train we have to meet, No. 51, doesn't leave Denver for another hour yet. Highball!

It's a slow descent down the 2% grade in Clear Creek Canyon between Big Hill and Golden. A light application of air to

the brakes is required to keep our heavy train of ore under control 6.

Extra 69 East rolls through Golden at 11:10 a.m. 7. Conductor Wilson starts to figure out where to meet No. 51. He figures that barring any unexpected delays, our train should pass through Arvada at 11:20 a.m., Wheat Ridge at 11:35 a.m., and make it to C&S Junction at 11:45 a.m., 10 minutes before No. 51 is due there. He signals engineer Stratton to proceed. Wilson says he will check our time when we get to Wheat Ridge. He figures as long as we are through there before 11:40, we can make it to C&S Junction in time. If not, we can always wait in the siding at Wheat Ridge to meet No. 51.

With no unexpected delays, Extra 69 East arrives in the siding at C&S Junction just as expected at 11:45 a.m. A less experienced conductor may have decided to have their train wait at Wheat Ridge, and that would have been fine. But the crack crew of Wilson and Stratton have made this trip over the line many times before and they know well the capabilities of C&S 2-8-0 No. 69. Their decision to proceed was never in doubt. Train No. 51 passes by on the main line right on time at 11:55 a.m. 8. Once No. 51 has cleared, Extra 69 East continues east to South Denver.

At 12:15 p.m. engine No. 69 delivers its train of ore loads to the Grant Smelter in South Denver 9, opposite. The crew



7 Extra 69 East passes through Golden on its run to Denver.

will then take the engine to the round-house for servicing and inspection. Engineer Stratton and conductor Wilson will “Go for beans” (lunch), returning later to build their return train of empty ore cars to deliver to the mines on their way back to Silver Plume later this afternoon. On their way back they will need to decide where to meet the same superior trains that they met this morning, as those trains will be returning back to Denver in the afternoon as trains No. 102, 104, and 52.

When I host operating sessions with fewer than a full complement of crew members, which is probably half of the time, we run without a dispatcher. The story above, the journey of Extra 69 East, was actually run without a dispatcher. We either just pretend that we have actual running orders and clearances, or I can make them up ahead of time. All that is needed is a timetable, and a clock.

Many of these sessions without a dispatcher run more smoothly than the ones when we do have one. My suggestion for a layout with operators new to TTTO operation is to start out slowly,



8 First class passenger train No. 51 on the main line passes by Extra 69 East sitting in the siding at C&S Junction.

without all of the paperwork and a dispatcher, and run a fairly simple session with just the clock and a timetable.

Perhaps have all trains running in one direction be scheduled on the timetable, and have all of the opposing direction trains run as extras. Let the extra train crews figure out their meets, just as Extra 69 East did. With this simple approach, new operators may feel less intimidated and more willing to try TTTO operation. Of course mistakes will be made, but you may be surprised

at how quickly crew members catch on and find they like it.

For another look at the journey of Extra 69 East, and all of the other trains run during the operating session, search YouTube for “Colorado & Southern Clear Operating Session.” [MR](#)

Doug Tagsold is a regular contributor to Model Railroader and its special issues. His Colorado & Southern Clear Creek District was featured in Model Railroad Planning 2018.



9 Engine 69 has run around its train and shoves the gondolas of low-grade gold ore into the Grant Smelter in South Denver.



Trains at Ashland (foreground) and Reserve, Wis., are staged and ready for an operating session on the Rice Lake, Dallas & Menomonie. Bob Wundrock explains how he added two branch lines on a shelf on the third version of his HO scale layout.

Two branch lines, one shelf

A veteran modeler shares tips on how he enhanced his new HO scale layout

By Bob Wundrock • Photos by the author

When I began work on the third version of my HO scale Rice Lake, Dallas & Menomonie layout, I wanted to incorporate some design elements that I'd previously used and also try some new things. The available space for the new layout, 8 x 32 feet, is about 40% of what I had for my prior model railroad.

On version two of the RLD&M, featured in the September 2019 issue of *Model Railroader*, I had two of the three

branch lines hidden inside of a helix. They essentially were staging tracks for turn trains. This time around, I wanted to incorporate the branch lines but have them out in the open.

Setting the stage

I marked-off a 1 x 8-foot section at one end of the layout to serve as staging for the Reserve and Ashland, Wis.,

branchline tracks. This area is separated from the rest of the model railroad by a 16"-high tempered hardboard backdrop. There's a 2-foot-wide aisle between the layout and the wall.

I hadn't planned on finishing the Reserve and Ashland branch line area. Why? Because a casual observer can't see it when visiting unless they walk to the far end of the model railroad. In fact, I've have to direct people to "head to the



1 Close, but distant. With just 12" to work with, making Ashland and Reserve look like distant locations wasn't easy. Bob placed 1"-thick extruded-foam insulation board under Reserve to provide grade separation with Ashland.



2 Time for track. Bob used track nails to secure the flextrack and turnouts to Homasote at Ashland and cork at Reserve. The tracks passing through the backdrop go to Rice Lake. The Soo Line freight house in Ashland is also visible.



3 Testing ideas. Many creative solutions have been used over the years to mask openings in the backdrop. Bob experimented with different tree placement to make the exit portals for the two lines less noticeable.

(basement) window and turn left" to view the section.

The branch lines represent Reserve and Ashland in the northwestern part of the Badger State. Historically, Reserve was the northern edge of the original RLD&M where logs were loaded to be shipped south to lumber mills.

Ashland's history was tied to iron ore mining in the area. The pellets were then loaded into Great Lakes ore boats. My layout is set in the early 1950s, and by that time the ore trade had largely faded. Shipments to and from my HO scale version of Ashland are primarily pulpwood and general freight.

Laying track

My current model railroad is generally flat. The design was purposeful to assist me in its construction due to a physical disability. I wanted to separate the two locations on the branch line, but the scene is only 12" deep. I decided on a



4 A scenic solution. To hide the edge of the 1"-thick extruded-foam insulation board between scenes, Bob installed a cast plaster stone block wall. He made the mold for the wall more than 25 years ago.



5 Into the woods. Bob used photos of pine trees from online sources and deciduous trees that he took to make a photo backdrop. He manipulated and expanded the images using Photoshop Elements.

1" grade separation using extruded-foam insulation board to raise the tracks at Reserve **1**, previous page.

I used Homasote over 1/2" plywood for the roadbed on my layout. Nailing track to Homasote worked great. However, nails don't hold as well in insulation board. I'm not a fan of attaching track with glue or caulk. At Reserve, I attached cork to the foam, which provided a surface for the track nails to bite into.

I was able to fit two tracks at each location. I used Peco and Atlas turnouts and Atlas code 100 flextrack **2**. I then airbrushed the track with Rail Brown.

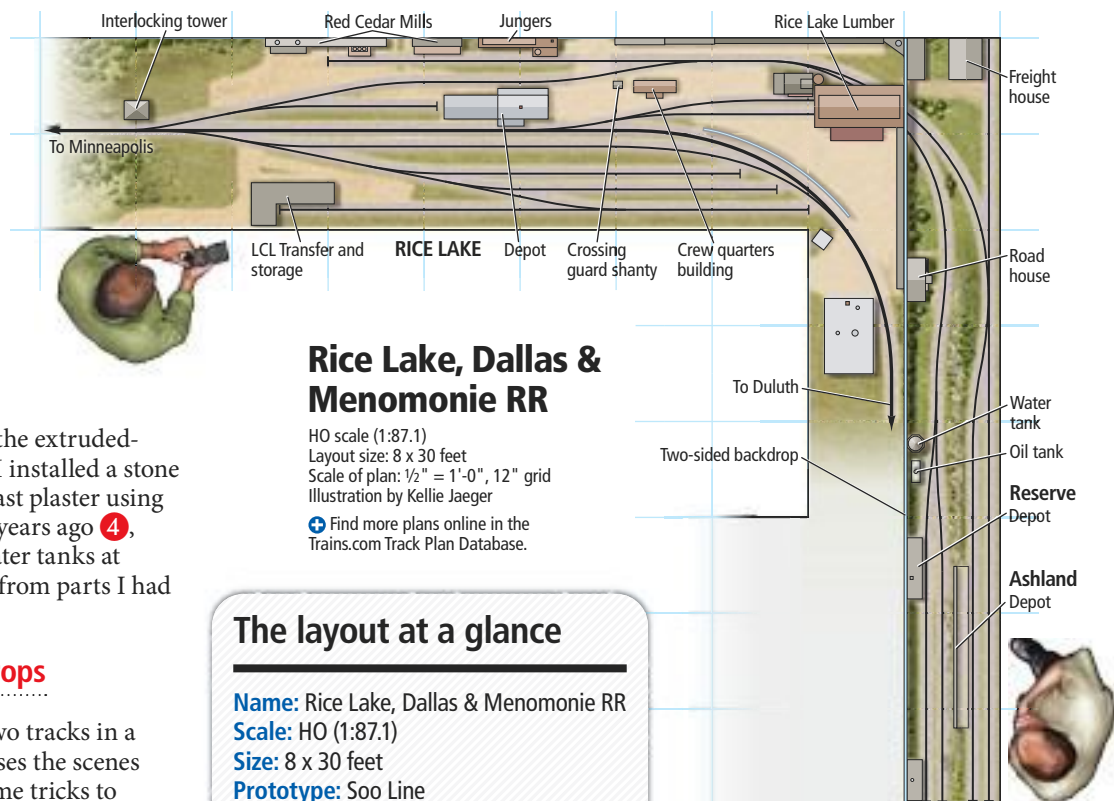
Once the paint had dried, I ballasted the track with sifted sand as described in the February 2014 MR. After grooming the sand, I wet it with a solution of 70% isopropyl alcohol tinted with black leather dye. A 50/50 mixture of white glue and water secured the ballast.

Scenery on the quick

I used a combination of Woodland Scenics and Scenic Express materials for the ground cover. Flocked conifer trees partially hide the holes in the backdrop that connect the branch lines with Rice Lake. The trees were given to me years ago and I don't remember the manufacturer. The deciduous trees are flocked Scenic Express SuperTrees **3**.



6 One building, two purposes. The Reserve, Wis., depot is half of an old plastic kit that Bob had in his scrap box. The structure, upgraded with paint and Bar Mills shingles, also masks a block supporting the backdrop.



Rice Lake, Dallas & Menomonie RR

HO scale (1:87.1)
Layout size: 8 x 30 feet
Scale of plan: 1/2" = 1'-0", 12" grid
Illustration by Kellie Jaeger
Find more plans online in the
Trains.com Track Plan Database.

To mask the edge of the extruded-foam insulation board, I installed a stone block wall made from cast plaster using a mold I made some 25 years ago [4](#), opposite. The oil and water tanks at Reserve were kitbashed from parts I had on hand.

Northwoods backdrops

Having two sets of two tracks in a 12"-wide space compresses the scenes a bit. I needed to use some tricks to increase the believability that there are two distinct locations physically adjacent to each other.

Photo backdrops are one tool I've used to assist with this. They've helped expand scenes on the layout, especially on the branch line. I used images of tall pine trees as well as a log pond near the depot at Reserve. The scenes are a mix of images I found online and ones in my photo collection.

In order to cover the 8-foot long tempered-hardboard backdrop, which I first painted sky blue, I had to edit and expand the images using Photoshop Elements [5](#). Then I electronically cut the images into manageable sections and had them commercially printed.

After removing the sky from the photos, they were installed starting at the farthest visible point; I overlapped the edges of each subsequent section. Using this approach, one can't readily see the seams. I used 3M Super 77 spray adhesive to attach the photos.

Strategic structures

The 8-foot long backdrop is supported by four 4" 2 x 2 blocks on the lower edge that are attached to the layout with screws. The 1"-thick extruded-foam insulation board covered up most, but not all, of the blocks in Reserve. I used a small utility building from my scrap box to cover one of the blocks.

For another I used half of an old depot that I cut but never used when

The layout at a glance

Name: Rice Lake, Dallas & Menomonie RR
Scale: HO (1:87.1)
Size: 8 x 30 feet
Prototype: Soo Line
Locale: northwestern Wisconsin
Era: early 1950s
Style: walkaround
Mainline run: 50 feet
Minimum radius: 30" (main), 18" (branch)
Minimum turnout: No. 5 (main), No. 4 (branch)
Maximum grade: none
Benchmark: L-girder
Height: 44"
Roadbed: 1/2" plywood covered with 1/2" Homasote
Track: Atlas code 100 flextrack, Peco and Atlas turnouts
Scenery: extruded-foam insulation board for elevations
Backdrop: photos on 1/8" tempered hardboard
Control: Digitrax Digital Command Control

constructing my previous layout in the early 1990s [6](#). A bit of paint and some Bar Mills shingles upgraded the plastic structure. Another partial building from my scrap box covered the block on the far end.

One remaining block was at the sloping transition between the extruded-foam insulation board and layout base. I covered it with a two-level, scratchbuilt roadhouse, as seen on the next page.

I've long admired Lance Mindheim's technique of merging prototype photos with traditional modeling techniques (photo-laminating), so I gave it a try on

the roadhouse. I first made a cardstock mock-up to work out the dimensions of the sloping base. Once I was satisfied with the building's size, I built a styrene substructure. Then I used a nibbling cutter to remove material where the doors and windows would be located. I spray-painted the substructure with Rust-Oleum gray primer.

I started searching for appropriate siding photos online and found one of weathered clapboard. I expanded the image using Photoshop Elements. The lower level features a weathered brick image that I had in my photo collection. I used an expanded image of wood shakes that I found online for the roof.

I printed the images on matte photo paper and cut them a bit larger than needed. I used 3M Super 77 spray adhesive to attach the photos to the styrene core. Then I cut the door and window openings and around the overlapped edges with a sharp razor knife.

The windows and doors are from Grandt Line (now San Juan Details), and the stairway is from Central Valley. I scratchbuilt the porch from basswood. The chimneys are metal castings. I used PanPastel products to weather the roadhouse [7](#), next page.

Unless a viewer is very close to the building, the siding and shingles look three-dimensional. And, if you get really close, you can see the nail holes in the clapboard siding.



7 A clever solution. Bob scratchbuilt this two-story roadhouse to mask another backdrop support. He used the photo-laminate method to cover the building's styrene core with prototype images; the doors and windows are HO scale parts.



8 Signature structure. A model of the Ashland depot would be far too large for Bob's compact scene. As a workaround, he attached a prototype photo of the front of the structure to a piece of $\frac{3}{16}$ " black foam board.



9 Train time. The two branch lines generate additional traffic for Bob's HO scale Rice Lake, Dallas & Menomonie. Freight and passenger trains come off the Ashland branch (foreground), while a daily log train runs from Reserve to Rice Lake.

Ashland depot

The full-size Ashland depot was a large, cut-stone structure occupied by the Northern Pacific and Soo Line. I wanted to have the building on the Ashland branch, but didn't have space for a three-dimensional version of it.

As a workaround, I found a suitable photo of the structure online. I removed some of the anachronistic late 20th century elements using Photoshop Elements. Then I reduced the image in size and had it commercially printed. I attached it to a piece of $\frac{3}{16}$ "-thick black foam core with 3M Super 77 spray adhesive. Then I cut it to shape with a sharp razor knife.

I attached the depot flat to the layout with $\frac{1}{2}$ " crafter's hook-and-loop dots that my wife had in her supplies. This lets me easily remove the depot if I need to reach the Reserve area directly behind it. I now had a representative depot that took up very little space **8**.

Running trains

Initially, I planned only one track per branch line. After thinking ahead to operations, I added a second track for each. I also included a facing-point spur to the freight house, a Woodland Scenics product, at the far end of Ashland. Freight trains switch this on the return trip from Minneapolis.

From Ashland there's a daily freight turn that runs to the other end of the layout at Minneapolis. It does any required work en route before returning later in the op session. I also operate a passenger train once per session to Minneapolis and return.

One log train per day runs from Reserve to Rice Lake, located on the other side of the backdrop. It does work there and returns to Reserve. The second track at Reserve currently represents the town of Birchwood and is used to store cars not moving during a session **9**.

Even though this branch line area is complete, I'm already thinking about adding a small triangular section near the freight house with a passing siding to assist in switching. A model railroad is never finished. **MR**

Bob Wundrock and his wife live in DeForest, Wis. He is a National Model Railroad Association Master Model Railroader and a longtime member of the South Central Wisconsin Division. Bob, an occasional contributor to MR, is currently working on his third edition of the Rice Lake, Dallas & Menomonie in HO.

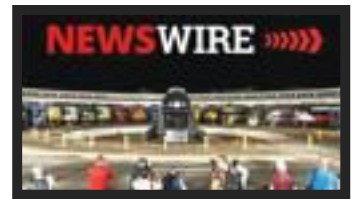
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Modeling an abandoned railroad

By Tony Koester

Photos by the author or as noted

Add a sense of history and even operating challenges

This should probably appear in the April issue, but just think of the possibilities: By modeling an abandoned railroad, all you'd have to do is to glue down some ties, toss in some ballast and weeds, and you're done with trackwork. No messing around with rails, turnouts, crossing diamonds, track cleaning, wires, power systems, you name it!

But let's be a bit more practical than that. After all, actually running trains generates most of the enjoyment that we derive out of scale model railroading.

So a compromise is in order: We'll consider modeling only a complementary segment of an abandoned railroad instead.

Adding a sense of history

I did just that on both of my model railroads. On my current railroad, the abandoned crossing with the Chicago, Attica & Southern at the south edge of Veedersburg, Ind., is depicted with ties in the weeds, and the Nickel Plate Road now switches the Wabash Clay brickyard that was once the sole province of CA&S crews.

(Wabash Clay made the bricks that originally paved the Indianapolis Speedway, thus earning the racetrack the "The Brickyard" nickname.)

The rail was so light that Nickel Plate Road steam power was prohibited from entering the brickyard and hence had to use freight cars as a handle, thus adding to operational interest.

The Allegheny Midland had a section of abandoned right-of-way along and across the Cheat River from the days when the shortline Ridgeley & Midland County was a slim-gauge railroad. Narrow-gauge cars shorn of their

trucks were used in a local coal yard as storage buildings and an office. Alas, I somehow neglected to take a photo of that.

But I did shoot a photo of the Cheat River valley while it was still under construction. Look carefully and you'll see old ties alongside abandoned coke ovens lining the west side of the river and a remaining pier from the previous narrow gauge bridge.

Ron Christensen has similarly modeled a section of an abandoned branch line marked by a strip of ties approaching the tower where the Milwaukee Road crosses



The shortline Chicago, Attica & Southern crossed the Nickel Plate Road's St. Louis line just south of Veedersburg, Ind., but was abandoned following World War II. The NKP then took over switching the Wabash Clay Products brickyard. The strip of ties (right foreground) is all that's left of the CA&S RoW.

his HO Chicago & North Western. Telegraph poles that used to carry wires that conveyed important information about everything from train movements to railroad business are now merely totem poles to a past glory. If the scrappers didn't quickly salvage the copper wire, thieves were sure to get it. The area

consumed is relatively minor, but it constitutes a mini-scene — one Ron salvaged from a previous layout — that is sure to generate intrigue.

The late Jack Ozanich's proto-freelanced Atlantic Great Eastern featured abutments where a Maine 2-footer once crossed overhead, thus helping to geographically



This abandoned branch approaching the Marshalltown Jct., Iowa, interlocking tower on Ron Christensen's HO Chicago & North Western creates visual interest. The Burlington train is detouring on the Milwaukee Road. Ron Christensen photo

anchor the AGE. So does an abandoned crossing with the electrified Cincinnati & Lake Erie on Bill Darnaby's HO Maumee Route.

Pages from the past

Remnants of an abandoned railroad can therefore be used in a variety of ways to

show that your railroad is more successful, that it ran in a specific locale, and/or that it took over sections of the abandoned railroad.

Showing remnants of an abandoned interurban line alongside a highway that parallels your "steam road" is another way to insert a bit of history and interest at almost no cost or effort. The power poles along the highway should reflect the heavier duty use that they were once asked to assume.

So some overgrown ballast, a strip of ties, some derelict telegraph poles, a tower where none seems warranted, and you have a story to tell. Not a bad investment in my opinion. [MR](#)

The standard gauge Ridgeley & Midland County was once a narrow-gauge railroad, but how would visitors become aware of that history? Old ties along an abandoned coke oven and a pier in the Cheat River prompted them to ask questions.





Chesapeake & Ohio class H-5 2-6-6-2 No. 1524 eases up to a water column at Rowland, W.Va., on John Brown's HO scale model railroad. Learn how he enhanced a 3-D printed kit from Yelton Models to match the Poage prototypes found on the C&O.

How to model **WATER COLUMNS**

3-D printing and detail parts
yield accurate HO scale models

By John Brown • Photos by the author



1 The prototype. The fireman has a firm grip on the spout stop as he fills the tender of C&O class K-4 2-8-4 No. 2755 with water. This Poage water column was located at Sproul, W.Va., in the southwest part of the state. Gene L. Huddleston photo



2 What you get. The Yelton Models HO scale Poage water column is a 3-D printed kit that consists of three parts. The unpainted column and spout are shown at left. The column base and concrete pad with drain, which John painted, can be seen at right.



3 Working on the spout. John modified the hole in the back of the spout where it fits over the water spigot so it would sit lower. He also added a formed wire Detail Associates eyebolt, visible to the left of the printed U-shaped spout handle.

MY CIRCA-1956 HO SCALE

Chesapeake & Ohio layout is set in the coalfields around Thurmond, W.Va. Among the locomotives in my fleet are 0-8-0, 0-10-0, 2-8-4, 2-10-2, 2-10-4, 2-6-6-2, and 2-6-6-6 steam engines, as well as first-generation diesels.

Though one of my operators scratchbuilt the coal tower at Thurmond, I had to use a stand-in water column here and at other locations instead of the Poage versions used by the C&O. I was never pleased with the stand-ins, but I couldn't afford to buy brass ones at that time.

Further, I have sound modules for the coal tower

and water columns. Though this adds realism to my operating sessions, it also draws attention to the water columns. It was time to replace the stand-ins with models based on those found on the full-size C&O.

Prototype history

I came across an article in the Fall 2008 — Winter 2009 issue of the *The Railway and Locomotive Historical*

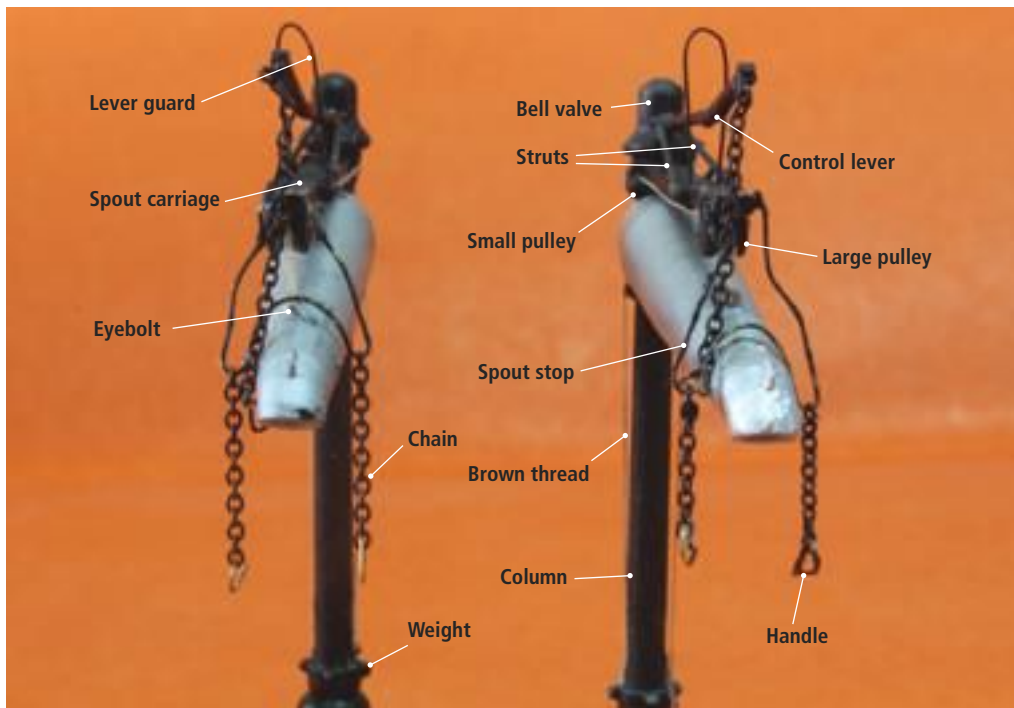
Society Bulletin on Poage water columns. The story noted that John N. Poage received a patent for his water column in 1873. His early columns were built at McGowen Pump and Manufacturing Co. in Cincinnati, Ohio. By 1880 he had his own factory and continued production into the 1920s.

The columns could be installed between two tracks and fill tenders on both sides

so that the water flowed when the spout was lowered but shut off when it was raised.

A fortunate encounter

In December 2021 I attended the Lakeshore Model Railroaders' Association Mississauga (Ontario) Train Market with fellow modeler John Spring. During the event, one of the largest swap meets in Canada, he introduced me to Dan Notley



4 Drilling for details. Prior to painting, John used a pin vise and Nos. 74 and 77 bits to make holes for installing an assortment of detail parts. He used .012" brass wire to make the lever guard and spout stop.



5 Making multiples. Since John had to make seven spout stops, he decided to make a jig using a 1/4" dowel, 1" finishing nails, and fiberboard. After he finished the formed-wire part, he lowered the nails to release it from the jig.



6 Drain or no drain. The stock Yelton Models water column features a base with a recessed drain (middle). John removed that part on five of the seven kits (right). On the other two he added plastic screen grating over the drain (left).

three parts: the column, spout, and base **2**, previous page. There was a bit of flash on some of the parts, but it was easy to remove.

With the parts cleaned up, I started prep work for adding details. First, I used a No. 77 bit in a pin vise to make a hole in the top of the spout. Then I used cyanoacrylate adhesive (CA) to attach a Detail Associates No. 2206 formed-wire eyebolt.

Next, I modified the hole in the spout where it fits over the water spigot. I made this modification because I felt the spout was too close to the pulley at the end of the spout carriage. The modification let the spout hang lower, giving it a more prototypical look.

After I made the modifications to the spout, I spray-painted it aluminum per the note in the HO scale drawings **3**.

On to the column

I then turned my attention to the column and spout carriage. Using a No. 74 bit in a pin vise, I drilled a hole through the top of the pulley near the end of the carriage. Then, using a No. 77 bit, I drilled holes near the top both small pulleys at the back of the carriage where it connects to the column. I used the same bit to add two holes to the upper edge of the weight, one on each side of the column.

I again used a No. 77 bit to drill two holes on top of the spout carriage near the strut attachment points. Then I made a lever guard, approximately 3 feet high, out of .012" brass wire. I bent the wire to a hairpin shape and attached it with CA.

Finally, I used a No. 77 bit to drill a side-to-side hole through the end of the spout carriage. Then I made a U-shaped spout stop from .012" brass wire. I formed the wire to the match contours of the spout (keep reading to learn more about how I made

and Steve Tuff of Yelton Models (yeltonmodels.com). Their company manufactures 3-D printed model railroad items in multiple scales.

I was impressed with the company's offerings. During our discussion, I mentioned it would be nice to have a Poage water column. Steve told me if I could send scale drawings they would try to make one.

When I returned home, I went through my library of articles on the C&O. I found a two-page article "Chesapeake & Ohio water column" from the June 1975 issue of *Railroad Model Craftsman*. In addition to several prototype images, the article contained HO scale drawings. The drawings also noted which colors to paint the spout, column, and rigging.

I sent the drawings to Steve Tuff at Yelton Models. In February 2022, Dan Notley sent me seven exquisite HO scale models of a Poage water column.

Assembly time

The Yelton Models Poage water column kit consists of

Materials list

A-Line

29220 blackened chain, 27 links per inch

Detail Associates

2206 eyebolts

2504 .012" brass wire

Yelton Models

Poage water column

Vallejo

73809 Industrial Thick Mud

Miscellaneous

Aluminum and black paint

Brass screen or plastic window screen

Brown sewing thread

Green ground foam



this detail). On the prototype, the stop was used to keep the spout from going too high. All of these details can be seen in 4, opposite.

Make it in metal

Since I had to make seven spout stops, I built a small jig from 1/4" dowel, 1" finishing nails, and fiberboard. I clipped off the point of the nails that protruded through the fiberboard; the heads are on the bottom. Once I formed each spout stop, I pushed the nails clear of the .012" brass and removed the part 5.

Before I attached the stop to the spout carriage with CA, I slipped two 3-scale-foot lengths of brass chain onto the wire. Then I made two triangle-shaped handles for the ends of the chains from .012" brass wire.

I also used CA to attach 6 scale feet of chain to the end of the control lever. As before, I installed a triangle-shaped handle at the end. Then I spray-painted the column flat black.

After the paint had dried, I used CA to attach two lengths of brown thread in the holes in the weight. Once the CA had cured, I ran the thread

7 **Counting down.** John has sound modules on his layout that operators can activate when topping off tenders. Crew members have to count to 20 seconds before and after the water sounds play to simulate the time it takes for the fireman to get to and from the tender.

through the small and large pulleys and into the eyebolt on the spout. The thread represents the flexible wire pulley rope found on the prototype column.

Base options

The Yelton Models water column comes with a base that features a recessed drain. In many of the C&O water column photos I've seen, no drain is visible. I used a razor saw to cut off the drain portion of the base on five of the seven models.

Then I noticed one of the brass Poage water columns was offered with Type A and Type B bases. I decided to detail the base on the remaining two columns 6.

First, I spray-painted the base a concrete color and brush-painted the tapered water column base black. After the paint had dried, I applied Vallejo Industrial Thick Mud in the recessed drain. While it was still wet, I sprinkled some ground foam into the Thick Mud to represent debris that had washed into the drain.

Finally, I cut a piece of window screen, painted it black, and attached it over the drain with CA. I'd planned on using brass screen, which is finer, but didn't have any in my modeling supplies.

On the layout

When I purchased the water sound modules for my layout, I didn't like that I was unable to position the spout on the stand-in columns over the tender. To me, this wasn't very realistic and suggested the water was running onto the ground and not into the tender. Fortunately, the column on the Yelton Models 3-D printed kit slips into the base. This allows the spout to be positioned parallel or perpendicular to the tracks as appropriate.

To merge the sound effects with prototype operations, I have a 20-second rule during operating sessions. When the engine pulls up to the water column or coaling tower, the operator has to count to 20. This replicates the time it would take the fireman to climb down from the cab,

walk to the tender, climb up on the tender to operate the coal chute or swing the spout over the tender, and open the hatch cover 7.

Then the operator pushes a button to activate the sound of flowing water. After the sound effect stops, the operator then counts another 20 seconds for the fireman to get back into the cab. After that time has elapsed, the engineer can open the throttle and pull away from the scene.

Adding positionable, prototype-accurate water columns and sound modules has helped enhance operations on my HO scale Chesapeake & Ohio layout. Hopefully you can put some of these techniques to use on your model railroad. [MR](#)

John Brown is retired after working for 23 years in the tool room at Elcan Canada (Division of Raytheon) in Midland, Ontario, Canada. He is a National Model Railroad Association Master Model Railroader and is an active member of the hobby organization's Niagara Frontier Region.

Cab curtains for SR&RL steamers



As Superintendent Orris Fose looks on, Forney No. 8 and Consolidation No. 15 sit side by side in Strong with their cab curtains ready if needed.

Napkins serve as the starting point

By Lou Sassi • Photos by the author

One day while visiting my good friend Bob McGaughlin's HO_{n3} Colorado narrow gauge railroad, I noticed his K-series steam locomotives had cab curtains. When I inquired about where he got them, he said that he cut them from a brown paper napkin he picked up at a local restaurant.

Later, while looking at photos in one of my prototype Sandy River & Rangeley Lakes RR books, I noticed in images taken during the winter months that the railroad's steam engines had the same type of canvas cab curtains. On the

larger locomotives (2-6-0s and 2-6-2s) there were both side curtains and a large curtain that dropped down to protect the entire rear of the cab. On Forneys, a simple pull-down rear curtain seemed to have sufficed.

I decided to try Bob's technique on my On30 engines using a light brown paper napkin I found at a Panera Bread. After lunch there, I grabbed a couple extra napkins and took them home.

Using a No. 11 blade in a hobby knife, I trimmed a napkin down to the proper



① Lou cut a napkin with a fresh No. 11 blade in a hobby knife. He used a scale rule as a guide.

sizes for both the side and rear curtains on my 2-8-0 and the rear curtains for my Forney locomotives ①. I cut the larger engine's side curtains a scale 6'-1½" in length by 4 feet in width and the rear curtains 8'-1½" in width by 9 feet in



length. I cut the Forney's rear curtains 3'-6" wide by 12 feet long.

I **folded the side curtains** and rolled the rear Forney curtains around a round toothpick. For the larger curtains on the 2-8-0 I used kabob skewer. I occasionally added a few small drops of Aleene's Tacky Glue to keep the napkins from unraveling **②**. Once folded and rolled up, I tied fine light brown button thread around each to represent the leather straps on the prototype. I applied Aleene's Tacky Glue to the knots to keep them from coming untied **③**.

I applied a bit of glue to the inside of the cab sides and pressed the side curtains in place. After applying a few drops of glue to the rear curtains, I pressed them to the underside of the roof on the 2-8-0s and the rear of the cabs on the Forneys **④**. The SR&RL crews were now ready to attack some snow drifts. **MR**



② Multi-step process. At top (left to right) we see the pieces of napkin Lou cut for the side curtains, Forney curtains, and rear curtains. Below that are the napkins he folded and rolled as appropriate. At bottom, Lou is applying dabs of Aleene's Tacky Glue while rolling a large rear curtain to keep the napkin from unraveling. The same technique was used for the small rear and side curtains.



③ Tying the knots. Lou ties off the thread for a large rear curtain. Above it, a Forney curtain has been tied, glued, and the excess thread trimmed. To its right, the side curtains have been tied and a drop of glue has been added to each knot; the extra thread has yet to be trimmed. At the top of the image are the materials Lou used in this step, including Aleene's Tacky Glue and light brown button thread.



④ Easy installation. After applying a few drops of Aleene's Tacky Glue to the finished curtains, Lou pressed them to the underside of the cab roof.

Rollers and stop cars

A youth astride a three-speed Schwinn, I was fascinated by all the reporting marks on cars in freights I watched roll by. Atchison, Topeka & Santa Fe; Illinois Central; and Erie marks were common. Strays like PH&D (Port Huron & Detroit), L&A (Louisiana & Arkansas), and BWCX (Berwind White Coal Mining Co.) stirred me, sending me to my treasured copy of the *Official Railway Equipment Register* to look them up. I wondered where the cars came from, where they were going, and what they were carrying. I imagined smokestacks, the hum of factory machinery, and the faraway communities relying on them. This spilled into wonder about how vital railroads are to the nation's commerce. I began to see not a boxcar, but a load of freight governed by a waybill detailing its purpose. Waybills help set a layout in time and place, the reason I believe they deserve modeling.

Tony Thompson, a prominent modeler, author, and prolific prototype researcher, would certainly agree. His "Modeling the SP" blog now has almost 120 entries about waybills. Recently, I enjoyed browsing Tony's work again after I received several notes about "rollers." I turned up "Waybills, Part 49" which explains the practice of diversions, called rollers, when a car's destination changes while it's enroute. For example, Tony described a reefer of fresh oranges sent from California to Kansas City which was billed to a Union Pacific agent there.

While the car was on its way, its shipper monitored markets in major population centers to find the highest price. Cleveland, Ohio,



Clutter typical of such a scene frames Graham County General Electric 70-tonner 102 in Milltown, near Robbinsville, N.C., in May 1974. The stacks of the sawmill in the feud loom over the enginehouse. Tony Koester photo

became the chosen destination and the waybill was modified to send it there. Arrangements like this were common for perishables moving to big cities. The risk of spoilage had produce begin rolling without a buyer.

Brokers handled lumber, another commodity which moved on rollers. Spoilage wasn't a concern, so shippers specified a roundabout route, in effect making the shipment a warehouse on wheels. Gary Roe, an N&W veteran whose career included a brief stint in engine service, remembers a trip from Council Bluffs, Iowa, to Moberly, Mo., when he picked up eight cars of lumber from the Chicago Great Western interchange at Conception Junction. "A lot of Pacific Northwest lumber moved to the Wabash there. It moved over secondary mains that didn't see a lot of traffic and would include a bunch of interchanges.

"After a car of lumber reached us at Conception, it could sit a day or more before we picked it up. If it was brokered in the meantime, it

would travel down to the main line at Brunswick, Mo., and then east."

Stop cars were also an interesting waybill variation. Early in my career in the chemical industry, a long-standing practice allowed customers to order a load of drums of acid or solvents and bags of powdered products and divide it between two destinations. A distributor in Los Angeles could unload part of the car and send the remainder to its branch warehouse in Bakersfield. This helped customers to carload price discounts, lower freight rates, and better inventory management. Such moves are easy to capture on a layout. Periodically, a car of wallboard appears on mine, billed to two different stations.

Let's close with a chuckle over a note Tony Koester

wrote me about rollers. "I ran across the best example that I know of when Jim Boyd and I visited the Graham County Railroad (GC) in North Carolina. Local lore concerned a sawmill and a furniture factory, both served by GC, whose owners hated each other. The mill asked GC to order a "chain flat" from the Southern for loading. The mill's lumber then became a roller in search of a customer which Southern's Murphy Branch job pulled from the interchange. A broker produced a sale which brought

the same car back to the interchange about a week later, re-billed to the furniture factory. Unwittingly, its owner bought lumber from his arch-rival." Embellishing how much a scenario like this fueled the feud between the two makes a great way to bring life to an operating session! **MR**



SHIPPERS SPECIFIED A ROUNDABOUT ROUTE, IN EFFECT MAKING THE SHIPMENT A WAREHOUSE ON WHEELS.
— JERRY

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National Railway Equipment 3670, a locomotive that has seen more than a million miles of service, now sits in the shop for a major overhaul, with a new set of traction motors being installed after years of hard use. The custom-designed Whitney lift jacks, which Bradley C. Freund 3-D-printed, are crucial for lifting the heavy locomotive. These jacks reflect the real-life equipment Brad saw during his career with the Wisconsin Central Ltd. in the '90s. The ex-Conrail locomotive is an Athearn Conrail GP35 dummy unit, modified to fit the rebuild scene in Brad's diorama. The facility is constructed from two 3-stall Walther's backshop kits and many 3-D-printed parts. Bradley C. Freund photo

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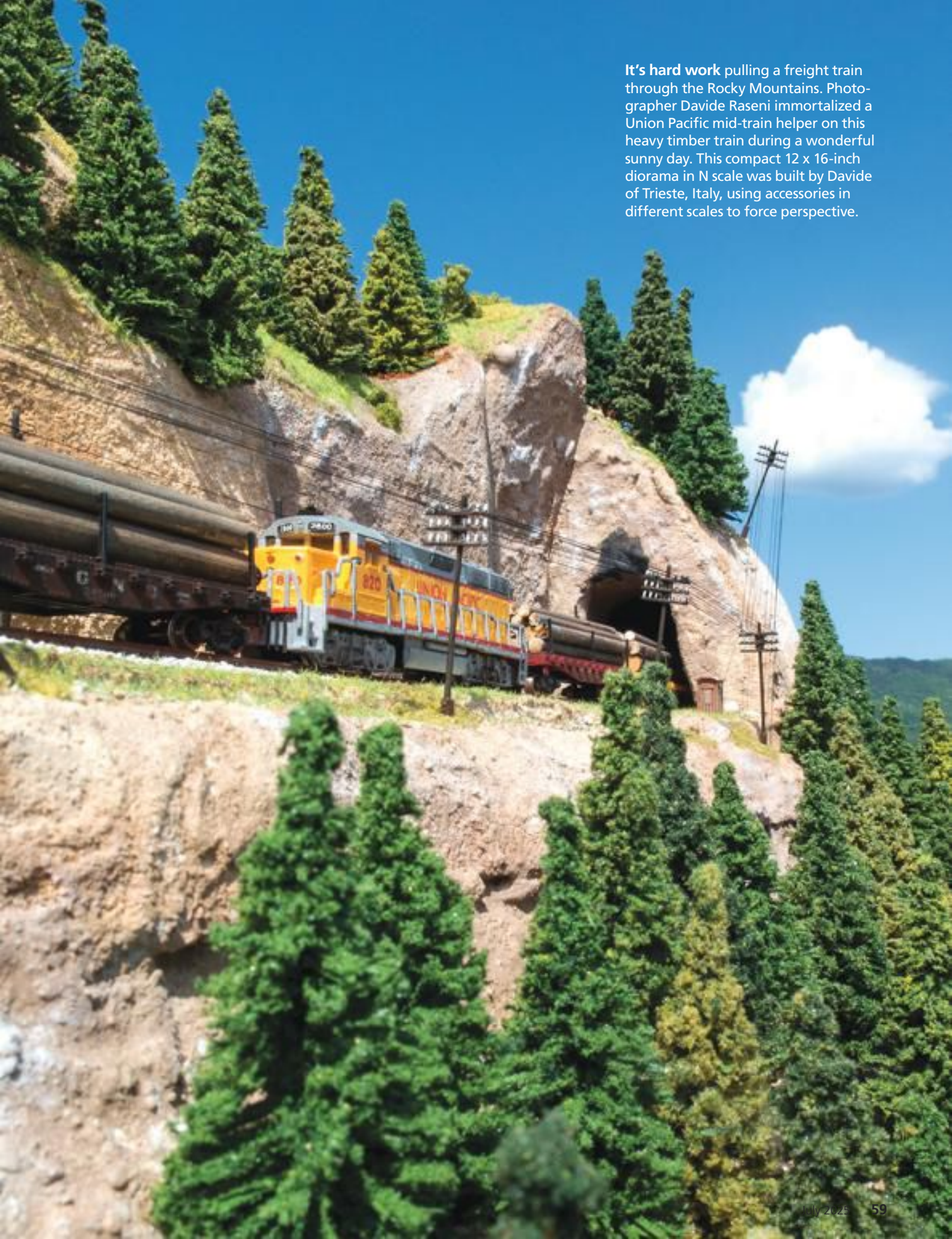


Eastbound varnish passes two freight trains at Garrison on Paul De Luca's HO scale New York Central RR Hudson Division layout. The Electro-Motive Division E units and the Alco FAs on the right are Proto 2000 models. Craig Wilson added the smoke. Paul De Luca photo

The crew of B&O's Grafton Local pauses to confer on their next moves as they switch the interchange with the Buffalo Creek & Gauley at Dundon, W.Va., on Brooks Stover's S scale layout (see *Great Model Railroads 2023*). The GP35, boxcar, and caboose, which Brooks detailed and weathered, are all from American Models. The speeder is a commercially available 3-D-printed item; the figures are from Artista. Brooks scratchbuilt the company store and shed and took the photo. For more information on S scale, visit the National Association of S Gaugers (nasg.org).



It's hard work pulling a freight train through the Rocky Mountains. Photographer Davide Raseni immortalized a Union Pacific mid-train helper on this heavy timber train during a wonderful sunny day. This compact 12 x 16-inch diorama in N scale was built by Davide of Trieste, Italy, using accessories in different scales to force perspective.

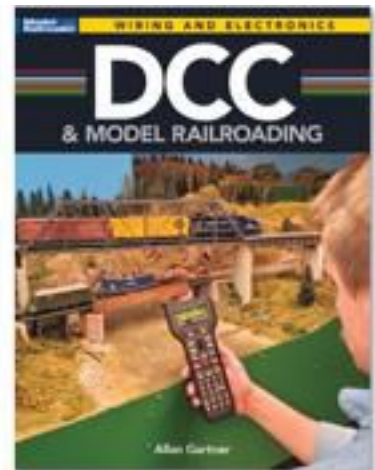


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Schedule of Events

IL, ST. CHARLES: 49th Annual Kane County Railroadiana and Model Train Show. Kane County Fairgrounds, (Front Building), 525 South Randall Rd., St. Charles, IL 60174. Sunday, June 8, 2025, 10:00am-3:00pm. Admission: \$6.00 (includes tax). Children under 12 FREE. Tables starting at \$65.00. For information: 847-358-1185, RussFierce@aol.com or www.RRShows.com

OH, VAN WERT: Van Wert Railroad Heritage Weekend Model Railroad Show & Swap. Van Wert County Historical Society, Van Wert County Fairgrounds, 1055 S. Washington St., Zip: 45891. August 16-17, 2025. Saturday 10am-4pm & Sunday 10am-3pm. Adults \$7. Children 12 & under/Scouts in Uniform: FREE. Early Bird 9am admission: \$10. Info: Chuck White, railcarman@frontier.com, 260-760-1666, www.vrrhw.com

OK, STILLWATER: Heartland Summer Toy Train Show. July 11-12, 2025. Friday 5pm-7pm, Saturday 9am-3pm. Admission: \$5.00, kids under 18 free with paid adult. Payne County Fairgrounds Expo Center. 4518 Expo Circle E., Stillwater, OK 74075. Buy/Sell/Trade. Operating layouts and door prizes. Sponsored by the Heartland Toy Train Association. For further information visit: www.heartlandtoytrain.org

PA, MECHANICSBURG: Williams Grove Historical Steam Engine Association's Train & Toy Show. June 13-15, 2025. Friday 5pm-9pm, Saturday 9am-4pm, Sunday 9am-12pm (Father's Day Pancake Breakfast 8-10am). 1 Steam Engine Hill. Free Admission. Operating PRR 643 Steam Locomotive & Diesel Engine 52. Trains & Farm Toy Vendors - Model Railroad Display - Food Vendors. Visit: www.wghsea.org

WI, LA CROSSE: Rail Fair, Copeland Park, Rose & Clinton Streets. Saturday, July 19, 2025, 10am-4pm. Admission \$8.00, under 12 free with adult. Railroad Show—Flea Market—Swap Meet. BUY/SELL/TRADE. Model, Toy & Antique Trains & Memorabilia, Railroad Exhibits & Displays. Information: 4000 Foundation, PO Box 3411, La Crosse, WI 54602, 608-781-9383 or 608-498-9522. www.4000foundation.org

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Why I enjoyed freelancing



When the Illinois Central Gulf yard office was photographed on June 25, 1984, its better days were clearly in the past, which makes it an ideal candidate for modeling. J.P. Steinwinder photo courtesy National Railway Historical Society

Now that I've spent a half century operating first a prototype-based freelanced HO scale railroad and now one closely depicting a specific prototype in the same basement, I'd say I have a pretty good idea of the pros and cons of each approach to the hobby. In short, if done with equal care and insight with adherence to prototype practices, I'd say it's a tossup.

The prototype-based Nickel Plate Road will win the longevity award, as it is getting ready to surpass the time-in-residence of the Allegheny Midland this year. I have few regrets about it replacing the AM (Midland Road), as 25 years is a long run by any standard. And I had amassed so much information about the portion of the NKP's St. Louis Division that I grew up alongside that it seemed a shame not to put that to good use.

In fact, my research has reached the point that there are few surprises awaiting

me. It's more often a case of refinements being made when a new product appears on the market that is sufficiently better than what I'm using now.

I confess that the old fires reignite when I come across a photo like the one I'm sharing with you here. In my freelancing days, my lineside structures tended to be based on Chesapeake & Ohio prototypes, but I'd occasionally make room for a building from another central Appalachian railroad.

This one would be a bit of a stretch, as the Illinois Central — Illinois Central Gulf by the time J.P. Steinwinder took the photo in June 1984 — never wandered as far east as the Alleghenies. But this yard office at Jackson, Miss., looks the part: peeling gray paint, window awnings and air conditioners, a soft drink machine or two, a bench for crews to wait on, two widths of clapboard siding (maybe the left end beyond what

appears to be a downspout is an addition), and a red pickup with vertical dual exhaust pipes. All that's missing is a cat or hound dog.

Note, too, one important characteristic of railroad buildings: the roof is in good repair. You can neglect the siding for years, but if the roof leaks, you have a problem. So I always save my best sheets of shingles for my railroad structures. The entire building is also raised off the ground. Termites?

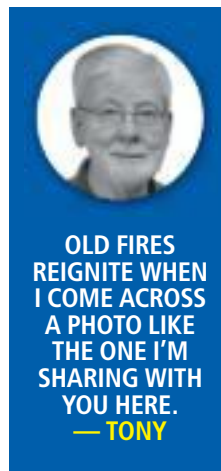
The yard had recently been refreshed with rock ballast that was extended right up to the fence that reminded crews that serious injury was just one mis-step away. The floodlights mounted on the roof also provided a measure of safety at night.

Finding such crown jewels

is more likely for a proto-freelanced railroad because the scope is so much larger: all Class I Appalachian coal railroads, all Southern short lines, all Colorado narrow gauge railroads, all Midwestern granger lines, and all Canadian Rockies routes.

I still fondly remember many trips friends and I made to central Appalachia during the 1970s. We never failed to find interesting railroad activity to photograph, and I always managed to uncover an on- or offline structure or three to add to my modeling queue: coal tipples and prep plants; company houses, stores, schools, and churches; even rock formations. And the C&O was a never-ending source of model-worthy structures. Occasionally a neighboring railroad would contribute.

When it came time to model the Nickel Plate, the range of options became much more limited — restricted, if you will. That was helpful in a way, as I could direct my focus more tightly into specific areas, thus saving time and other resources. There were Eureka! moments when I finally find a key piece of information about a town, structure, operating practice, etc.



But I still look fondly at the forbidden fruit like this aging and now gone former Illinois Central yard office. What a model it would make! I wonder what the other three walls looked like? Maybe one of you will be encouraged to find out. **MR**



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