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Model Railroader[®]

March 2025

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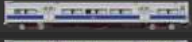



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	METRO-NORTH	CURRENT SCHEME
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Features



24 Kitbash a rail bus

A Ford Model A rail stake-bed truck served as the starting point for this On30 model
by Lou Sassi

30 Animate a garage door

Use DCC and a microcontroller to bring a scene to life
by Fred Miller

36 Transition to operations

Adding an operating scheme to the Cascade Division
by Scott Kremer



44 From Chicago to Champaign

This 24 x 40-foot HO scale layout depicts the Illinois Central Gulf in October 1976
by Brian Lingner



50 From plywood to Colorado

Part 3: Creating scenery, installing structures, and adding details to our Colorado Plains T-Trak layout
by Bryson Sleppey

57 Scratchbuild realistic wood pallets

Stripwood and printed paper make the process easy and inexpensive
by John D. Winter

In every issue

6 On Trains.com

The latest features on our website

8 From the Editor

What is the 'play value' in model railroading?



10 News & Reviews

Hobby industry news



16 Ask MR

MR&T paint scheme history



19 Step by Step

Do-it-yourself photo backdrops

60 On Operation

Electric staff systems

62 Trackside Photos

73 Index of Advertisers and Cartoon

74 Trains of Thought

Looking under the hood

24 KITBASH A NARROW-GAUGE RAIL BUS

Model Railroader

36 Run your trains!

Learn what it takes to set up your railroad to operate like the big ones



57

44

50

On the cover: Great Northern F units haul the *Empire Builder* on Scott Kremer's HO scale model railroad.
Craig Wilson photo



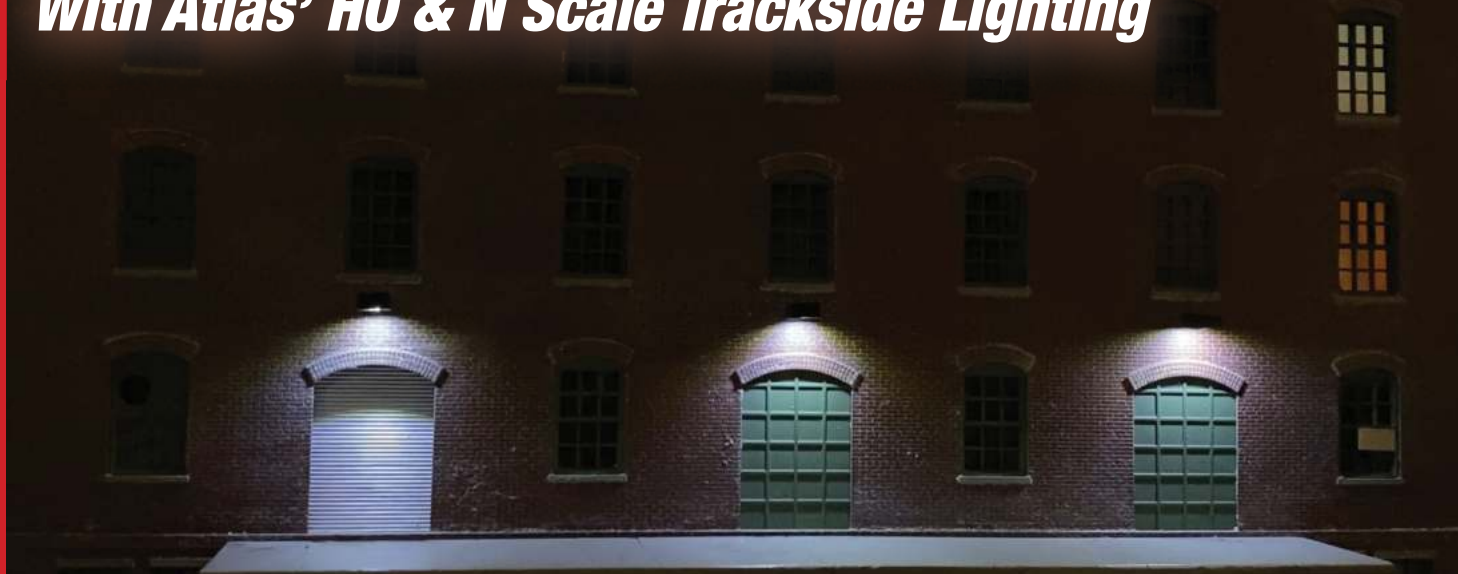
Next issue

In April, we visit an HO scale Wheeling & Lake Erie layout, learn simple tricks to upgrade passenger cars, see how Pelle Søbørg makes streets, and more!

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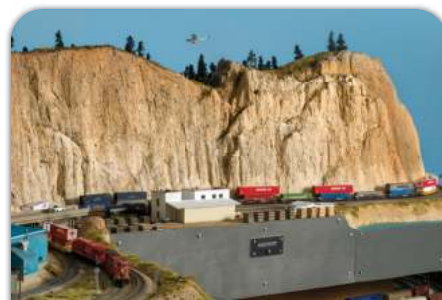
Trainfest 2024

Midwest Mod-U-Trak...home layout that travels well!



Midwest Mod-U-Trak display in HO scale

Trains.com Contributor Gerry Leone visited several of the model railroads on display at Trainfest 2024 in Milwaukee, Wis., in late November. At this stop, he visited with Bob Kosc to take a closer look at the HO scale Midwest Mod-U-Trak layout. Bob shared the group's "secret" for making realistic buildings that populate the numerous modules. Scan the QR code above to watch this and more layout visits on Trains.com.



Four basic subterrain scenery methods

Modelers have used many different scenery methods over the years. Though each person has their favorite techniques and preferences, there are some tried-and-true starting points. Trains.com Director David Popp shares four proven methods that you can use on your next layout. In this article, you'll learn more about the cardboard strip method, the stacked extruded-foam insulation board system, the tape and stuffing option, and the wire screen and plaster technique. These scenery methods can be used individually or mixed and matched to fit your needs.



Built by Others: Dustin Whitten's Norfolk & Western South Branch

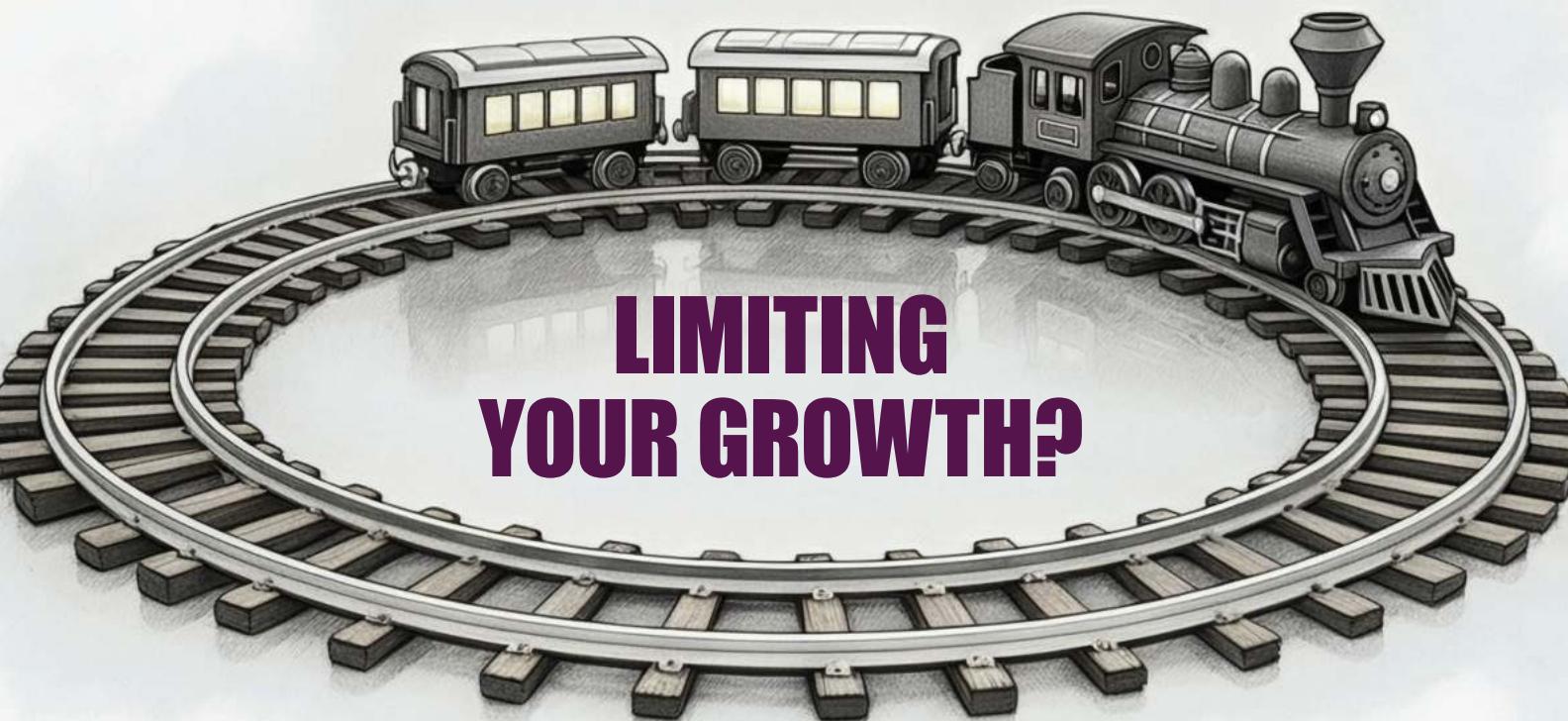
Dustin Whitten was immediately drawn to *Model Railroader's* 2012 project layout, The Virginian, when it came time to design his next layout. As a fan of coal railroading, it seemed like a perfect choice. But as others featured in our Built by Others series have done, Dustin put his own spin on the 4 x 8-foot HO scale model railroad. He expanded the footprint of the layout, widened the curves, and (taking inspiration from another of our project layouts) reworked the yard. The Built by Others series can only be found on Trains.com.



Model railroads with multiple eras

Era informs everything, from the structures to the locomotives and rolling stock that would logically fit on a layout. But what if you didn't have to choose an era? Suddenly, this limiting factor is less limiting. Trains.com Assistant Digital Editor Mitch Horner shares examples of ways you can create a model railroad that suits multiple eras.

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What's the 'play value' in model railroading?

Are we playing with trains?

A recent discussion on the Proto-Layouts discussion boards brought up the idea of play value in what we do. The initial question was about how to arrange track for a set of industries. Having a switchback arrangement would add play value.

Of course, the idea of playing with trains is an old one that is becoming less contentious as the idea of what play is, and what value it has to people, has evolved.

Most of us don't run our trains and make vroom-vroom noises as they roll down the track (at least not the steam operators), but we do enjoy the sounds modern locomotives are equipped with, judging by the proportion of sound-equipped locomotives for sale.

Model railroading is something we do for entertainment, and we do that because there's

value in stepping away from the complications of life for a bit to let our minds focus on something else.

But is play value something only seen if you operate your model railroad? No. It's something we get out of every aspect of the hobby.

One of the arguments for rolling stock kits over ready-to-run is the increased play value of getting to put the model together. Many people find that enjoyable.

While some folks might not find enjoyment in building kits, they might instead be fascinated by solving the electrical or logical problems of designing signaling or control systems. Although this isn't one of my favorite parts of the hobby, figuring out how to make something work is often satisfying to me.

Of course, an outside observer might not think of kit building or circuit design

as play. But what about scenery? You get to shape the contours of your layout into a realistic scene using foam, plaster, paint, and glue, among other items. It's like a primary school art class all over again, and most folks would say that looks like play!

Sometimes things get lost

in translation. That happened recently in the interview we ran with Rapido founder and President Jason Shron. You can watch the interview on Trains.com Video. In order to bring the story to *Model Railroader*, we used software to create a transcript, which, unfortunately, got a few things wrong.

We talked with Jason, who noted "What happened was the transcription software missed some 'd' sounds so my tenses are all mixed up. It also got the province name wrong where our factories are



because it did not recognize the province I was talking about." The actual location of Rapido's new factories is Guangxi province.

Since I don't know my Chinese geography well enough, I took the transcription software's answer as correct. Unfortunately, I made a city into a province. We'll get it right the next time.



Model Railroader

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HO scale



Electro-Motive Division SD70-series diesel locomotives. A new range of six-axle EMD road units is available from Wm. K. Walther's Inc. The SD70M is decorated for Lake State Ry., CSX, Norfolk Southern, and Union Pacific. Road names on the SD75M include Atchison, Topeka & Santa Fe and Burlington Northern Santa Fe Ry. The SD75I is lettered for Canadian National and Ontario Northland. Four road numbers are

available per scheme. The HO scale Mainline series models feature light-emitting diode lighting, a North American safety cab, a brass air horn, and molded drill starter points for grab irons (sold separately). Direct-current models with a pre-wired speaker have a manufacturer's suggested retail price of **\$169.98**. Models with DCC and sound list for **\$229.98**. Wm. K. Walther's Inc., 414-527-0770, walther's.com

Plenty to see and do at Trainfest 2024



David Popp and Bryson Sleppy (left) and *FineScale Modeler* Editor Aaron Skinner (right) enjoyed modeling and meeting hobby enthusiasts during Trainfest. They look forward to the next time they can model during a show!



Trainfest, one of the nation's largest all-scale model railroad shows, returned in November 2024 after a one-year hiatus. The event relocated from its longtime home at State Fair Park in West Allis, Wis., to the Baird Center in Milwaukee.

The two-day show featured manufacturers, vendors, historical societies, clinics, and operating layouts. As in prior years, there were also plenty of new product announcements. Atlas Model Railroad Co. unveiled several HO scale items, including an Atchison, Topeka & Santa Fe-rebuilt CF7 diesel locomotive and a Canadian National Point St. Charles caboose.

Wm. K. Walther's Inc. debuted its new HO scale Cornerstone Series Transload Facility product range. Among the offerings in the line are a belt-type transloader, corn syrup unloading facility, mobile office, overhead fall-protection system, and a utility auger.

Representatives from Broadway Limited Imports, Rapido Trains, and Lionel all stopped by the Trains.com booth on Saturday to talk about new products. Curtis Koch from BLI shared information on three HO scale projects: The Brass-Hybrid series Chicago & North Western "Yellow Jacket" 4-6-2 steam locomotive, Union Pacific power

car No. 2066, and Chicago & North Western/UP inspection car *Fox River*.

Jordan Smith and Jeff Lassahn from Rapido Trains discussed several new models in various stages of development. Among the products highlighted (HO scale unless otherwise noted) included the Electro-Motive Division SD7, SD9, and SD10 diesel locomotives; Bay Area Rapid Transit complete train set; General Electric P32AC-DM diesel locomotive; Pacific Car & Foundry B-70 series boxcars; and N scale Greenbrier 7,780-cubic-foot capacity refrigerator car. You can watch the interviews from Trainfest on Trains.com Video.

We had plenty of fun at the Trains.com booth throughout the weekend. In addition to manufacturer interviews, many of our authors held book signings and most of our staff even did some modeling. David Popp and Bryson Sleppy spent both days laying track and adding scenery to T-Trak modules that will be added on to the Colorado Plains layout. *FineScale Modeler* Editor Aaron Skinner even joined in the fun by building the Walther's Cornerstone Trackside Structures kit.

For more coverage from Trainfest 2024, visit Trains.com.

Firecrown buys EnterTrainment Junction

In a move that promises to reshape the landscape of transportation-themed attractions, Firecrown has acquired the railroad assets from EnterTrainment Junction. The company plans to relocate the beloved train exhibits to Chattanooga, Tenn., as part of an ambitious new transportation museum.

Craig Fuller, CEO and founder of Firecrown, sees this acquisition as a perfect fit for the company's vision. "The Chattanooga Choo Choo is a world-famous train town, and so we think this fits perfectly in the Chattanooga story but also preserves the legacy built here in Cincinnati," Fuller stated.

The transition from EnterTrainment Junction to the new Chattanooga-based museum underscores a broader trend of reimagining traditional attractions for modern audiences. By expanding beyond trains to include various modes of transportation, Firecrown is betting on the enduring fascination with mobility and technological progress.

HO scale locomotives



• Chicago & North Western "Yellow Jacket" 4-6-2 steam locomotive.

Chicago & North Western (1942, 1944, and 1952 versions) and two fantasy schemes (Chicago & Eastern Illinois and Seaboard Air Line). Brass boiler, cab, and tender body. Heavy, die-cast metal chassis. Factory-applied parts, including handrails, grab irons, ladders, piping, whistle, bell, and markers. Synchronized puffing smoke with chuff sound.

Equipped with rubber traction tires. Minimum recommended radius, 18". Direct-current model, \$699.99. With DCC and sound, \$799.99. Brass-Hybrid series. Broadway Limited Imports, 386-673-8900, broadway-limited.com



• Electro-Motive Division SD60 diesel locomotive.

Conrail, Burlington Northern, Canadian National, Norfolk Southern, Soo Line, and Union Pacific. Three road numbers per scheme. All-new tooling. Prototype-specific fuel tank, trucks, and anticlimber. Separate, factory-applied wire grab irons; detailed cab interior; and Celcon handrails. Light-emitting diode lighting. Direct-current model, \$269.99; with DCC and sound, \$369.99. Genesis series. Athearn Trains, 800-338-4639, athearn.com



• **General Electric ET44-series diesel locomotive.** CPKC, BNSF Ry., Norfolk Southern, and Union Pacific. Four road numbers per scheme. Light-emitting-diode illuminated headlights, front ditch lights, number boxes, walkway lights, rear ditch lights, and red DPU lights as applicable. Road-name-specific details. Traction motor detail and rotating bearing caps on all six axles. Direct-current model, \$249.95; with Digital Command Control and sound, \$329.95. Inter Mountain Railway Co., 303-772-1901, intermountain-railway.com

• **Atchison, Topeka & Santa Fe-rebuilt CF7 diesel locomotive.** All-new tooling. Two body shells and five cab variations. Separate, factory-applied detail parts; etched-metal windshield wipers; and metal knuckle couplers. Ditch lights as appropriate. Direct current and DCC with sound versions to be offered. Road names and price to be announced. 2025 release. Master Line. Atlas Model Railroad Co., 908-687-0880, shop.atlasrr.com

HO scale rolling stock



• **Chicago & North Western International Car Co. bay-window caboose system.** Chicago & North

In Memoriam

Dr. Gerry Albers, 1944-2024

Dr. Gerry Albers, 80, died of cancer on Oct. 13, 2024.



John Burchnell photo

Gerry was a pioneer in developing realistic train control systems for model railroads. He designed and installed a novel computer-based system on longtime friend Allen McClelland's first layout. Gerry's model railroad, the Deepwater District of the Virginian Ry. (*Great Model Railroads 2014*), was fully signaled with logic controlled by the "Signals by Spreadsheet" software that he developed. He gave numerous presentations and clinics at conventions and meetings to share his layout and many techniques.

In addition to his own modeling, Gerry was an active supporter of the hobby. He was a life member of the National Model Railroad Association, served as treasurer and trustee in the NMRA's Cincinnati Chapter, and was chair of the long-running Cincinnati Model Train Show.

He is survived by his wife, Jenny. — *John Burchnell*

Mike Brestel, 1951-2024

Mike Brestel, president of the National Model Railroad Association from 2006 to 2012, died on May 22, 2024. He was 73 years old.



Don Phillips photo

Mike joined the NMRA in 1967. He served the group at the national, regional, and divisional levels in many different capacities over the years.

In addition to the NMRA, Mike was a member of the Cincinnati Model Railway Club and Chesapeake & Ohio Historical Society, among other groups.

He is survived by his wife, Mary; daughter, Rebecca; and two granddaughters. — *Frank Koch*

N scale



Electro-Motive Division GP20 diesel locomotive. This new locomotive from Atlas Model Railroad Co. is decorated for Burlington Northern; Atchison, Topeka & Santa Fe; Conrail; Electro-Motive Division; Southern Pacific; and Union Pacific in two to three road numbers per scheme. An undecorated version of the four-axle model is also available. The N scale road switcher features directional, golden-white light-emitting diode lighting and magnetic couplers. The Master Line locomotive is offered in direct current with a factory-installed speaker for **\$129.95**. Versions with Digital Command Control and a sound decoder have a manufacturer's suggested retail price of **\$239.95**. Atlas Model Railroad Co., 908-687-0880, shop.atlasrr.com

Western (1966 delivery red, 1970+ yellow repaint, and 1981+ Zito Yellow). Six to eight road numbers per paint scheme; also available as undecorated kit in six versions. Road- and era-specific details for each scheme, C&NW-specific interior (three versions), wire uncoupling levers and grab irons, and full underbody details. Modeler-controlled light-emitting-diode interior lighting. Illuminated FRA end lights where appropriate. Kadee scale couplers. \$124.95 (undecorated kit, \$99.95). Tangent Scale Models, 828-412-3886, tangentscalemodels.com

HO scale passenger equipment



• **Chicago & North Western track inspection car Fox River.** Union Pacific (1995-2006 and 2006-present) and Chicago & North Western. Factory-applied handrails, grab irons, antenna and conduit arrangement. Freestanding underbody details. Finger-touch control of exterior and interior lights, including ditch lights, marker lights, tail lights, interior lights, and spot lights (where applicable). Kadee-compatible knuckle couplers. Minimum radius, 18". \$129.99. Broadway Limited Imports, 386-673-8900, broadway-limited.com

HO scale train sets



• **Amtrak Acela II.** Motorized sound-and DCC-ready power car, non-motorized power car, First Class car, Cafe car, and Business Class Quiet Car. Light-emitting-diode headlights, marker lights, ditch lights, number box lights, and car interior lighting. Detailed cab and car interiors. Metal pantographs with selector switch for overhead catenary operation. Articulated coupling system. Includes 45" x 81" oval of E-Z Track with concrete ties and power pack. Additional Business Class cars sold separately. \$799. Bachmann Spectrum. Bachmann Trains, 215-533-1600, bachmanntrains.com

HO scale structures



• **Corn syrup unloading facility.** Injection-molded plastic kit. Includes transfer garage with overhead access doors and loading platform, four large storage tanks, mobile boiler house, shipping container-style mobile office for site operations, and piping. \$64.98.

Cornerstone Series. Wm. K. Walther's Inc., 414-527-0770, walthers.com

HO scale vehicles



• **Dry bulk trailer.** Valley Growers Association, Glacier Industrial Sands, Medusa Cement Co., Red Wing Milling Co., Polymerchants Inc., and Theobroma Ltd. Triple compartment pneumatic tank with top access hatches, discharge, and charging piping. \$31.98. Spring 2025. SceneMaster line. Wm. K. Walther's Inc., 414-527-0770, walthers.com

N scale rolling stock



• **Greenbrier 7,780-cubic-foot capacity refrigerator car.** Cryo-Trans, Arkansas-Oklahoma RR, Lineage, Ontario Northland, and Union Pacific. Also available painted white with data only. Cryo-Trans and Union Pacific body styles. Separately applied uncoupling levers, door latch mechanism, and end platform with etched-metal grate. Single car, \$49.95; three-pack, \$149.85; and six-pack, \$299.70. Rapido Trains Inc., 905-474-3314, rapidotrains.com



• **100-ton three-bay hopper.** Wheeling & Lake Erie, Bessemer & Lake Erie, BNSF Ry., Canadian National, Chessie System (with Baltimore & Ohio and Western Maryland reporting marks), Conrail, Norfolk & Western, Norfolk Southern, Pennsylvania Power & Light Co., Pennsylvania RR, Reading & Northern, and Southern Pacific. Multiple road numbers per paint scheme. Free-standing brake wheel, interior and slope sheet braces, and brake appliances. Roller-bearing trucks. Includes coal load. \$29.95. Bowser Manufacturing Co. Inc., 800-327-5126, bowser-trains.com

Rapido HO scale GE 44-ton diesel



A **General Electric 44-ton** diesel locomotive is the latest addition to the Rapido Trains HO scale lineup. The switcher has an injection-molded plastic body; heavy, die-cast metal chassis; and prototype-specific details.

General Electric produced the 44-ton diesel locomotive from September 1940 to October 1956. More than 370 units were built during that time.

Over the course the production run, GE made changes to the 44-ton diesel, referred to as Phases by railfans. Rapido's first run features diesels based on Phase Ic, III, and IV prototypes. The Milwaukee Road (MILW) model is a Phase Ic. Spotting features include corner steps, no vents on top of the hood, side radiators, and solid hood ends.

The sample we received is decorated as MILW 992, one of three GE 44-ton diesels rostered by the railroad. The class DE/3.8G-S was built in November 1941 as MILW 1701. It was renumbered 992 in 1959 and retired in February 1966.

The Rapido GE 44-ton diesel locomotive features a plastic body consisting of the two hoods and a separate cab. Details common to the front and rear pilots include plastic train line air hoses, footboard pilots, wire grab irons, and plastic uncoupling levers.

Among the features on the front and rear hoods are

factory-applied metal door latches, molded sand fillers, and a wire handrail below the headlight. A pair of cast-metal, two-chime air horns are attached to the top of the front hood.

The sample we received is neatly painted in Milwaukee Road's orange-and-black scheme. The separation line between colors is sharp, and the lettering placement matches a prototype photo I found online. The full-size 992 had angled braces between the sill and corner steps.

Drawings of the GE 44-ton diesel locomotive appeared in *Model Railroader Cyclopedia: Vol. 2, Diesel Locomotives* (out of print). The Rapido model matches published data.

Our sample has an ESU LokSound V5 sound decoder. I did the initial testing at the workbench with an NCE Power Cab. The 44-tonner moved at less than 1 scale mph at step 1. At step 28, the model achieved a top speed of 36 scale mph. That's 1 mph faster than the prototype's top speed.

Then I took the model over to our Winston-Salem Southbound for real-world testing. The short-wheelbase unit worked the industries on the compact switching layout without issue. The Mo-Power capacitor helped the model navigate turnouts and the 30-degree crossing without losing power.

The GE 44-ton diesel made its debut 85 years ago, and examples can be still found earning their keep today. With multiple phase and detail variations, the Rapido Trains HO scale switcher is definitely not a one-size-fits-all model. —
Cody Grivno, senior editor

Facts & features

Price: direct current, \$189.95; with ESU LokSound V5 sound decoder, \$299.95

Manufacturer

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

Era: 1959 to 1966 (as decorated)

Road names: Milwaukee Road; Atchison, Topeka & Santa Fe; Boston & Maine; Canadian National; Denver & Rio Grande Western; New York, New Haven & Hartford; New York, Ontario & Western; Northern Pacific; Pennsylvania RR; Southern Pacific; Southern Ry.; and Union Pacific. Painted (red, blue, and yellow) but unlettered and undecorated models also available. One to three road numbers per scheme.

Features

- Metal couplers, at correct height (low trip pin on front coupler)
- Metal wheel stubs mounted on plastic drive axle gears, correctly gauged
- Weight: 5.7 ounces



Trains.com members can see the Rapido GE 44-tonner in action with this QR code.

Tangent HO Trinity 4750 covered hopper



The Trinity Industries “Pullman-design” 4,750-cubic-foot capacity three-bay covered hopper is now available from Tangent Scale Models. Features on the HO scale car, designed from Pullman-Standard plans and field measurements, include road-specific details, Barber S-2 100-ton trucks with rotating bearing caps and separate brake beam detail, and Kadee scale couplers.

The Tangent model is based on full-size covered hoppers built by Trinity between 1988 and 1995. The carbuilder acquired various P-S car designs and patents in the early 1980s. Trinity ended production of its own 4750 three-bay covered hopper to focus on the Pullman-design car, which many railroads requested be brought back.

Our review car is decorated as BN 466404, part of the railroad’s 466000 through 466999 series built at Trinity’s Greenville, Pa., under File No. 2111 between June and October 1990.

Trinity made modifications to its Pullman-design cars during the course of the production run. Our BN review sample is a Phase 4 car. Among the spotting features are an overhanging clere-story roof, four-piece trough hatch covers, 17 running board supports, two running board end extension supports, welded corners, long jack pads with bolster extension, and 18 exterior posts.

Covered hoppers from this BN series were folded into the BNSF Ry. fleet following the 1995 merger with Atchison, Topeka & Santa Fe. Cars 466000 through 466999 retained their original numbers when they traded their BN Cascade Green for BNSF Ry. Mineral Red.

Tangent’s Trinity 4750 three-bay covered hopper has a multi-piece plastic body consisting of the sides, ends, and

bays; roof; bolsters; and center sills. The end cages are separate plastic castings with formed wire grab irons.

Rooftop features include a four-piece trough hatch cover painted to look like galvanized steel. The hatch covers are framed by a see-through, etched-metal Morton-design running board. The running board supports are painted Cascade Green like they are on the prototype cars. Formed wire grab irons, painted yellow, are attached to the latitudinal boards above the full-height end ladder.

The brake system includes numerous freestanding parts, including the air reservoir, brake cylinder, center-tube brake adjustment line, and control valve. The related piping is all formed wire.

An Ellcon National D-5600 brake housing is attached to the end cage on the B end of the car. Both ends of the car are fitted with etched-metal crossover platforms and wire uncoupling levers.

Underneath, the covered hopper has factory-applied vibrator brackets, center sills with access holes, and bolt-on outlet gates. The Kadee scale couplers are body-mounted.

Our sample car features a smooth, even coat of BN Cascade Green paint. The white and yellow graphics are opaque, with the smallest type legible under magnification. The lettering placement matches prototype photos of other cars from the BN series. The AAR TEST WHEELS stencil was applied to full-size cars to indicate they were equipped with a new wheel design.

Prototype drawings of BN’s Trinity 4750 three-bay covered hopper were published in *BNSF Railway Freight Cars Volume One* by Robert C. DelGrosso (Great Northern Pacific Publications,

2004). The Tangent model closely follows published data.

The model will negotiate 18" radius curves. However, the overhang isn’t very realistic. The model will look better on 22" and greater curves.

As a BN fan, I’m thrilled Tangent Scale Models has added the Trinity 4750 three-bay covered hopper to its HO scale freight car range. The well-researched and detailed model would look good on any model railroad set between 1988 and today. — *Cody Grivno, senior editor*

Facts & features

Price: \$58.95

Manufacturer

Tangent Scale Models
P.O. Box 6514
Asheville, NC 28816
tangentscalemodels.com

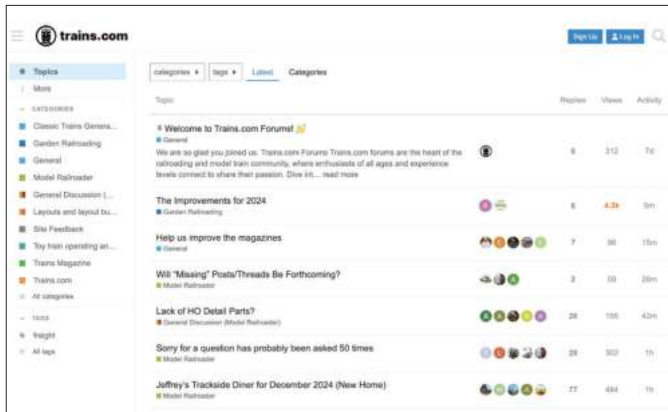
Era: 1988 to present (varies by paint scheme)

Road names: Burlington Northern, BNSF Ry., CSX, GATX Capital, General American Transportation Corp., Interstate Commodities Inc., North American Chemical, and Union Pacific. Four to 24 road numbers per paint scheme. Also available undecorated (ready-to-run) in four versions.

Features

- CNC-machined 36" metal wheelsets, correctly gauged
- Kadee scale couplers, mounted at correct height
- Weight: 5.3 ounces, .5 ounce too heavy per National Model Railroad Association Recommended Practice 20.1.

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The Trains.com forums are back with a fresh, new look. Find the MR forum here: forum.trains.com/c/model-railroader/8

First off, I want to apologize for how long it took to bring the forums back. We attempted to migrate the existing forums to a new version of the old software and realized after doing so that it was a disaster. Instead, we moved to a far more modern platform that is in the cloud.

This platform is far more stable, and we are investing in making it a rich and engaging experience.

Unlike the old forums, the new platform has a modern architecture. We migrated the content from the legacy platform to the new one and addressed many technical issues that frustrated users in the old system.

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These four custom-decorated Accurail HO scale freight cars illustrate the evolution of the Milwaukee, Racine & Troy herald. It's now possible to model our freelanced line from the steam era to the present day. Cody Grivno photo

The evolution of the MR&T herald

Q In the November Ask Trains video, you were standing in front of a display case filled with Milwaukee, Racine & Troy freight cars. Some featured the familiar square MR&T herald. Other models looked to be from an earlier era. What can you tell me about those cars?

Bert G.

A Alan Cerney, an illustrator in Kalmbach Publishing Co.'s art department from 1975 to 1978, designed the square Milwaukee, Racine & Troy (MR&T) herald that we've used on our freelance HO scale club layout since the late 1970s. Models featuring that herald cover the 1970s to the present day.

A few years ago we decided to offer MR&T models appropriate for the steam and steam-to-diesel transition eras. The herald Cerney designed was far too modern for those cars, so we needed to come up with something different. The MR staff worked with Rick Johnson, our now retired lead illustrator, to design era-appropriate looks for the MR&T.

We came up with a couple designs for the steam and steam-to-diesel transition eras. The first, and simplest, was spelling out the MR&T's name in a Railroad Roman-style font without a herald. Many railroads did this over the years, including Gulf, Mobile & Ohio; Norfolk & Western; and Northern Pacific. We've offered Accurail's two-bay offset-side hopper and 41-foot gondola in this scheme.

We also worked with Rick to develop a herald for the early days of the Myrt. We stuck with the square shape, but spelled out the railroad's name over three lines (think Detroit & Toledo Shore Line and Grand Trunk Western, among others). We've used this herald on Accurail's 40-foot wood-side refrigerator car, 40-foot single-sheathed boxcar, and 41-foot gondola, as well as the ScaleTrains steel offset-cupola caboose kit.

Then we wanted a scheme that would serve as a bridge between the steam-to-diesel transition era and the 1970s. It's not a big secret that I'm a fan of the Burlington Northern and its predecessor roads. I turned to the Spokane, Portland & Seattle as inspiration, as its road name featured three city names, similar to the Milwaukee, Racine & Troy.

The first car to feature the scheme was Accurail's 40-foot steel refrigerator car. Though it looked OK, I wasn't entirely happy with the appearance. We refined the scheme on Accurail's 50-foot double-door boxcar kit, shown in the image above.

If you're curious what era an MR&T car is designed for, check out the product descriptions at Shop.Trains.com.

Q How do you look up an old article? *Model Railroader* used to put an annual index in one of the early spring issues, and there was once a website that had a cumulative index of MR, *Railroad Model Craftsman*, and other magazines. Nowadays do you just have to page through every issue until you find the one you wanted?

Tim Barnard

A When you go trains.com/mrr, you'll see a variety of drop-down menus near the top of the page. Go to MODEL RAILROADER MAGAZINE and select ANNUAL INDEX. There, you will find MR indexes from 2005 to the present that you can download and print out.

To search for articles in MR, *Trains*, *Classic Trains*, *Classic Toy Trains*, and *Garden Railways*, as well as other prototype and model railroad magazines, visit the Railroad Magazine Index website at rmmagazineindex.org.

The complete list of titles on the Railroad Magazine Index website can be found by clicking on MAGAZINES at the bottom of the homepage. There you'll see the titles, divided by subject (prototype, model railroad, museum and historical societies, and newsletters).

When I use the site to search for articles, I go to the ADVANCED SEARCH page. There, you can enter the search term and date range. You can also select the magazines you want to search. For tips on best practices, click on HOW DO I SEARCH?

Q What is the best adhesive to use for attaching cork roadbed to wood or extruded-foam insulation board?

Ronald Jaeger

A In *Basic Trackwork for Model Railroaders — Second Edition* (Kalmbach Books, 2014), Jeff Wilson wrote, "Cork can be nailed in place, but glue is a much neater option. I prefer white glue for securing cork to plywood and Woodland Scenics Foam Tack Glue for adhering cork to foam."

Jeff's ideas are just a starting point. If you're working on a wood surface, you can also use wood glue, caulk, and construction adhesive.

Care must be taken when attaching cork to extruded-foam insulation board as solvent-based products may etch or

Send questions on model, prototype, and toy trains to AskTrains@Trains.com.



Former *Model Railroader* Managing Editor Dick Christianson used DAP latex adhesive caulk to attach cork roadbed to the wood layout surface on the HO scale Wisconsin & Southern project layout. *Model Railroader* staff photo

burn through the foam. Examples of foam-safe products include DAP Foamboard Construction Adhesive, Liquid Nails Projects & Foamboard Adhesive, and Loctite PL 300.

In addition, we've used DAP Alex Plus and Dynaflex 230 (both acrylic products) to attach cork roadbed to wood and foam surfaces.

Q Was there ever an article on converting old railcars to accept modern trucks/couplers? I have a few HO Tyco cars that need to be converted.

Jason Trew

A Jim Kelly and Andy Sperandio co-authored "Kadee couplers" in the May 1981 issue of MR. The article covered both N and HO couplers. The information you'll be most interested in for your HO scale Tyco cars is on page 81.

You didn't mention which specific Tyco HO cars you have, but if I were to guess they have snap-fit trucks. I would recommend replacing them with screw-mounted trucks. Various articles have addressed how to prepare bolster holes for screw-mounting trucks. Examples include filling the holes with sprue material, styrene rod or tube, and modeling putty. Then you'll need to drill and tap the material to accept a screw. You may also need to file the bolster to bring the car and/or coupler to the correct height.

Another approach was presented in Tom Busack's article "Shortline lumber



This HO scale Life-Like Thrall-Door boxcar was upgraded with body-mounted couplers and screw-mounted trucks. The bolster hole was filled with styrene, then drilled and tapped to accept a screw. *Cody Grivno photo*

haulers" in the August 1985 MR Paint Shop column. First, he filled the bolster holes on the Life-Like HO scale cars with epoxy. Tom then drilled a hole in the center of both bolsters with a No. 50 bit and threaded them with a 2-56 tap.

He next filed the bolsters to adjust the car and coupler height. Tom cut a section from a Kadee No. 5 coupler box top

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Ask MR



The N Scale Architect offers the Stilwell Oyster Car as a kit in 1:160. The model includes 3-D printed parts, laser-cut and photo-etched details, and more. Conowingo Models offers the car in HO scale. The N Scale Architect photo

and cemented it to the bolster as a shoulder for the replacement trucks.

The photo on the previous page shows an HO Life-Like Thrall-Door boxcar that was modified with body-mounted couplers and screw-mounted trucks. The upgrades greatly improved the car's appearance and performance.

Q I was wondering if you could provide me with information on what kind of loads an oyster cannery sends and receives?

Markus Russ

A I cast the net wide to help answer your question. I started internally. *Trains* Associate Editor Bob Lettenberger wrote "Five mind-blowing facts — Stilwell Oyster Car" on *Trains.com*. In the article, Bob noted, "Tanks cars were tried,

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however, the internal temperature could not be controlled generally resulting in overheating the oysters. In 1866, the B&O constructed several special express cars to speed live oysters packed on ice to Wheeling, W.Va., Cincinnati, and Chicago. At the time, it took 50 hours to reach Chicago — far longer than oysters would stay fresh or alive on ice."

Bob then went on to describe the Stilwell Oyster Car from the late 1890s. Though the car sounded like a good idea, it didn't work out as planned. "The Stilwell Oyster Car was plagued with many of the problems that curtailed previous attempts," Bob wrote. "Temperature control, rough handling, and transit time delivered dead oysters seriously lacking in freshness." The Stilwell Oyster Car is offered by The N Scale Architect in 1:160 and Conowingo Models in 1:87.1.

Craig Wilson, a member of the operating crew at the late Jack Ozanich's HO scale Atlantic Great Eastern, added that bagged oyster shells were shipped in boxcars. He said that ground oyster shells were a common additive for animal feed, especially chicken feed.

Based on practices at other food canning facilities, it's also possible that oyster canneries received cans and labels in boxcars; canning equipment in boxcars, flatcars, or gondolas depending on the item; and propane or coal (for heating) in tank cars and hoppers, respectively.

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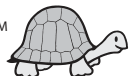
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Do-it-yourself photo backdrops

Model railroaders have been using photos of prototype scenes to create realistic backdrops for some time. In certain situations they can work well. I've successfully used them on the HO scale North American Prototype Modelers (NAPM) layout in Milwaukee, Wis., last featured in the March 2003 issue of *Model Railroader*. The photo of Tippecanoe Avenue on page 61 of that issue shows an example.

However, there are several areas on the club's layout

where prototype images don't work as well. The biggest challenges are perspective control and anachronistic content. It occurred to me that photographing a diorama, where I could control perspective and content, would yield good-looking background scenes for challenging locations.

After a few test photos, I found that the continuity between the models in the diorama and those in the foreground made for a believable scene. Period vehicles,

advertising, and figures can also be added or subtracted before the photos are taken.

If you're looking to add backdrops to your model railroad, I hope you give the techniques outlined here a try. They've worked well for our club, and they'll look great on your model railroad, too. **MR**

David Karkoski has been a member of the North American Prototype Modelers Ltd. (napmltd.org) club since 1994. He lives in Milwaukee, Wis.

Wabash 2-8-2 No. 2217 leads a freight train past Pierce Street on the North American Prototype Modelers HO scale layout. Club member David Karkoski shares how he made convincing city photo backdrops to fill in gaps between the foreground structures. Photos by the author

STEP 1 PHOTOGRAPHY POINTERS



I used a digital SLR camera for this project. It's possible to take the photos with a wide-angle lens (24mm focal length), but the convergence of vertical lines can become more exaggerated, especially when working with structures ❶. Also, distant objects get pushed farther away.

A 50mm lens gives a view that's close to what your eye would see when viewing a scene, keeping objects in proper proportions ❷. This is the focal length I prefer.

Similarly, a telephoto lens (120mm focal length) can be used for this project ❸. However, you need to be mindful of the compression of distant objects into the foreground that happens with this type of lens.

When taking photographs, avoid tilting the camera to get closer to the diorama. This exaggerates the convergence of parallel vertical lines ❹.

For those with a railroad built near eye level, the question of perspective isn't a significant issue. Your camera will need to be set at a height that's close to eye level.

Those with layouts that have a lower benchwork level will need to decide if the background perspective will be at a normal viewing angle from above or from an eye-level perspective. I've found that lower elevation perspectives tend to look better. However, each situation is unique and you'll need to determine what looks best to you.

To aid in setting the vertical elevation of the camera, I fabricated a tool from cardstock with elevations marked in 3 scale foot intervals ❺. I then centered the camera's viewfinder on the chosen elevation ❻.

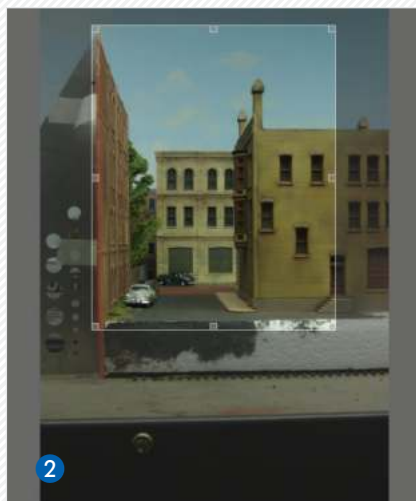
Next, determine the camera's angle of view into the diorama. The viewing angle into the backdrop is based upon foreground elements that frame the scene and force the viewer to look into it from a specific vantage point. It's also determined by foreground objects that recede into the backdrop, such as sidewalks. When taking the photo of the diorama, position your camera to this angle of view as a starting point, adjusting as necessary.

STEP 2 EDITING AND PRINTING



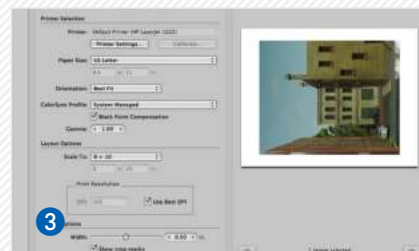
After you've taken the photos, you'll need to crop and size the images using photo-editing software. Cropping will affect the size of objects in the final print. To enlarge objects, do a tight crop. To reduce the size of an object, do a wide crop.

Objects in the photo will need to be in proper proportion with the foreground items. A close crop producing an automobile that's 10%



larger than a foreground vehicle will be obvious to viewers. The same applies to figures. Structures are more forgiving, but exercise care with windows and doors.

I compared actual items in the diorama to the photographs to make sure they were at the correct proportions ①. The farther back in the diorama an object is, the smaller it should appear on the print.



In the case of the project photos, an 8 x 10 crop seemed to produce the correct proportions in the images. As shown in ② the crop can be a significant portion of the overall photo.

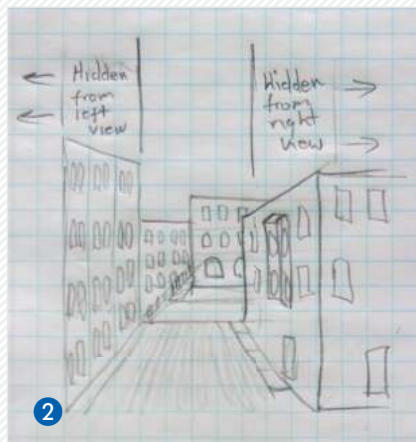
You can also adjust the printer output to get a properly sized image ③. The software I used let me size the printed output and save it as a PDF. I started with an image sized to my crop and adjusted it from there.

I then printed the PDF on a black-and-white laser printer to evaluate the results. Unfortunately, there's no hard-and-fast rule when doing this as camera placement, lens, crop, and printing all affect the final image proportions. Be prepared to make several exposures and prints before getting what you want.

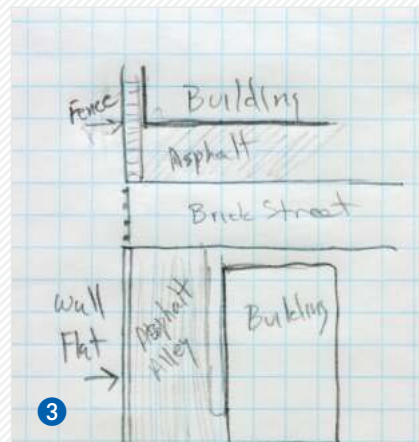
STEP 3 PRACTICAL APPLICATION



On the NAPM layout, I had an area between two buildings to fill. It was about 40" above the floor. There are two possible viewing angles into the scene as a peninsula extends out in front of the location. The perspective is only from normal viewing height.



The foreground structures, when viewed from the left or right, created hidden areas on the backdrop photo ①. I wanted to take advantage of this to carry the wall of the left building into the background when viewed from the right and to present a side



view of another building when viewed from the left.

To start the photo backdrop project, I made a sketch of what I wanted the final backdrop scene to look like ②. Then I made a plot plan of the diorama ③.

STEP 4 DIORAMA CONSTRUCTION



I built the photo diorama following usual model building practices **1**. Since this is a photographic set, most of the structures and scenic elements can be removed.



First, I set up the structures and streets. Then I made a series of test photos to evaluate the initial placement, adjusting and adding details as necessary. Note that the red brick

building in the far distance of **2** is a photograph of a model. I now take elevation photographs of all my structures to use in creating dioramas or for backdrops.

STEP 5 PHOTOGRAPHS AND INSTALLATION



I first chose a viewing angle that placed a large amount of the side wall of the left-hand building in the photo **1**. I was disappointed in the ability of the images to capture the appropriate blend of the wall on the left into the foreground structure. The receding roof line slope on low-elevation images seemed much too great.

For the next series of images, I added more details and vehicles to the scene. I removed the second building on the left side of the diorama and replaced it with a tree.

To correct the excessive slope on the roof, I made a series of exposures ranging from 6 to 36 scale feet. I increased the height of the camera



for each picture, using a viewing angle that looked down the alley to reduce the amount of left side wall visible in the picture.

When I reviewed the photos, the roadway appeared to rise into the background with each increase in elevation. On the right-hand view, as the roof line shifted up with increased elevation, the ground line shifted up as well, resulting in a mismatch.



I felt the 15-scale-foot image best achieved my goals **2**. The relationship between foreground and background was acceptable. I also liked the way the vehicles appeared. The slope of the roof line wasn't great, but I could live with it.




I had the final image printed at a big-box office supply store. The price was reasonable and the image quality was adequate for my purposes. I trimmed out the final picture and removed the sky. Then I attached the remaining image to the wall with rubber cement. I blended the foreground into the background and added details to complete the scene **3**.

This method of creating photo backdrops has proven effective for the city scenes on the NAPM layout. If you have a digital camera and photo-editing software, you'll find this process easy and rewarding, allowing you to produce backdrops that complement foreground scenery.

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Kitbash a rail bus

Sandy River & Rangeley Lakes rail bus No. 1 trundles over the Winter Mill pond on Lou and Cheryl Sassi's On30 layout. The image below shows the Bachmann Spectrum Ford Model A stake-bed rail truck before modification.

A Ford Model A rail stake-bed truck served as the starting point for this On30 model

By Lou Sassi • Photos by the author

When passenger traffic started to slow down in the early 1930s on our On30 Sandy River & Rangeley Lakes, it was time to introduce a more frugal way of getting passengers to and from their destinations. Around the same time I noticed a used Bachmann Spectrum Ford Model A stake-bed rail truck listed on eBay. Converting the truck to a bus sounded like a good project to keep me busy and to keep passenger service a viable option on my 7 x 16-foot layout.

After receiving the model, I test ran it on the layout. Satisfied with its performance, I took the stake-bed rail truck over to the workbench to kitbash it into a rail bus.

Kitbashing is a great way to get models that aren't otherwise available. Even if

you don't model Sandy River & Rangeley Lakes rail bus No. 1, hopefully you can put some of these techniques to use on your next project. [MIR](#)



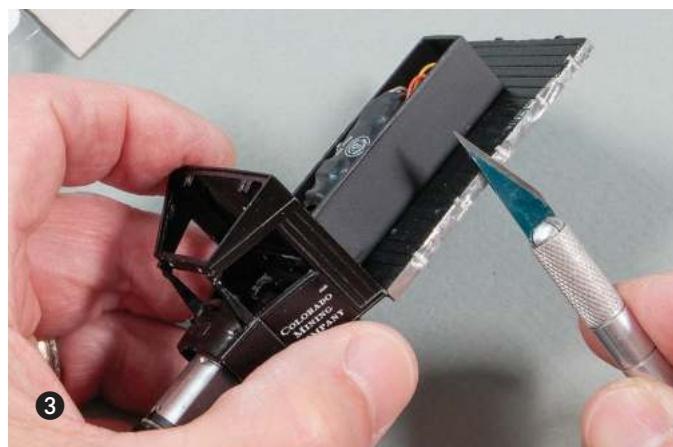
STEP 1 INITIAL MODIFICATIONS



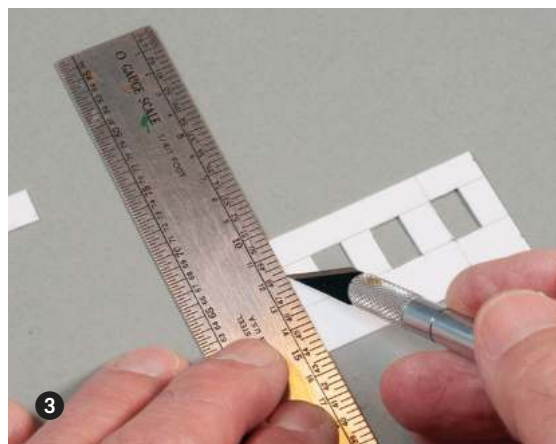
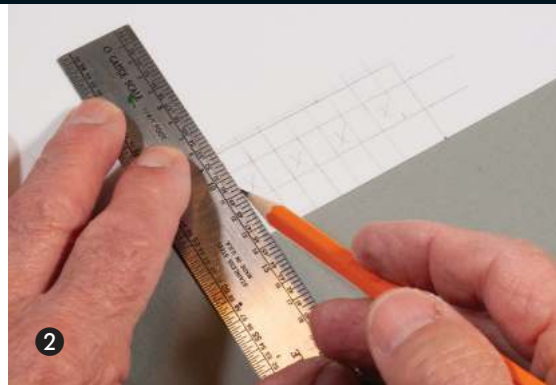
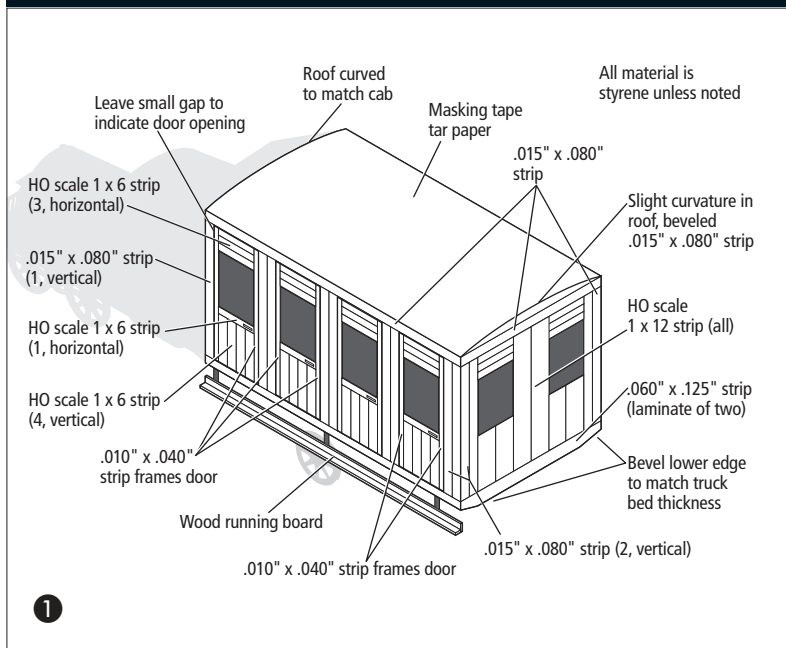
I started the kitbash by removing the plastic stake racks, bottom half of the rear differential, wheels, drive shaft, cab, engine compartment hood, driver's seat, and shift/brake levers. Then I used a cutoff disk in a motor tool to remove the stake pockets. Wear eye protection when doing this in case the disc shatters.

Since I didn't completely dismantle the truck, I cut a slot in a greeting card, set the model in the opening, and taped the edges ①. This kept metal shards out of the motor and electrical components. I also used the motor tool to cut away a portion of the rear of the cab ②.

I filled in the stake pockets with .010" styrene, secured to the die-cast metal frame with 5 Minute Epoxy. After approximately 30 minutes, I trimmed off the excess styrene and epoxy with a No. 11 blade in a hobby knife ③.



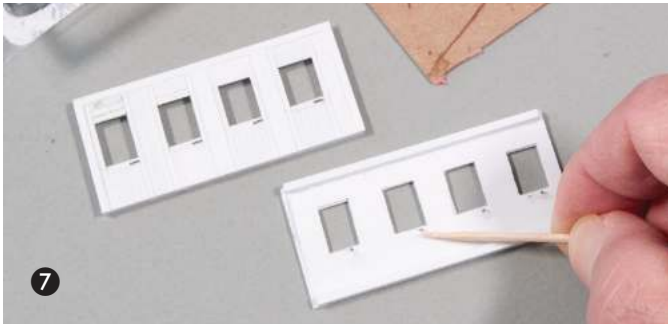
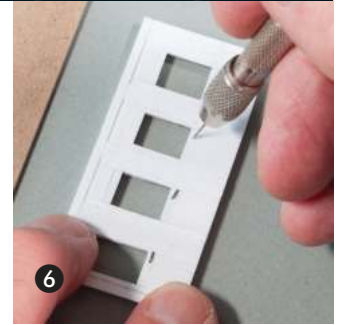
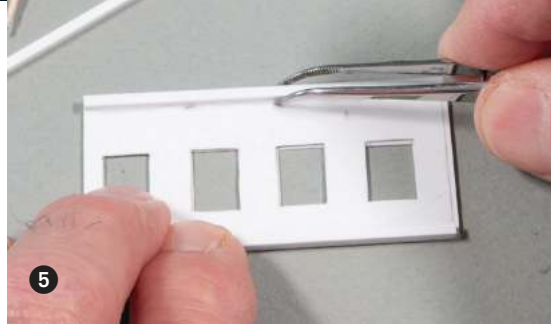
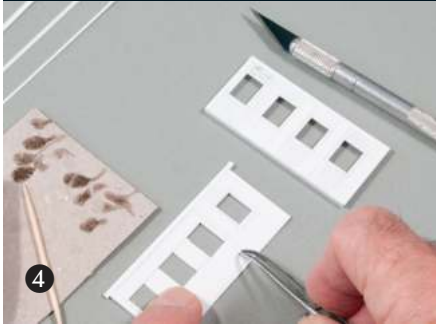
STEP 2 STRATCHBUILDING WITH STYRENE



The illustration in ① shows how I constructed the rail bus body. Except for the running boards, I used styrene sheet and strip for the body.

First, I marked out the door and window locations on .010" plain styrene sheet with a scale rule and sharp No. 2 pencil ②. Then I used a fresh No. 11 blade in a hobby knife to cut out the walls and window openings as shown in ③.

STEP 2 STRATCHBUILDING WITH STYRENE (cont'd)



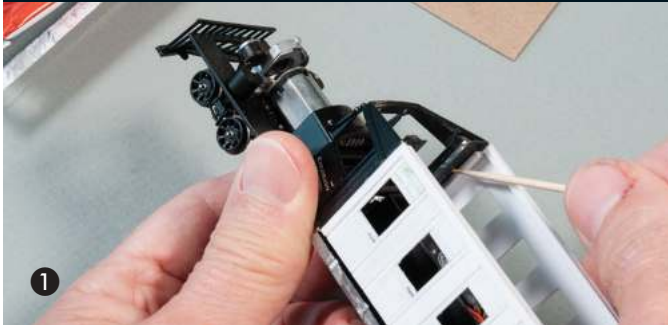
Next, I used assorted widths of .010" and .015" styrene strip to create the doors and outer walls (4). Once the walls were built, I reinforced them around the inside perimeter with O scale 4 x 4 styrene strip (5).

Then, using a No. 73 bit in a pin vise, I drilled a hole in each door for the handle (6). I pressed the handles, made from fine wire bent at a right angle, into the holes using pliers and secured them with 5 Minute Epoxy (7).

The rear wall of the bus has two window openings. It's a laminate of .010" styrene sheet covered with HO scale 1 x 12 strip stock.

The bus body is 6" longer than the truck bed. To account for this, I laminated two pieces of .060" x .125" styrene strip and attached it to the metal body with 5 Minute Epoxy (8). I beveled the bottom outer edge of the styrene to match the thickness of the truck bed prior to installing the piece.

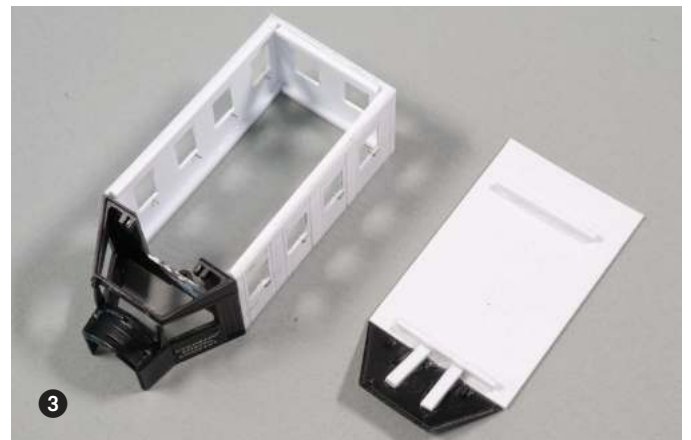
STEP 3 ASSEMBLING THE BODY



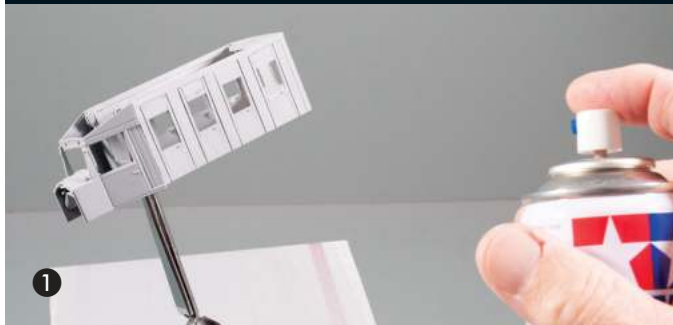
I attached both sides of the passenger compartment to the rear of the cab using 5 Minute Epoxy, making sure they both aligned with the top outside edge of the bed (1). Then I attached the rear of the passenger compartment to the sides with plastic cement.

Next, I added two braces — beveled on a sheet of extra fine sandpaper — to the underside of the .010" styrene passenger compartment roof to match the slight curve of the cab roof (2). Though not shown here, I also added styrene strip braces to the top of the truck bed to help keep the walls in alignment.

I attached the passenger compartment roof to the back of the cab. I reinforced the joint with .060" x .125" styrene strip (3). This allows the entire roof assembly to be removed for access to the cab and passenger compartment.



STEP 4 TIME FOR PAINT

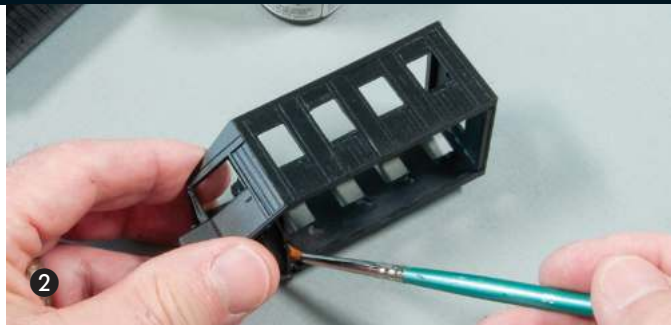


With the body and roof assembled, it was time for paint. Well, almost. To separate the cab from the chassis, I first had to remove the enclosure for the solid state circuit board. The front screw holding the sides of the enclosure in place is only accessible (after removing the top) from inside the enclosure. It can only be reached from above.

I again used a greeting card to protect the running gear and electronics while I primed the perimeter of the truck bed with Tamiya surface primer. I used the same product to prime the cab, passenger wall assembly, engine hood, and roof ①. Once the primer had dried, I sprayed the same parts with Tamiya Black (TS-14). I brush-painted the fenders and underframe Model Master Engine Black (4888, discontinued). Micro-Mark and Rail Center offer a similar color in acrylic.

Even though I spray-painted the body and underframe with an aerosol can, I wasn't able to cover every nook and cranny. I used a brush to touch up areas that I missed with the Model Master paint ②.

To simulate a canvas roof, I turned to a piece of 2"-wide masking tape. After attaching it to the model, I cut around



the perimeter with a fresh No. 11 blade ③. I painted the roof Model Master Oxide Red (4882, discontinued).

Instead of reinstalling the plastic engine cover, I wrapped the motor with a small piece of black electrical tape to prevent it from shorting out on the metal hood.

STEP 5 WEATHERING AND WINDOWS



I did some preliminary weathering on the rail bus with dry pigments prior to installing the window glazing and reassembling the model ①. Applying the weathering first prevented the glazing from getting scratched and dirty.

With the initial weathering completed, I cut pieces of .010" clear styrene sheet to size for the windows. I secured the glazing with Aleene's tacky glue ②. Though the glue comes out of the bottle white, it dries clear.

The blinds are solid-color pieces of 1940s magazine pages that I purchased years ago. I used the parchment-colored pieces for the bus ③.

At this point I set the driver's seat in place, reinstalled the driving mechanism, reassembled the bus, and installed the seats in the passenger compartment [See "Scratchbuilt seats" on the next page. — Ed.]



Scratchbuilt seats

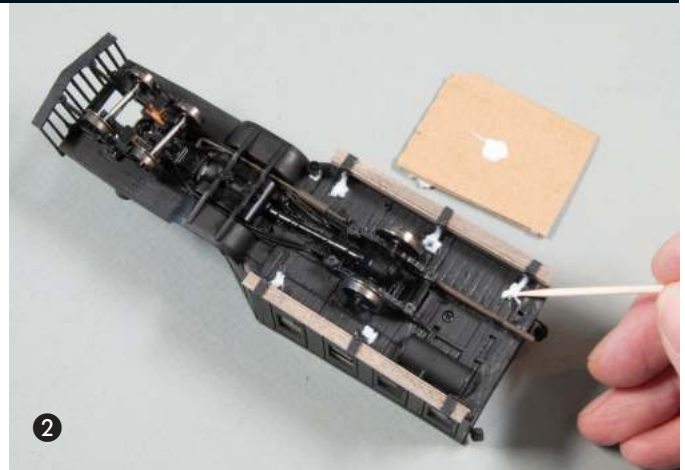
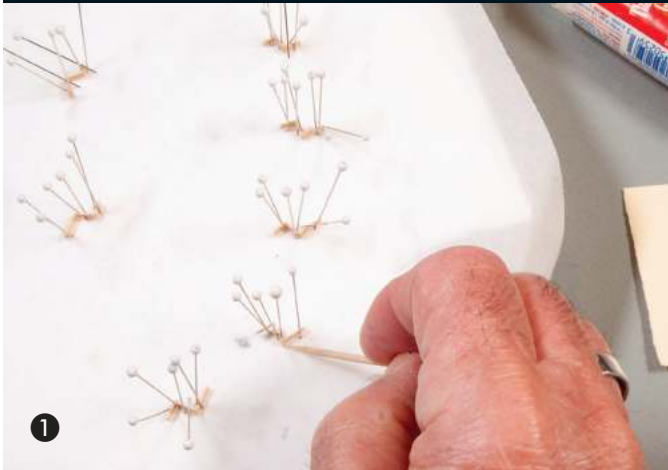
The **passenger section** of Sandy River & Rangeley Lakes rail bus No. 1 required seven seats, visible in step 7. The six that flank the solid state circuit board enclosure feature stripwood and styrene construction. First, I cut 1-foot square stripwood into 1½ foot lengths for the seat bottoms. Then I cut 1½ x 2¼ foot pieces of .010" styrene sheet for the seat backs.

The rear, bench-style seat is a scale 5'-0" long since it doesn't have to clear the enclosure.

The original driver's seat was too high for the Artista figure I wanted to use. I replaced it with a seat made from two pieces of .010" styrene.

I brush-painted the seats Roof Brown. Once the paint dried, I attached the seats with Weldbond. — Lou Sassi

STEP 6 RUNNING BOARDS



Though I used styrene for most of the rail bus project, I switched to Northeastern Scale Lumber stripwood for the running boards. I made the vertical "S" brackets from HO scale 2 x 8s, notched with a No. 11 blade and bent at two right angles.

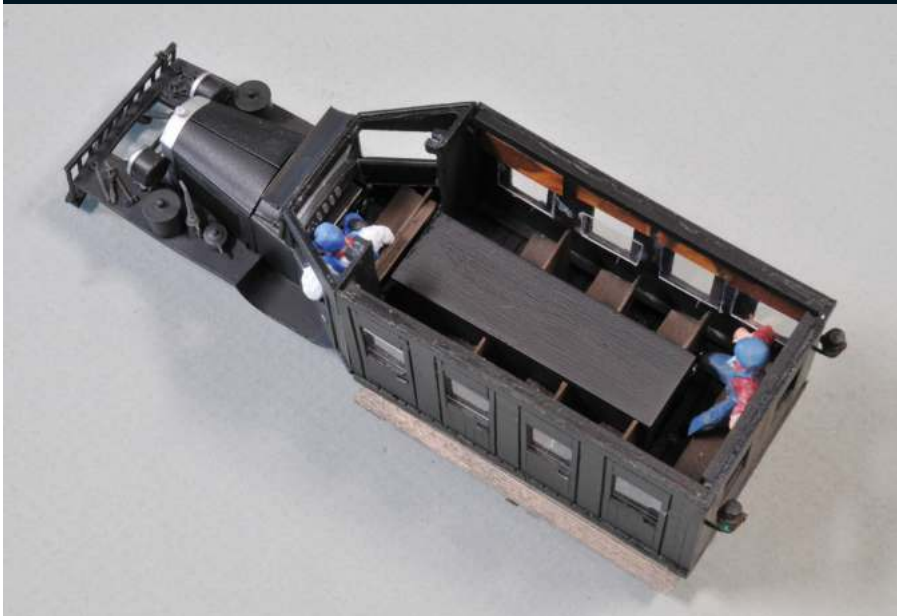
Then I placed the S brackets on a sheet of parchment paper attached to a piece of Styrofoam. I used straight pins to hold the stripwood in place while applying Weldbond

white glue with a toothpick at the joints **1**. The glue helps keep the bends at a 90-degree angle.

The running boards consists of an HO scale 2 x 8 (vertical) and 2 x 12 (horizontal). I stained the running boards with an India ink and alcohol wash.

I painted the S brackets Engine Black and attached them to the running boards. Then I installed the assemblies under the bus with Weldbond **2**.

STEP 7 FINISHING TOUCHES



To wrap up the rail bus project, I installed two Artista figures, one in the cab and one in the passenger section. I had to modify the driver figure so he would seat properly. I secured both figures with Weldbond.

To protect the bus from a rear-end collision, I added switch lamps that I culled from HO scale Caboose Industries high-rise switch stands.

I cut the existing exhaust pipe where it bent to exit the rail truck. Then I ran a length of brass tube from behind the rear wheel to just beyond the back bumper (see **2** in step 6 above).

With that, Sandy River & Rangeley Lakes rail bus No. 1 was ready for service. The residents of Strong and Kingfield, Maine, are excited to have a new option for riding the rails.

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ANIMATE A GARAGE DOOR



Use DCC and a microcontroller to bring a scene to life

By Fred Miller

Photos by the author

For almost a dozen years I have been promoting, in various clinics and presentations, the topic of light, sound, and motion animation for model railroads. Of course, over those years more modelers have been venturing into this wonderful aspect of model railroading with a variety of custom implementations. The commercial world now also offers a number of devices and fixtures to bring animation to the layout.

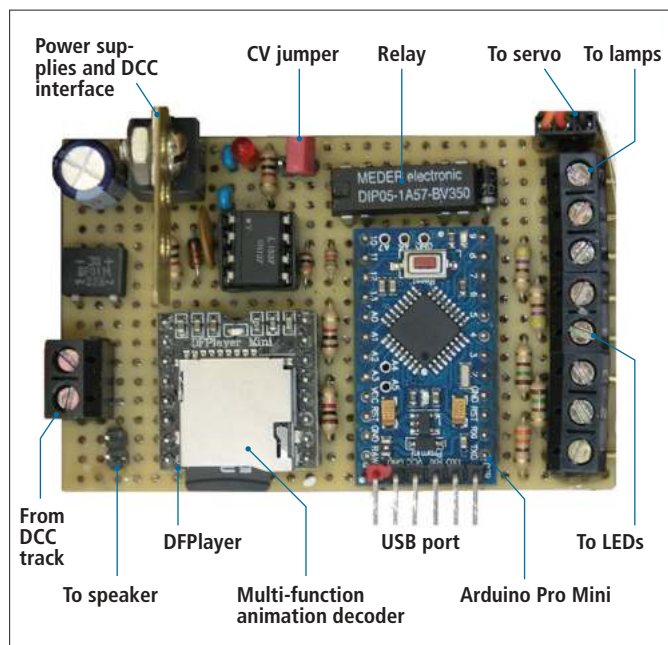
Recently the availability of microcontrollers has opened the animation door even further. The Arduino line of microcontrollers now is a wonderful tool for developing custom animation projects.

This article describes the installation of one of my animation decoders in an HO scale building. I have been using Arduino microcontrollers for various Digital Command Control (DCC) and LocoNet interfaced projects for my model railroad. But I recently decided to put my earlier thoughts of “light, sound, and motion” animation into a single custom-built DCC decoder. I call my developed project the “Multi-function Animation Decoder” or MFAD. This decoder responds to DCC commands with functions 0-8 performing a variety of tasks including controlling lights, sounds, and servo motions. My intent was to make it easy to animate activities in a variety of buildings on my layout.

I have used my MFAD to operate tasks associated with the modeled Import Motors building. The various assigned function keys are:

- F0 — flicker a light-emitting diode (LED) to simulate a welding operation
- F1 — blink an emergency light on the tow truck
- F2 — turn on shop area lights
- F3 — turn on office lights
- F4 — turn on sign lights
- F5 — play shop sounds
- F6 — play welding sounds

The recent availability of microcontrollers inspired Fred Miller to modify a Walther's Import Motors kit to include a working garage door along with lights and sounds.



Fred built the electronics side of the project on a perfboard. Everything is contained underneath the building.



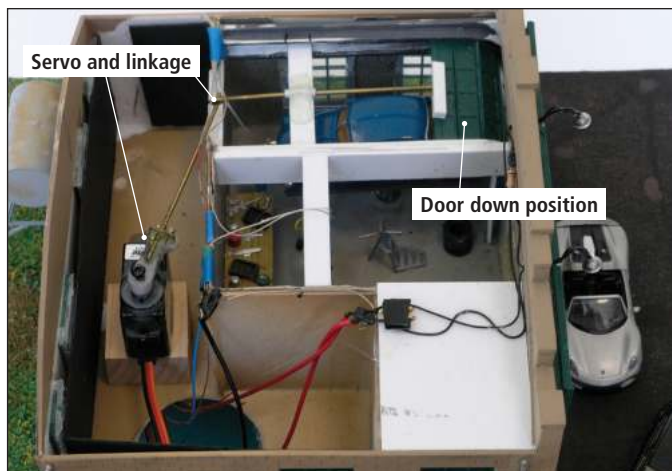
The finished scene outside the garage includes working lights on the roof and front signs. The building was built almost per the instructions with some modifications of the back bay and garage door.

F7 — play garage door sounds
F8 — raise or lower garage door

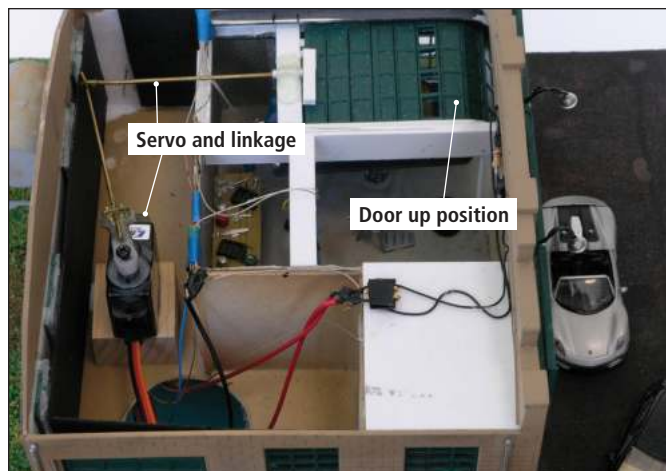
CONSTRUCTING THE BUILDING

The building chosen for this project was the Walther's Import Motors kit. It was built essentially as per the instructions except that the back bay and associated garage door was removed, shortening the building. In addition, the front windows were rearranged and a garage

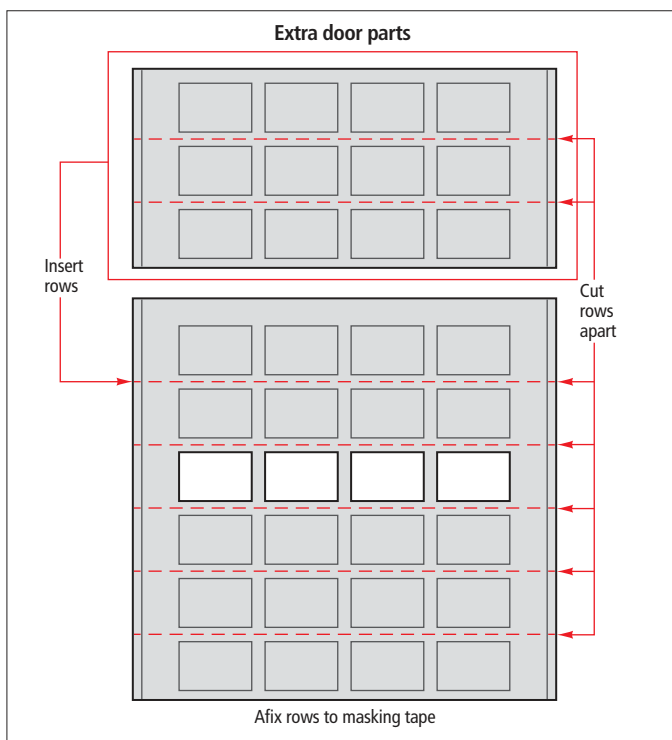
door was installed instead of one window. The outside plastic lights on the roof sign and front sign were replaced with 10 Miniaturics N scale Lamp Shade with Bulbs. These are 1½V incandescent lamps, so they were connected in series to match the anticipated 5V provided from the animation decoder. Two series of 4 lamps for the roof and one series of 2 plus a 150 ohm resistor worked just fine for the front sign. [More cautious modelers may choose to connect resistors to each lamp. — Ed.]



A top-down view of the garage shows the interior detail in both bays. Guides added to the ceiling help to direct the servo linkage for the door.



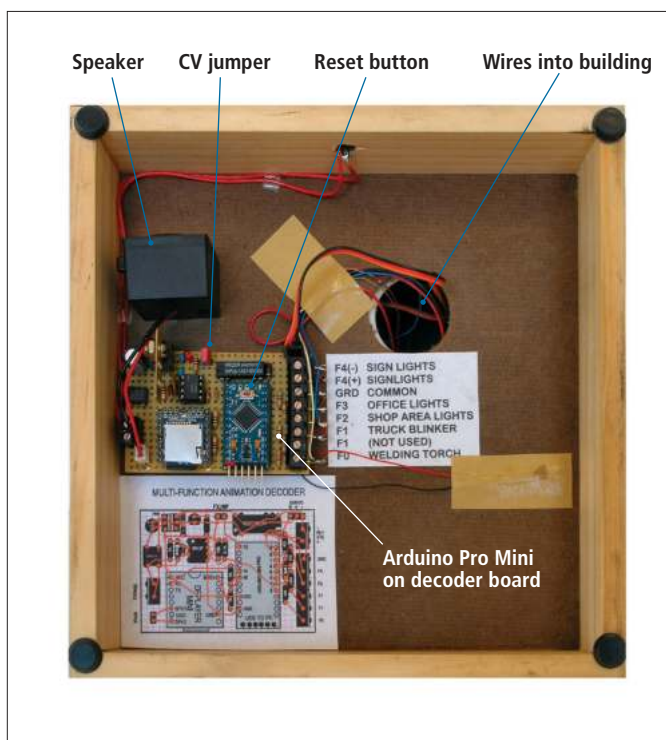
With the door in the raised position, the servo linkage just touches the back wall. The windows were covered from the inside to hide the various components.



In order for the garage door to move, the kit door had to be modified. The original door parts were used. The diagram above shows what was cut and inserted. Kelly Jaeger illustrations

The inside of the building was partitioned off into an office and shop with scrap styrene sheet cut to fit. I also used styrene to build a car lift and a car was installed in the raised position. Office furniture, shop tools, and figures were installed inside the structure. Small pre-wired surface-mount device (SMD) light-emitting diodes (LEDs) were positioned to light the office, shop, and the welding torch up under the raised car.

The front garage door was made to open and shut with a micro servo motor. The doors were constructed from the kit-provided doors as shown in the diagram above. The tracks for the garage door were made from styrene strip and sheet. The strips were heated and bent around a suitable radius to form the tracks with sufficient clearance for the door segments to smoothly pass around the corner. The servo-to-door



All electronics, including the speaker, are mounted underneath the base of the scene. A setup like this fits in the smallest of footprints, even if space under the layout is limited.

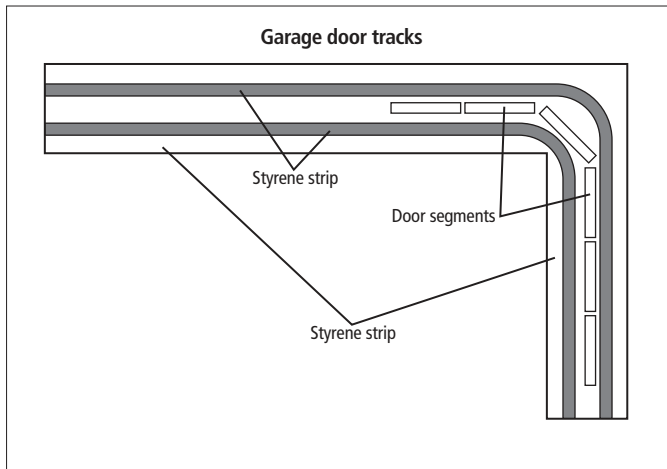
linkage was formed out of brass rod and positioned for simple movement of the door up and down with the slow moving servo motor.

OPERATING THE ANIMATION DECODER

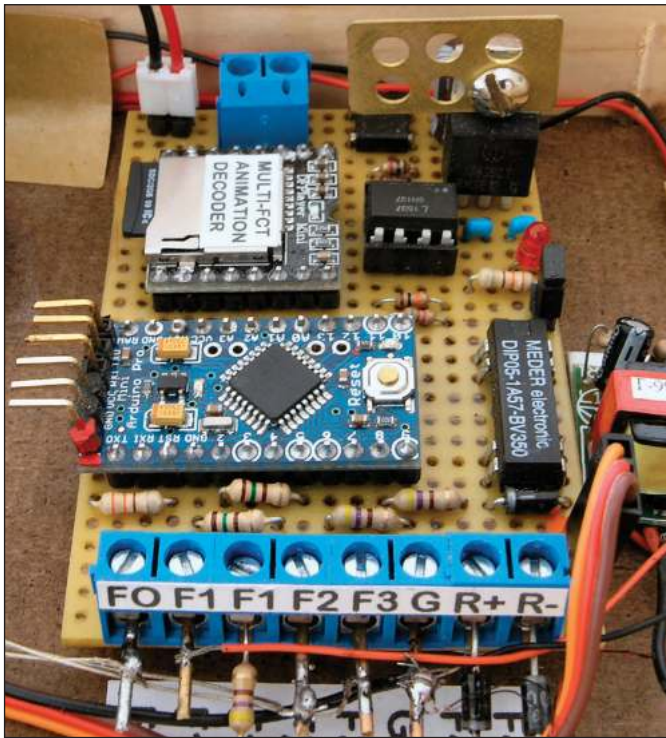
The decoder is controlled by standard NMRA DCC decoder function commands. Those commands can be issued from a number of different sources including DCC

throttles and JMRI scripts or panels. For my Digitrax LocoNet-equipped layout, I have built an Arduino circuit which runs and displays a “day schedule.” A script is defined in the microcontroller which issues LocoNet function ON-OFF commands for specified DCC decoder addresses at particular times of the simulated day.

The decoder circuit board is implemented with an Arduino Pro Mini



After the door was cut and spliced, it could be inserted into the custom tracks. Strip styrene was heated and bent to make the 90-degree curve so the door moves smoothly.



A custom heatsink was added to the voltage regulator as they drop the voltage provided by the DCC track circuit down to 5VDC and generate some heat.

microcontroller that operates a DFPlayer sound board, playing selected MP3 or WAV format soundtracks, and a micro-servo to provide motion animation. The LEDs are driven directly from the ProMini outputs, but an additional output drives a relay for more current-demanding components, such as the incandescent sign lamps.

The software running the Pro Mini microcontroller emulates a DCC decoder and

can save various option settings as CVs. See the sidebar for further details about the CVs in this project.

BUILDING THE ANIMATION DECODER

The decoder accepts power and DCC function commands from the DCC track circuit. I use two 7805 voltage regulator power supply circuits, one for the Arduino Pro Mini and sound board, the

Materials list

Jameco Electronics

35975 1N4001 50V 1A rectifier diode
51262 7805T 5V 1A positive voltage regulator
103000 Diode rectifier full wave bridge
103393 2-position male header 1 row 10 pin
112432 2-position socket shorting block jumper
113911 6N137 Optocoupler
151116 Capacitor ceramic disc .1µF 25V ±20%
202471 Orange-red diffused 3mm LED
690662 150 ohm ¼W resistor
690742 330 ohm ¼W resistor
690785 470 ohm ¼W resistor
690865 1K ohm ¼W resistor
691032 5.1K ohm ¼W resistor
691104 10K ohm ¼W resistor
743285 1N4148 switching diode
2301975 Ceramic disc capacitor 270pF 50VDC 10%

DigiKey

ED10564-ND 5-position terminal block
668-1432-ND 8 ohm 1W speaker

ABRA Electronics

100R50 100mfd 50V Electrolytic Radial Capacitor

Arduino

Arduino Pro Mini

Derf Electronics Corp.

DIP05-1A57-BV350 5V reed relay

DFRobot

DFR0299 DFPlayer module

Miuzei

SG90 Mini-micro servo

Miscellaneous

Perfboard
MicroSD card

Using configuration variables for the animation decoder

My animation decoder operates similar to DCC-equipped locomotive decoders. It has an address recognized by the DCC system in which it is connected and performs various activities using NMRA DCC function commands.

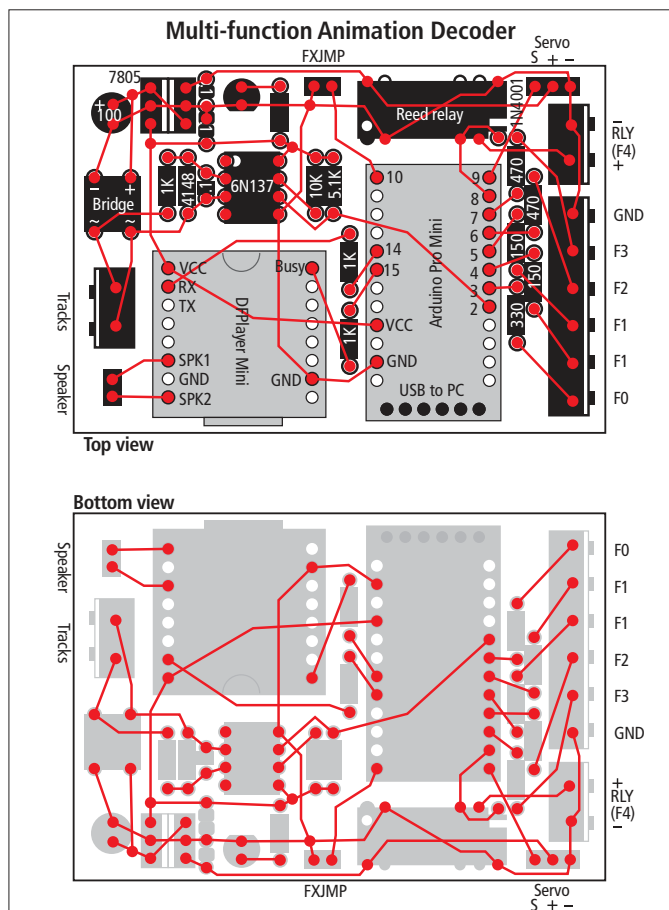
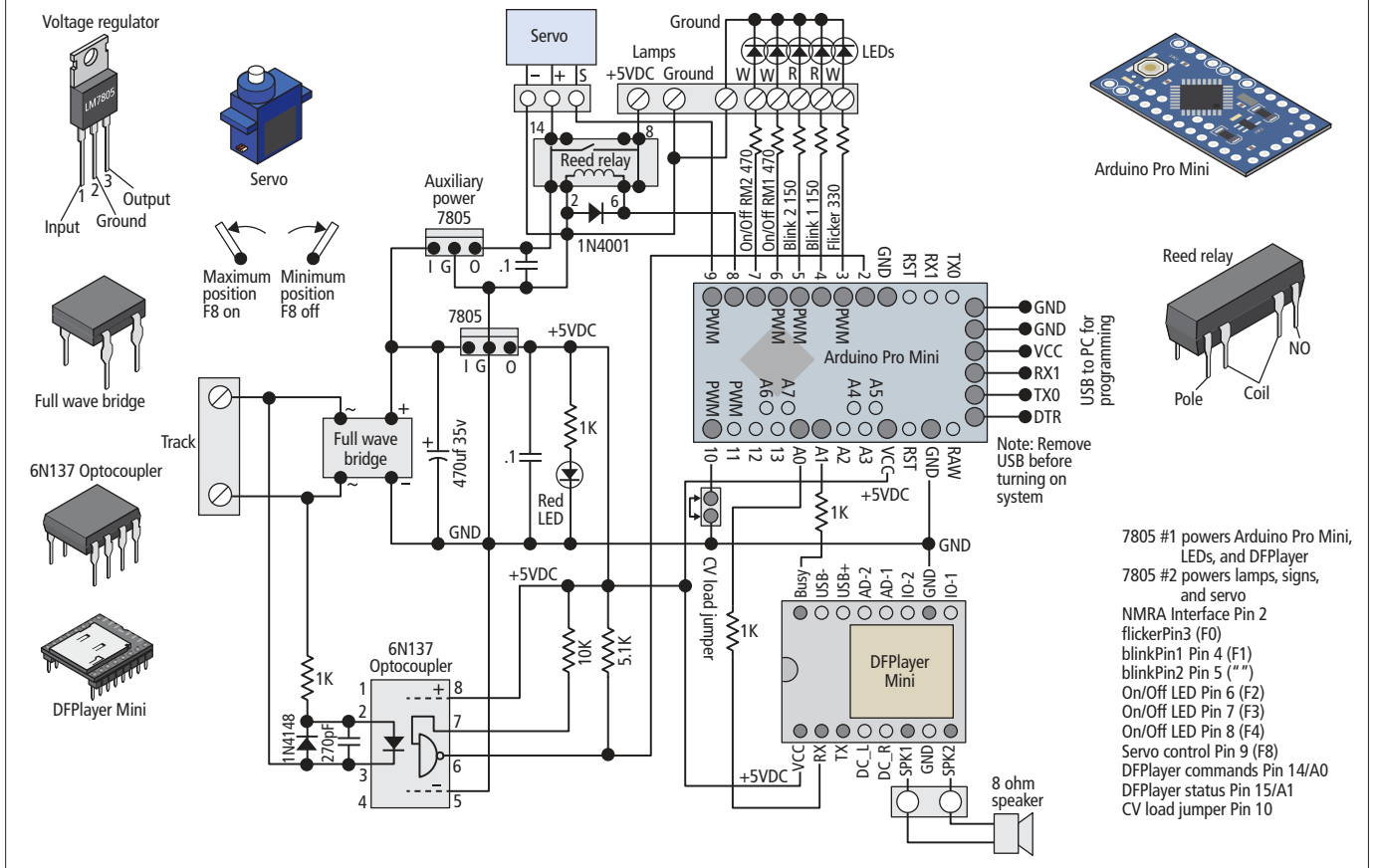
Like a typical decoder, the animation decoder can change its operating characteristics by adjusted Configuration Variables (CVs). These include CVs 30 through 41, which specify operating characteristics. For example, CV34 identifies the sounds to play when F5 is activated.

The software loaded into each project microcontroller has default values for each of the CVs. If the "CV Jumper" is plugged in on the circuit board, the default values will be enabled.

The typical programming steps are as follows: (1) with decoder powered, remove CV jumper, (2) do OPS mode programming to "current" address, (3) leaving the jumper out, do a reset with the MiniPro Reset button, (4) leave jumper out for operation unless there is a need to restore the default CV values.

The CV values are stored in nondestructive memory (EEPROM) within the microcontroller so the values will be retained even if the decoder is turned off. They are restored each time the decoder is turned on. If the CV jumper is restored, the default values will be activated. — Fred Miller

Multi-function Animation Decoder



The wiring diagram for the Multi-function Animation Decoder may look daunting at first, but using a perfboard and graphic wiring aid helps the wiring development process.

other for powering the servo and relay-operated devices. This provides isolation of possible relay and servo noise from the microcontroller. Since the voltage regulators drop the voltage provided by the DCC track circuit (typically 12–15 volts) down to 5VDC they do generate some heat. I use a custom heatsink to dissipate that heat.

My implementations have used inexpensive parts mounted on a perfboard. I use a graphic wiring aid drawn from the basic circuit to mount and wire the parts, left. Note the wiring aid is first drawn as a top view showing the wiring connections to the parts; then the drawing is flipped to show the soldering connections made on the bottom of the board.

The parts are positioned on the board such that the micro SD memory card can

be easily inserted/removed from the DFPlayer device to change sound files. Also the programming pins on the Arduino Pro Mini are positioned to allow access for software modifications.

The software for the Arduino Pro Mini microcontroller in the MFAD was developed using the standard Arduino development package (IDE) and several provided “libraries” of code that enable simple access and control of devices such as the DFPlayer and the servo. One essential library was developed by Alex Shepherd for implementation of the NMRA DCC commands and CV controls. Additional work and samples of using the library for DCC decoders was done by Dr. Geoff Bunza. I am deeply indebted to these gentlemen for their help and guidance. [MR](#)



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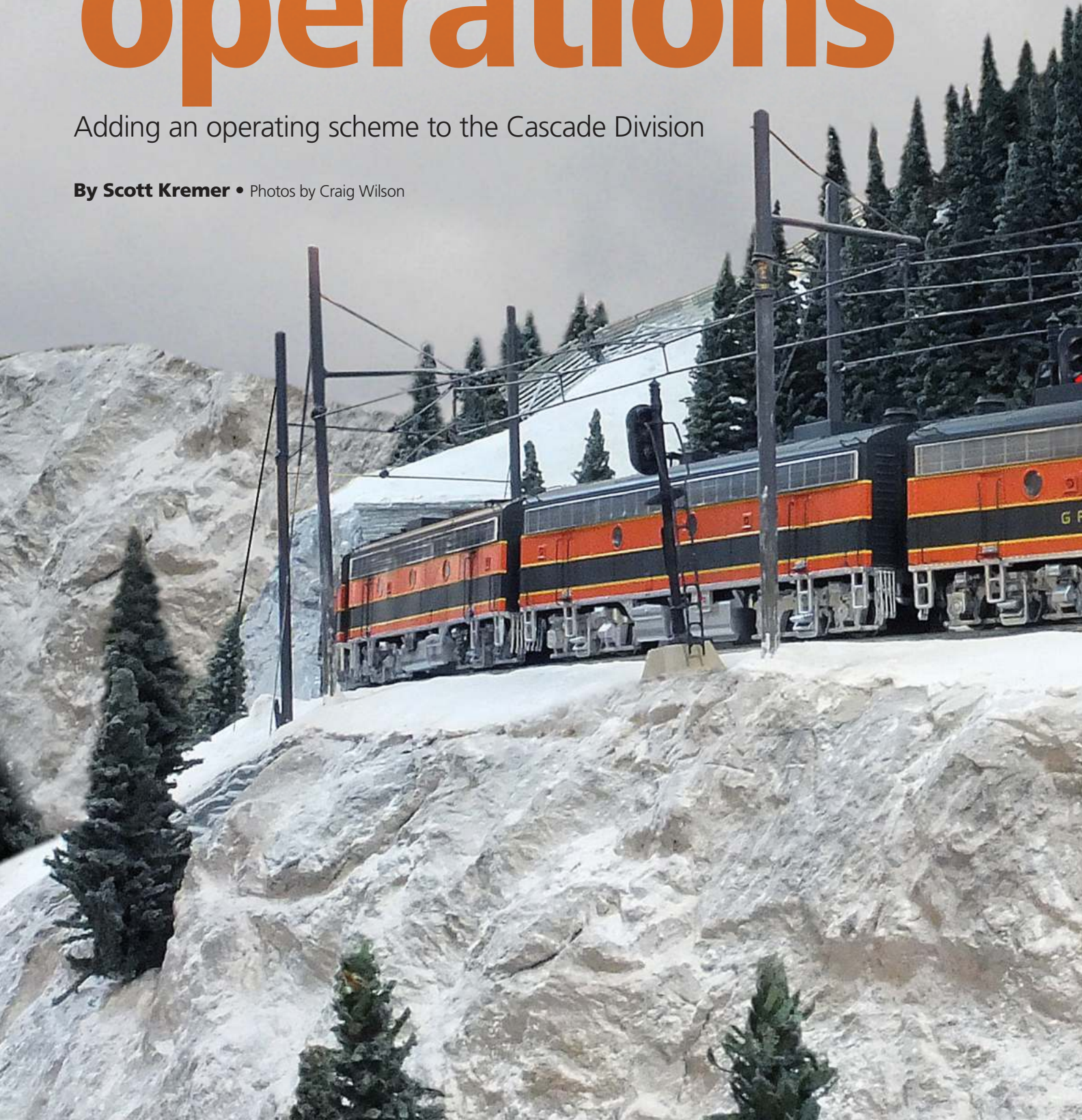
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Transition to operations

Adding an operating scheme to the Cascade Division

By **Scott Kremer** • Photos by Craig Wilson





① With a pair of class Z boxcab electrics in the background, Great Northern No. 368C leads the *Empire Builder* into Cascade Tunnel station. Scott Kremer's HO scale Cascade Division runs under the assumption that the 8-mile-long Cascade Tunnel was never constructed, and GN still runs the line through the old tunnel.

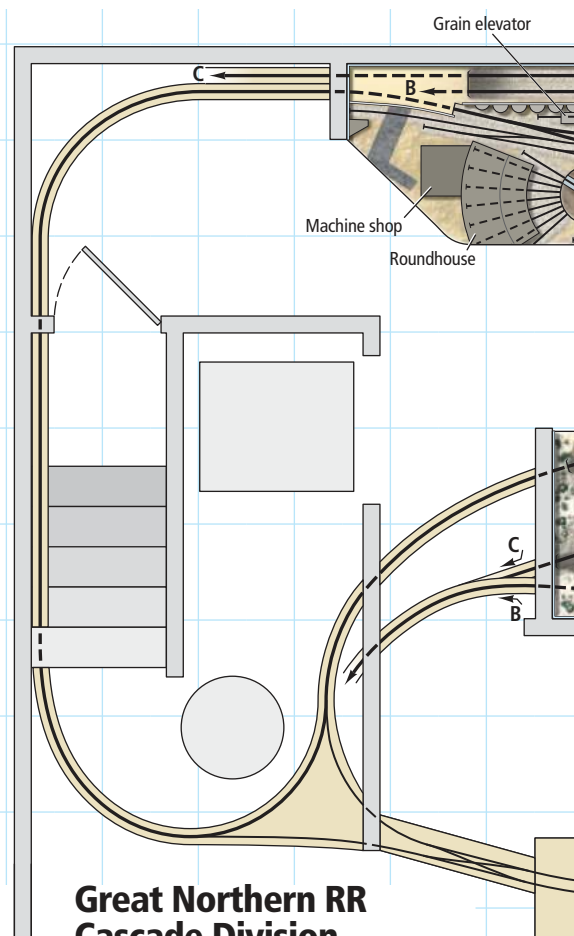


② Extra 2514 East moves slowly as it arrives in Wenatchee, Wash. The train will stop here for a crew change and to pick up orders before continuing east.

I fell in love with the Great Northern Ry. when I was very young. It started with a Varney F3 in GN's simplified scheme. Before long I settled on the Cascade Division as the basis for my model railroad, specifically the portion from Skykomish to Wenatchee. Much time has passed since that early interest, but it just got more intense.

I started building my layout in 1982 with the purpose of re-creating a railfan layout that would make me feel like I was there. Living in Michigan meant seldom having the opportunity to travel to Washington to see the real thing. That layout, the history, and construction were featured in *Model Railroader's* February 2008 issue.

However, life goes on and changes all the time and luck can even be involved. First, I was asked to join a Friday night round-robin group, the Midnight Pocatello Yardmasters. They are a group of superb modelers that helped me become a better modeler. Perhaps more importantly, they operated their layouts, something that was new to me, but what fun. Operating schemes were somewhat varied. Most were "mother may I" dispatching. Many of the model railroads featured



Great Northern RR Cascade Division

Scale: HO (1:87.1)
Room size: 24 x 42 feet (main room)
Scale of plan: $\frac{3}{16}$ " = 1'-0", 24" grid
Numbered arrows indicate photo locations
Illustration by Kellie Jaeger and Rick Johnson

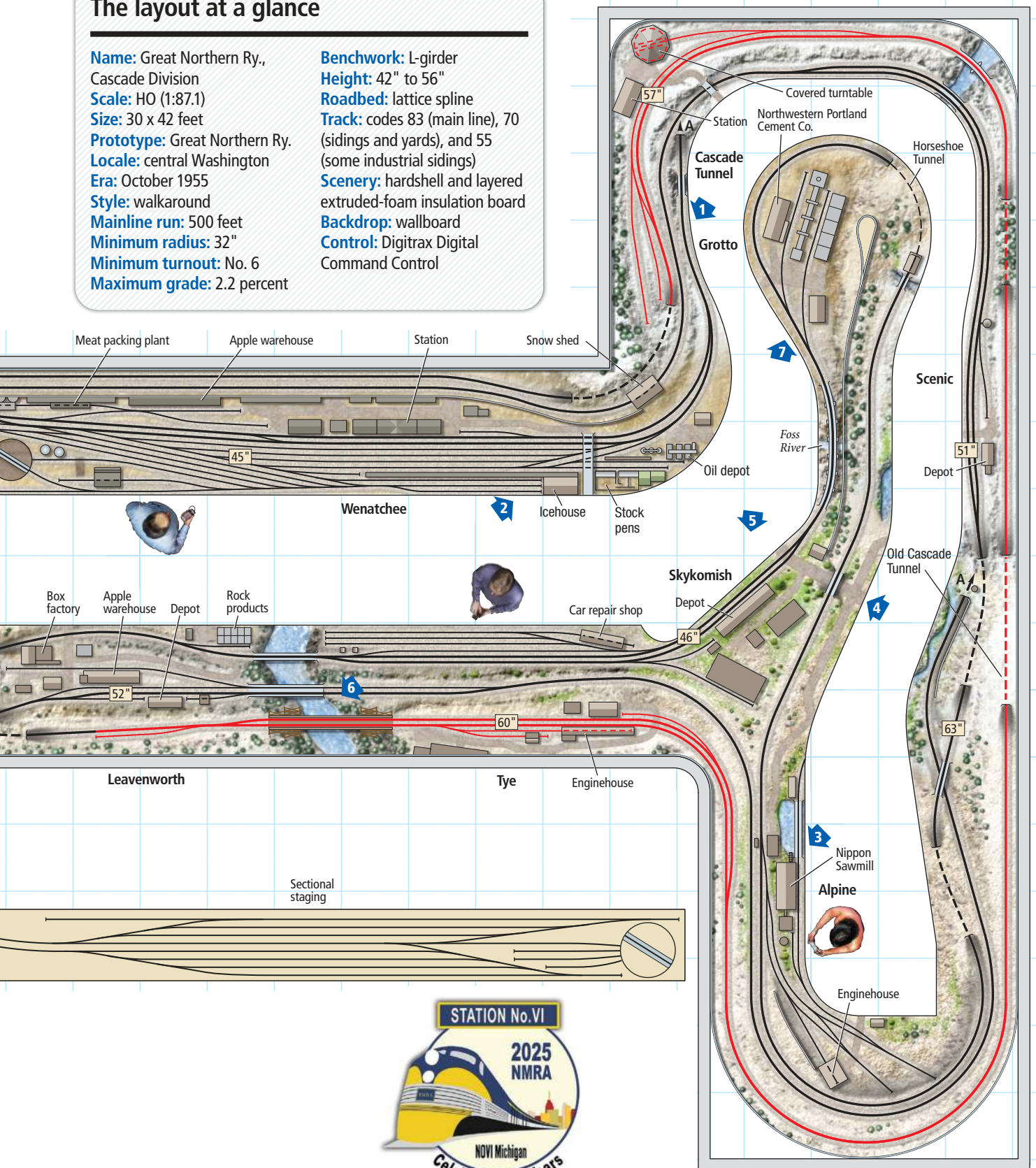
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— Electrified track

The layout at a glance

Name: Great Northern Ry.,
Cascade Division
Scale: HO (1:87.1)
Size: 30 x 42 feet
Prototype: Great Northern Ry.
Locale: central Washington
Era: October 1955
Style: walkaround
Mainline run: 500 feet
Minimum radius: 32"
Minimum turnout: No. 6
Maximum grade: 2.2 percent

Benchwork: L-girder
Height: 42" to 56"
Roadbed: lattice spline
Track: codes 83 (main line), 70 (sidings and yards), and 55 (some industrial sidings)
Scenery: hardshell and layered extruded-foam insulation board
Backdrop: wallboard
Control: Digitrax Digital Command Control





3 Here we see the sawmill in Alpine, Wash. The mill was owned by the Tumwater Lumber Co., a subsidiary of the Bloedel-Donavan Co. The TLC was a significant source of traffic for the GN and was sometimes a puzzle for crews to switch. The several Shays that were a part of the mill operation helped.



4 Extra 634 East is done with work in Skykomish and will head east for its next assignments. This is one of two locals that work the division and will be busy for the entire day.

direct-current control, which made for interesting, if somewhat restrictive, sessions. Communication included a loud voice or small radios. Car forwarding was by computer-generated switch lists or, in at least one case, four-cycle car cards.

I began to look at other layouts and how they operated, as well as the prototype railroads. What an eye-opener. The operating process used by real railroads varies drastically by time period, location, size, operational density, and tradition.



Then came the big question. What do I want to do? I remembered the golden rule of model railroading: "It's my model railroad." I visited a lot of layouts. I tried layouts that were a series of switching puzzles. I visited model railroads that would move 2,000 cars in a session. I visited layouts that were big and small and watched how that affected their operational choices. During this period, I began to modify my layout and develop the additional things needed, like a means of communication, staging, a car-forwarding system, and a dispatching system.



Then came a chance to learn from three people who had what I wanted. Now, before I go any further, I want to emphasize that what I want to talk about is for me. In total it may not be what suits you. But the one thing I hope you will think about after you have read this article is “do I want to be a model railroader?” By that I mean, is it important to you to have a layout that not only looks and feels like the prototype but is also run like the real thing?

The first two people I learned from were Doug Tagsold and the late Jack Ozanich. Both run full

timetable and train order (TT&TO) systems. Both also have single-track model railroads with long runs. My layout is a single-track, mountain railroad with a 500-foot main line. My six towns are all 60 to 90 feet apart.

Doug and Jack’s layouts keep a crew as large as 14 busy for hours but only move 10 to 16 trains. That few trains in a session that lasts anywhere from four to eight hours might seem slow to some, but it’s not. Both layouts included sufficient switching opportunities.

But not all trains do switching, which would cause

some modelers to dismiss TT&TO off hand. However, it isn’t unusual for some operators to just enjoy running a train, and TT&TO still requires that you keep your mind on the schedule and your orders.

The last piece of the puzzle came from Tony Thompson. He has a blog (modelingthesp.blogspot.com) that’s very informative. I was inspired by Tony’s series of posts about waybills, which are up to 115 at last count. If you’re willing to put in the effort, Tony will teach you how to develop a car-forwarding system that is very much like the prototype.

5 Extra 312 East is just starting to move on the siding. This train is heading for Stevens Pass and points east. In the background you can see the frame station in Skykomish. The station design is a standard Great Northern plan, typical of many on the road. On the side you can see a garden, which was a common feature at many GN stations.



6 A Y-1 electric waits on the bridge in Tye for its next trip east. The grade east out of Tye is 2.2 percent and the long freight trains can really use the help. The electrics are particularly important in escorting passenger trains through the long tunnel east of town.

Waybills are an essential part of running your layout like a “real” railroad.

In addition, I learned about “TIBS,” a method to identify your towns, their industries, and spotting locations. It works perfectly with waybills. In the end I found another piece of the puzzle I was looking for.

Having done the necessary research and finding how things work, I then modified my layout. The first item was

an expansion that eliminated tight spots and opened the whole layout, improving visibility and operator access. Next came a dispatcher’s office and an agent/operator desk. Seth Neumann helped me install a 1950s push-to-talk phone system with a phone at each station, a speaker and microphone for the dispatcher, and a beautiful antique candlestick phone on a scissor mount with headset for the agent. That took care of communication.

I installed train-order board mimics at each station controlled by the agent. I also added two tracks to my staging area. Finally, a fast clock that normally runs at 2:1 ratio was installed.

Once the physical changes were made, I addressed the paperwork. I know you don’t want to deal with paperwork. Well, neither do I really, but to me it’s worth it to feel that I’m working a real railroad. I developed a timetable and had it printed. It’s much more



than just a schedule. It has the rules and information necessary to run the trains, with much taken right from a 1955 Great Northern timetable. Did you know you are supposed to stop and inspect a train that has loads of long poles or pipes before going through a tunnel or a through bridge? Well, maybe that's carrying it too far, but it's what the real railroad did.

There are forms for the dispatcher to use, including train sheets, train orders, and

clearance forms. There are also books for the dispatcher and agent to use to record their communications. I was lucky again as my friend, Rich Remiarz, had made computer-based copies of all the forms used by the Great Northern and was kind enough to share them.

So, how does this all work?

An operating session on my layout can last six hours or more. That's half a day at 2:1. We use a dispatcher, an agent/operator, someone to work staging, two yardmasters, two crews for locals, and three for road crews. That comes to 10 people, a few more if we use any two-man crews. Note that the road crews do not do any switching, as I found out the hard way. While I was at Jack's I set out three cars, and he informed me never to do it again as I had just cost the railroad \$200 for working out of my assignment!

One of the good parts of my operating sessions is the variety of assignments. Running a passenger train is very easy. All you have to do is keep to the speed limit, follow the schedule, and OS (report passing) at each station. If you are going in the superior direction and are a

first class train, you don't even worry about another train. Other assignments are more complicated.

In the end I've found what I wanted. By my experience I know it's not for everyone. I like it, though, because it makes me feel as if I'm in the Cascade Mountains in October 1955 at the seat of a Great Northern Ry. Electro-Motive Division FT set with a string of cars behind me. I need to have read and signed the rule-book and remember I have to keep my mind on the job because I'm in the middle of the mountains and there's no one to tell me what to do. It's my responsibility. [MR](#)

7 Locomotive No. 182 works the Northwestern Portland Cement Co. in Grotto. The town and the plant are within the yard limits of Skykomish, so the crew can work the plant without worry except for scheduled trains. It's a busy place for crews, with multiple raw materials inbound and finished material outbound. It's important that crews understand what's being shipped and received and cars are spotted in the correct places.

Meet Scott Kremer

Scott is retired from his career as the Director of Generation Procurement with Detroit Edison. He purchased more than 8,000 prototype rail cars during his time there. Scott and his wife, Kitty, love to travel and have visited more than 40 countries. They have two grown children who have always had an interest in dad's model railroad.



FROM **CHICAGO** TO **CHAMPAIGN**

This 25 x 40-foot HO scale layout depicts the
Illinois Central Gulf in October 1976

By Brian Lingner • Photos by the author



My interest in model railroading started when I was around 8 years old and living in Chicago. At Christmas time, a neighbor filled his entire living room with Lionel trains for everyone to enjoy.

Later, as a teenager living in a southern suburb, I ran trains on a friend's layout. We also visited a model railroad that filled an entire bedroom, reminding me of the trains I enjoyed in my youth.

After going through the usual hobby hiatus (school, marriage, career), my interest in model railroading was renewed years later during a business trip to Denver. I stopped at Caboose Hobbies and purchased a Silver Streak mechanical reefer kit. I was hooked! Soon, I built a 6 x 10-foot layout with flextrack and turnouts.

I later moved to a northwest Chicago suburb where I constructed a model railroad on a 4 x 8-foot sheet of plywood. This is where I first attempted scenery.

In the late 1970s, I attended a National Model Railroad Association (NMRA) regional convention and visited an open house. The layout owner asked if I'd like to do some switching. Of course, I replied "Yes!" He showed me to a town where he had an Electro-Motive Division GP30 waiting and many industries to switch. The owner said he would check in on me later.

Two hours later he came back to rescue me. I'd finished the work and thanked him for the opportunity. Later, after I was included in his operating group, he taught me how to handlay track and custom-build switches. This was also my introduction to model railroad operations.

DAILY INSPIRATION

So what led me to model the Illinois Central Gulf, a product of the Aug. 10, 1972, merger between Illinois Central

(IC) and Gulf, Mobile & Ohio? When I was living in the south suburbs, I took the IC commuter train to Chicago each day. This gave me a front-row seat to activity along the entire route to the Windy City. Those memories would prove useful later as my intent was (and still is) to be as prototypical as possible.

Once my wife, Sharon, and I were settled in our new home in the northwest suburbs, I concentrated on designing a model railroad. We had family members that lived in the south suburbs, and each visit required a somewhat lengthy stop at Markham Yard to capture the action.

To determine how much of the ICG I could re-create, I took our travel trailer on week-long trips to follow and document the railroad. I also spoke with as many industry personnel in the towns I was interested in modeling as I could. Most were happy to oblige, and some even gave me the routing of both their inbound and outbound products.

❶ Illinois Central Electro-Motive Division GP28 No. 9429 is on the point of train PBC (Paducah, Ky., to Chicago) just north of Manteno, Ill., on Brian Lingner's HO scale layout. The 25 x 40-foot model railroad is set between the Windy City and Champaign in October 1976.





② Electro-Motive Division and General Electric road units wait in the siding with an empty coal train at Peotone, Ill., while a Centralia-built caboose marks the end of a loaded train passing on the main line. In the background, a pair of Geeps spot a pipe load at the team track.



③ As a trio of Paducah-rebuilt Geeps hustle a northbound freight above, local fishermen try their luck in the shallows just past the spillover of the Kankakee River. The bridge is one of the signature scenes on Brian's model railroad.

THE SECOND TIME AROUND

Armed with all this data, I converted the finished basement family room by adding wallboard to the upper half of the paneling, painting it blue, spraying clouds using stencils, and rearranging the drop ceiling lighting.

I then built my first version of the ICG. Unfortunately, it had too many negatives, including duckunders and direction reversals. I tore it down and began work on the model railroad shown here.

The current layout is a point-to-loop design from Chicago to Champaign, Ill., ICG's 100-mile crew district. The track plan follows a 1973 ICG Condensed Profile with some modeler's license, such as changing double-track areas to single track with passing sidings.

The north end of the layout represents Chicago. The 10 staging tracks are all stub-ended. The south end is Champaign and all points south. The 13 staging tracks there are a loop in the crawl space. Trains start at Central Station (MP 0) and run past Donnelly & Sons to Harvey (MP 20). From there they pass Markham Yard and

are visible until Otto Tower (MP 60) before entering Champaign staging.

BENCHWORK AND TRACK

I constructed the layout using open-grid benchwork with risers supporting the $\frac{3}{4}$ " plywood subroadbed. I topped the plywood with $\frac{1}{2}$ " Homasote.

All visible track, and some in staging, is handlaid code 83. I built all of the turnouts in place. I turned to code 100 flextrack and turnouts for the hidden staging yards.

I added power feeders to each 3-foot section of rail. Most turnouts are operated via a toggle switch that controls a slow-motion Hankschaft display motor; others use Caboose Industries manual ground throws.

The first operating session on the layout was a nightmare due to lack of staging tracks. I resolved the issue by giving two members some liquid refreshment and having them go into the crawl space to raise Champaign staging 6 inches.

Then Kankakee was removed, a middle level was built for improved Chicago staging, and the tracks from Manteno to

The layout at a glance

Name: Illinois Central Gulf

Scale: HO (1:87.1)

Size: 25 x 40 feet plus 12 x 16-foot staging in crawl space

Prototype: Illinois Central Gulf

Locale: Chicago to Champaign, Ill.

Era: October 1976

Style: walk-in

Mainline run: 350 feet

Minimum radius: 30"

Minimum turnout: No. 5

Maximum grade: less than .5%

Benchwork: open grid

Height: 46" to 59"

Roadbed: $\frac{3}{4}$ " plywood and $\frac{1}{2}$ " Homasote

Track: code 83 (handlaid) and code 100 (flextrack)

Scenery: window screen covered with joint compound

Backdrop: $\frac{1}{8}$ " wall board and tempered hardboard

Control: Lenz Digital Command Control

the crawl space were raised accordingly. The final change was the addition of more staging tracks at Champaign.

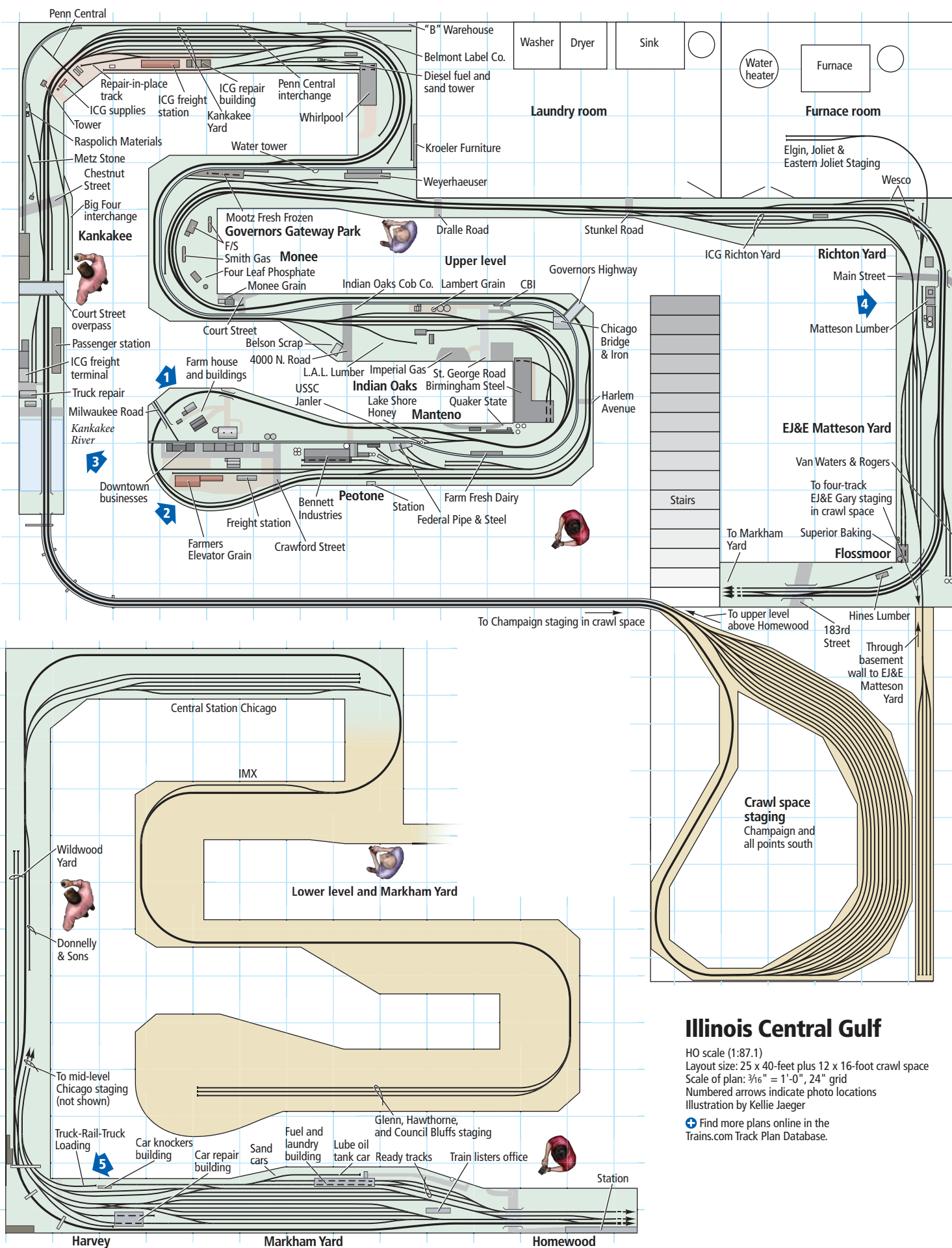
SUCCESSFUL SCENERY

To model changes in elevation, I made a web of cardboard strips covered with window screen and Durabond 45 joint compound. For smaller land contours, I applied the drywall mud directly to the layout and shaped it to the desired look. After the compound set, I painted these and all flat surfaces dirt brown.

Before applying Woodland Scenics' fine and coarse turf, I spread a thin layer of white glue. After the scenery material was in place, I sprayed it with wet water (water with a teaspoon of isopropyl alcohol added) to break the surface tension. I secured the ground cover with a 50/50 mix of water and white glue (with a teaspoon of isopropyl alcohol added) applied with a Nalgene LDPE unitary wash bottle. For later scenes I used a Noch Gras-Master to apply various shades of static grass.

BRIDGES AND BUILDINGS

The most challenging scene was the Kankakee River bridge, which I built and scenicked at the workbench. The structure is made up of 30 3-D printed parts, graciously produced by a member of our operating group. Once assembled I painted it and set it aside.



Illinois Central Gulf

HO scale (1:87.1)

Layout size: 25 x 40-feet plus 12 x 16-foot crawl space

Scale of plan: $\frac{3}{16}$ " = 1'-0", 24" grid

Numbered arrows indicate photo locations

Illustration by Kellie Jaeger

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



4 Elgin, Joliet & Eastern's patriotic SD38-2 No. 668 approaches Matteson Yard to start its local work. In the background, three ICG Geeps pull out of Markham Yard with train CM-3 (Chicago to Memphis). The speed recorder on the roof of Matteson Lumber indicates train CM-3 passed detector No. 1 at 29 scale mph.



Brian uses swing and lift-in sections to provide access to the laundry room (solid door) and furnace room (louvered doors).

Bridging the gap

When the railroad isn't operating, access is needed to the laundry room (solid door) and furnace room (louvered doors). Both the swing and lift-in sections were built using open-grid benchwork.

The swing section has attached 2 x 2 legs with rolling chair wheels on the bottom. It's connected to the permanent layout with a 3" strap hinge. The wiring for track power, switch machines, and DCC plug-in throttles is permanently connected and lengthened to accept the swing.

The swing section rests on a support on the wall side of the permanent layout and another support against the wall with a locking hinge. The lift-in section rests and is locked on similar supports at the end of the permanent layout and end of the swing section.

Jones plugs provide connections for the track power and switch machines. When both sections are in and locked, rail joiners keep the tracks aligned. — *Brian Lingner*

I modeled the Kankakee River in two sections. The front section, on which the bridge is placed, is permanent and has a spillover on the backdrop side. The back section is removable to gain access to the tracks underneath.

I made both river bottom sections from 1/2" pressboard. After painting the material, I added walls and embankments. Then I sealed the edges and poured the river with Enviro-Tex epoxy resin. Once the resin cured, I added waves with Mod Podge.

Finally, I set both river sections in place and attached the bridge to the front section with canopy glue.

Wanting to follow the prototype as much as possible limited the number of usable off-the-shelf building kits. As a result, about 80% of the structures are scratchbuilt, using pictures and field measurements as guides. Due to space limitations, some buildings had to be selectively compressed. I included some industries not found on the prototype to increase operations.

Fellow modelers contributed three scratchbuilt structures. Most of the downtown buildings in Peotone are reworked Design Preservation Models kits. The remaining structures are from Wm. K. Walther's Inc., the majority heavily kitbashed.

DIESELS AND ROLLING STOCK

My locomotive fleet has a mix of first- and second-generation diesels. America's bicentennial year saw a colorful mix of units on the full-size ICG, and my fleet reflects that. I have diesels in IC's Green Diamond and orange-and-white schemes, as well as GM&O diesels.

Approximately 70% of the units are custom painted and decaled.

Except for one local with a single engine, most trains feature two or three diesels. The lead engine is always sound equipped. In three-unit consists, the third unit is unpowered and unlit, placed between two powered units.

Paired units always remain together. As such, they don't have reverse headlights. Each consist also uses the same Digital Command Control (DCC) address for ease of programming.

Most of the rolling stock is typical of the era. About 30% of the cars are custom built, painted, and decaled based on prototype photos. Plenty of kitbashed and customized hazmat tank cars move across the railroad, testing the yardmaster for proper train placement.

RUNNING TRAINS

I use a Lenz DCC walkaround system to control trains. The layout is operated using handwritten track warrants. We follow a 3:1 fast clock, resulting in three 8-hour sessions.

A typical operating crew consists of a dispatcher, two yardmasters, two local crews, and four road crews. Each operating session sees around 20 trains, consisting of two locals and a mix of freight, passenger, coal, and trailer-on-flatcar traffic. A 1973 ICG freight manifest provided the train names and times. I used modeler's license to include some prime IC passenger service from late 1967.

Markham Yard is the originating and terminating point for all freight and interchange traffic. Live interchanges from Chicago staging to Markham Yard include the Belt Ry. of Chicago, Grand



5 A pallet of steel coils is being loaded onto a Truck-Rail-Truck bulkhead flatcar near Markham Yard. The loaded cars will then be added to the Chicago-to-Memphis train (CM-3).

Trunk Western, Indiana Harbor Belt, and Soo Line. West Line staging sends trains from Hawthorne Yard, Glenn Yard, and Council Bluffs, Iowa.

All road freights make at least one set out and pick up en route. During the AM session, an ICG local runs from Markham Yard to Richton Yard. Once there, making three separate moves, it works Richton, Governors Gateway Park, and Monee, then returns.

During the Midday session, a second ICG local originates in Kankakee Yard and works all trailing point sidings in Indian Oaks and Manteno. The train leaves cars for facing-point sidings on the storage track at Indian Oaks before proceeding to Peotone. Normally the work there is finished at the end of the session.

At the beginning of the PM session the second ICG local heads back, working Manteno's other siding and the remaining spurs in Indian Oaks before returning to Kankakee. The Kankakee yardmaster usually has several cars to weigh using a Boulder Creek Engineering Weigh Station. Each session also has industry-specific switch jobs.

In addition to ICG, I also run trains from the Elgin, Joliet & Eastern (EJ&E) at Matteson, Ill. Two locals are run, one from Joliet staging in the AM session and the other from Gary staging during the PM session. The EJ&E doesn't run during the Midday session.

The EJ&E locals serve online customers and deliver interchange cars to the ICG at Richton Yard. ICG road trains deliver cars to the J's Matteson Yard.

Meet Brian Lingner

Brian Lingner of Cary, Ill., retired after 41 years in the Bell System. He has been married to wife, Sharon, for 60 years. The couple enjoys spending time with family, attending musical presentations, dinner with friends, and riding an occasional dinner train.



During the AM session, the EJ&E returns empty coal cars to the ICG via the same interchange. Loaded coal cars are received from the ICG during the PM session.

FUN WITH FRIENDS

I'm happy that model railroading is my hobby as there are so many ways to find satisfaction. Most days I spend some (or a good amount) of time working on projects. There are still buildings to finish and rolling stock to kitbash.

Almost every Friday night I'm at a member's model railroad for an operating session. In addition to running trains, I enjoy the post-session camaraderie when we have pie and coffee. Other daytime sessions are enjoyed as well.

I'd like to thank all of those I've encountered over the years for their help, sharing the hobby, and hosting and participating in operating sessions. My satisfaction re-creating the prototype comes when someone compliments a scene, building, or equipment that they recognize. **MR**



In this final installment of the T-Trak series, Bryson and David add scenery, structures, and details to their Colorado Plains model railroad.

From plywo Colora



Part 3: Creating scenery, installing structures, and adding details to our Colorado Plains T-Trak layout

By Bryson Sleppy • Photos by the author and David Popp

With the modules built and the wiring finished, it was finally time for the most interesting part — scenery. Though the plains of Colorado are fairly flat, they do have more interest than our bare-wood modules. And since the T-Trak modules are flat to begin with, it provided a nice base for our scenery efforts. We used David's river module to add further topographical variety. We have a lot to do, so let's get started.

A river and roads



David started the scenery work by creating landforms using a few scraps of 1/2" extruded-foam insulation board leftover from other projects. He used the foam to give some shape to the rectangular trough in the RSLaserKits bridge module, as well as to add some shallower hills and other elevation to the rest of his modules ①. To make the terrain cohesive between scenes, some foam hills span two modules, but are cut where the modules join each other ②, next page.

Speaking of cohesiveness between modules, we made sure our roadways and other infrastructure matched between modules as well. The base of our roads is made

using four strips of N scale cork roadbed laid down and secured side-by-side with wood glue. The cork works well for making the tighter curves needed for N scale. T-pins assisted in holding the cork in place on curves while the wood glue dried. The pins grab well in the soft plywood used on the modules.

When the glue dried, we surfaced the cork with Woodland Scenics Smooth-It ③. The fine-grain plaster product was mixed with water and tinted with Woodland Scenics C1220 Black liquid pigment. If the road surface were to get chipped, it would be light gray instead of bright white.

David installed grade crossings on two of his modules. The best

od to do

A river and roads (cont'd)



time to install the panels is right before the Smooth-It. He used Woodland Scenics modern grade crossing panels (No. C1150) ④, on the crossing over straight track and Blair Line wood crossings (No. N-026) on the crossing over curved track.

The Woodland Scenics crossings include several thicknesses of styrene shims to adjust the height so they

fit properly. The .010" strips work the best with Unitrack. The only modification needed with the Blair Line crossings was to remove the molded tie plates from the outside sections of Unitrack. The laser-cut wood panels aren't notched to fit around those details. The Smooth-It plaster locked the grade crossing panels in place when it dried ⑤.

We set the width of all roads on the layout at a scale 24 feet. After the Smooth-It had set up, but before it dried completely, we used a scale rule and pencil to mark the 24-foot width on the roadway. Then we shaped the edges with a hobby knife. We followed that with a chisel blade to chip away at the unwanted material. This was much easier to do

before the plaster road system had fully cured.

Once the plaster completely hardened, we used a fine-grit sanding sponge to remove lumps from the surface of the road. However, full-size roads have many imperfections, so we kept some dips and potholes. Now that we had our roads, it was time to add some terrain with Sculptamold.

No more bare plywood

After paving the roads with Smooth-It, we switched to another scenery product — Sculptamold. The art modeling compound works great for filling in the bare spaces around the Unitrack and roads. Sculptamold can be formed while it's still malleable to create ditches and small knolls. It adheres well

to the plywood and foam and creates solid, yet lightweight, landforms ①, opposite. Virtually every part of each module without tracks or roads on top was covered to give us some elevation changes, even if subtle.

After the Sculptamold was dry, the next step in our order of operations was to

finish the roads. After sanding the roads flat and vacuuming up the dust, pavement markings were added with Woodland Scenics road striping pens and a flexible rule ②.

Once the stripes had dried (about half an hour), David made a wash using acrylic pavement-colored paint cut

50 percent with water. This was brushed over the top of the roads and grade crossings. The wash helped darken the Smooth-It, tone down the road stripes, and give everything a weathered look ③.

We then turned to the Steel Rail Track Painter pen (No. TT4580) from the



Woodland Scenics Tidy Track series to paint the web of the rails **4**. Be sure to wipe off any excess from the top of the rails before it dries as that will affect electrical continuity. Painting the rails enhanced the realism of the Kato Unitrack, and the easy-to-use pen made the process go much faster.

Our final step before ground cover was to paint the Sculptamold. Colorado soil, particularly along the Front Range, is a sandy tan color. And since some of that soil shows through the vegetation, we picked Burnt Almond (280F-4) from the Behr paint line at The Home Depot. David had a quart

mixed in its flat, interior premium paint line. One quart should be sufficient for a dozen or so modules.

We used 1"-wide chip brushes to apply the paint, as we had roads and track to work around **5**. We dipped the brushes in water periodically so the paint would flow better into the Sculptamold,

which has a lot of irregularities in the surface **6**. This technique is very useful whenever painting over Sculptamold or plaster cloth.

Another tip is to mask the Unitrack before you begin painting. Since we chose to paint our fascia the same color, we painted that at the same time.

Time for ground cover



Scenery works best in layers, just like nature. So we started on the bottom layer and worked our way up. The first task was to add gravel and dirt on the shoulders of the roads and all driveways and lots.

We first spread white glue where it was needed **1**, then sifted Woodland Scenics Fine Gray Gravel (No. C1286) into the wet glue. A plastic spoon gave us more control when sifting **2**. Vacuuming up the excess left a smooth, level surface.

Periodically when applying glue, we dipped the paintbrush into water, and then back into the glue. This thinned the material just enough to make it easier to work into the irregular surfaces of the terrain.

After the gravel layer was dry, we again brushed white glue onto the surrounding

scenery and applied the next lowest layer, Woodland Scenics Earth Blend Fine Blended Turf (No. T1350) **3**. Again, we sifted it into the glue with a spoon and then used a vacuum to remove excess material.

To ensure the ground foam and gravel stayed put, we had to do two things. The first was to apply a wetting agent. David used 70% isopropyl alcohol for this step, applying it with a plastic pipette. Alcohol is thinner than water and will wick its way into the gravel and ground foam easily without disturbing those materials or beading up on the surface, as seen in **4**.

The second step was to apply thinned white glue, such as Woodland Scenics Scenic Cement (No. S191). The wetting agent broke the surface tension, which



allowed the glue to work all the way through the different scenery materials.

Once the alcohol and glue was applied, we did a lot of other things to the scenery. David sifted fine green ground foam into the wet glue on his farmhouse module, and we applied static grass to many of the empty

spaces. Woodland Scenics Burnt Grass Static Flock (No. FL633) produces knee-high prairie grass in N scale **5**.

In addition to static grass, we applied coarse turf on top of the grass fibers to suggest other prairie plants had grown up around the grass. The finish line was now within sight.

Ballast and backdrops



Kato's No. 24-039 ballast matches the colors on the plastic Unitrack roadbed and can be used for both N and HO scale track. It does a good job at hiding the hard, straight edges of the Kato track sections and looks great weathered ①.

After the rest of the scenery was complete, we applied the same full-strength white glue along the edges of the Unitrack all the way up to the top. We did the same thing for the area between the two tracks as well.

Then ballast was sifted into the wet glue using a plastic spoon. While the glue was still wet, we used the edge of a 1"-wide foam paintbrush to shape the ballast and level it with the top edge of the plastic roadbed ②. Like our ground cover, the ballast was soaked with

70% isopropyl alcohol, then secured with Woodland Scenics Scenic Cement. Start at the bottom edge of the ballast to avoid disturbing the loose granules.

After the ballast and surrounding scenery was complete, David made some weathering mixes to airbrush on the modules. For the grime between the rails, he diluted Vallejo Model Air 71.057 Black 1 part paint to 5 parts thinner. He airbrushed the thinned black down the gauge of both tracks, building up the effect in a couple of light layers.

Next, he mixed 1 part Vallejo 71.029 Dark Earth to 3 parts thinner and applied it to the edges of the ballast where it met the surrounding scenery. The color is close to the original base paint we used on the scenery, but it also has some of the hues of

the Earth Blend Woodland Scenics fine turf we selected for the ground cover.

Finally, we needed a sky. David cut sheets of 1/4" medium density fiberboard (MDF) to the T-Trak skyboard (backdrop) standards for our double and quadruple modules that weren't on corners. If you want to watch David paint the backdrops, check out his video on Trains.com. In a nutshell he started by painting the skyboard blue with a flat, latex house paint. It needed to be darker at the top, so he used a collection of acrylic craft paints and cut a piece of cardboard out of a box for a palette, then set to work.

While the sky paint was still wet, he brushed in some Apple Barrel 20596E Cobalt Blue. Then he added clouds starting with Apple Barrel 20503E White and some

water. A little bit of Apple Barrel 20526E Country Gray, some Cobalt Blue, and a touch of 21490 Pavement were added ③. All of the paints in the clouds were thinned with water. You want some sky blue to show through the clouds to give the illusion of a single light source ④.

While the freshly painted backdrops were drying, we added Noch assorted deciduous trees (No. 24603), telephone poles, mailboxes, street signs, figures, and other details to the modules. With that, it seemed our T-Trak project layout was done. But not so fast.

David and I started two more double modules that we built live at Trainfest 2024 in Milwaukee. You can see some photos of the modules in News & Reviews near the front of this issue. [MR](#)

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SCRATCHBUILD

John Winter scratchbuilt these wood pallets using cardstock and stripwood. The wood-patterned cardstock, found at a craft store, gives the pallets a realistic texture and variation.

REALISTIC WOOD PALLETS

Stripwood and printed paper make the process easy and inexpensive

By John D. Winter

Photos by the author

My HO scale model railroad is at the point where I'm adding details to create eye-catching scenes. Of those details are wood pallets for my loading docks and freight yards. Originally, I purchased some plastic pallets online, but they didn't give me the realism I was looking for.

I started experimenting with techniques and materials to create more realistic scale models of this common item. My first effort came out close, but the size was off and the wood-patterned craft cardstock I used was white on the back, so it didn't look right from some angles. My next attempt used plain brown cardstock cut from a file folder. I got the size right, but I didn't want to draw woodgrain on the boards. I preferred the cardstock from my first try.

My third attempt was a success. I folded over the cardstock with woodgrain detail and glued it back-to-back with spray adhesive. This not only made both sides look right, but it also made the boards a little closer to scale thickness.

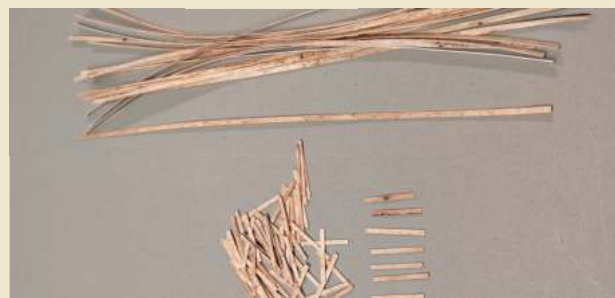
I've enjoyed making these pallets and placing them around my layout. I find that for less than \$3 in materials, I can make close to 60 pallets from one sheet of paper and five strips of basswood. **MR**

STEP 1: WOOD FROM CARDSTOCK

To begin the project, get a sheet of cardstock with woodgrain pattern from the scrapbooking section of your local craft store. Fold the material in half with the blank side in and the woodgrain facing out. Then use spray adhesive to glue the two halves together.

After the adhesive has dried, use a hobby knife and a metal straightedge to cut the paper into strips about 6 scale inches wide. Cut in the direction of the printed woodgrain. Don't worry if your boards aren't exactly to scale width; boards vary on the prototype, too.

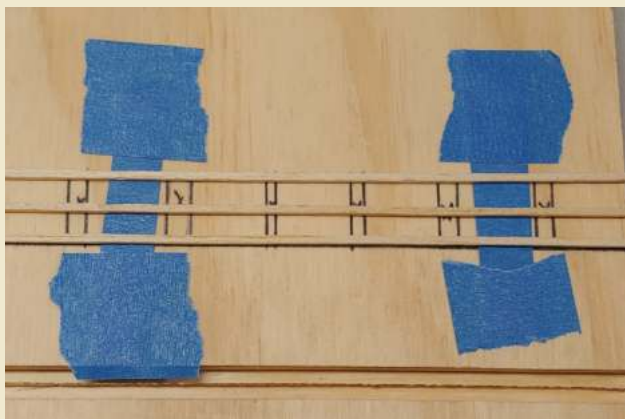
After cutting the strips, trim them into segments about 5 scale feet long. These will be cut to length after assembly, so this dimension doesn't have to be exact.



STEP 2: WORK ON YOUR CORE

The next step is to lay out a template on a piece of scrap wood. Draw two lines 4 scale feet apart and then mark off 4-foot boxes within them, leaving a small space between the boxes to separate the pallets. Place a strip of painter's tape in each box, sticky side up, and use more tape to attach the strips to the board. This will hold your pallets in place as you build them.

Begin by placing two strips of $\frac{1}{16}$ " square stripwood on the long edges of the template, then center a third strip between them. This size of stripwood works out to about $5\frac{1}{2}$ " in HO scale, which is a little oversize, but looks fine.

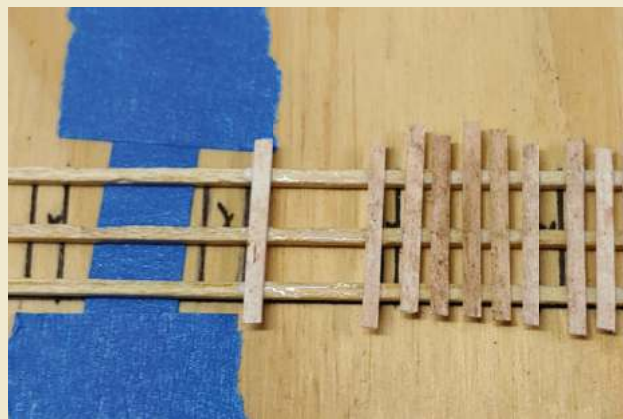


STEP 3: ADD THE TOP BOARDS

With the stripwood in place, glue the paper strips to the top using white glue. Spread a thin layer along the top of the three wood strips. Only work on one or two pallets at a time, because the glue dries quickly.

Start with the outer two boards, aligned with the edges of the squares on your template. Add the middle board, centered between them, and then center two more in the space between the center and outer boards.

While placing the boards, look at both sides to see which one has more "character." The pallets will look more realistic if adjacent boards don't have the same color and pattern.

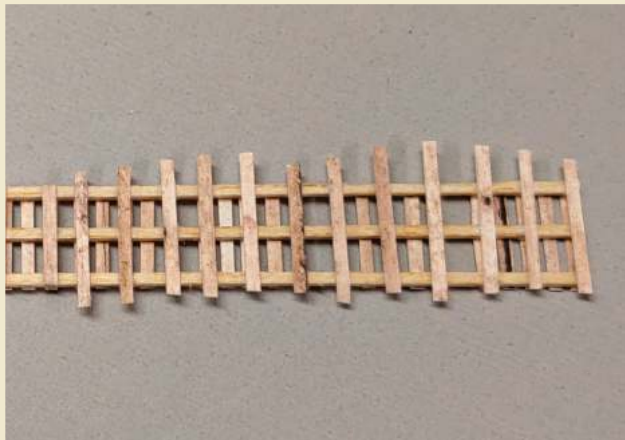


STEP 4: BOTTOM BOARDS

Gently pry the assembly off the tape after the glue has dried. Flip the assembly over and, using a hobby knife, trim off the ends of the boards.

Once this is done, attach the bottom boards. As before, start with the two outer boards, then add the one in the middle. The bottom only gets three boards, not five as on the top. Once the glue has dried, flip the assembly back over and trim the ends.

When this is complete, check if any of the boards are bent due to handling during the gluing process. If they are, insert a piece of $\frac{1}{16}$ " basswood through the openings on each end and push the boards back into place.

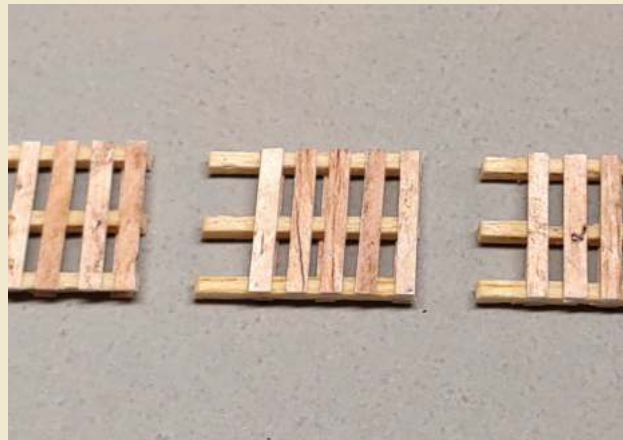


STEP 5: THE FINAL CUTS

When you are happy with the look of the assembly, you can cut the individual pallets apart. Once they are separated, trim the stripwood to its final length, flush with the outer top and bottom boards.

Check through your finished pile and find the best ones to display individually. If some have crooked boards or don't look quite right, you can use those as fillers in stacks of pallets.

One variation I plan to try is to stain a couple basswood strips gray and use paper with a gray woodgrain pattern to create aged pallets that you might see laying neglected behind buildings or in ditches.



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Decorated with vintage signs on all sides

HO Scale Dimensions: 4-3/8"W x 3-1/4"D x 2-1/2"H

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Electric staff systems

Don't fret: Electric staff systems do not produce an instrument intended to prod reluctant employees. Now, forgive me for this dad joke and I'll explain that they're a method of train operation, uncommon in the United States, over designated single-track lines. I'm glad that a reader prompted me to explore the subject because the possibility of layout applications takes shape.

I ran across the term in a 1948 Delaware, Lackawanna & Western employee timetable long ago. It made me curious, but I dismissed it as an oddity. Collecting information for this column surprised me with how extensively it was used elsewhere. Even more surprising, Australia's Transport Sydney trains relied on its use between Kiama and Bomaderry until 2014. Picture a station manager on the platform handing an electric staff to the driver of sleek, modern equipment under catenary!

The system dates to Victorian England and an 1888 London and North Western Ry. patent. It's a form of absolute manual block operation. Absolute means that only one train at a time can use a block. Manual means that signals are operated by hand. This includes operating an electrical switch which controls a signal. By contrast, track circuits control signals in an automatic block system. Possession of a metal rod called a staff authorized movement in a staff block without the need for a schedule or a train order. After

operators with interconnected machines at both ends of a block confirmed it was clear, a machine at the entrance dispensed a staff which the operator handed to a train's engineer. Only one staff could be removed from the system at a time. Only one train could use the staff block because the system prevented another staff from dispensing until the original staff was deposited in the exit machine. Following moves could be made because the machines contained more than one staff. However, a second staff could not be withdrawn and given to a following train until the first train's staff was placed in the exit machine.

Northern Pacific relied on staff systems at Bozeman Tunnel, Mullan Tunnel, Old Town Tunnel (near Tacoma) and Stampede Tunnel. Stampede makes an ideal example. Double track on both sides funneled down to 3 miles of single track through the tunnel, between Martin and Stampede. Keeping traffic moving created a heavy train order workload. The staff installation in 1916 relieved this workload. It was so efficient that it continued in service until Centralized Traffic Control replaced it in 1958. Dave Sprau, a Northern Pacific dispatcher retiree,

observed that the staff system was "a poor man's CTC" run by staff operators under a dispatcher's direction.

Lackawanna's governed 2½ miles of its Bangor & Portland Branch in eastern



Atop what Northern Pacific railroaders called "the pulpit," the Stampede operator passes a staff as if hooping up an order in July 1945. The pouch dangling from the hoop contains the staff. J. M. Frederickson photo, courtesy of Pacific Northwest Railroad Archive, JMF02-03725

Pennsylvania, between Shops (a point in Bangor) and Martins Creek Junction. There, a conductor, not a staff operator, could withdraw a staff. However, typical of staff rules, an engineer wasn't allowed to operate the machine. The B&P installation outlasted NP's, remaining in service until at least 1966. Santa Fe, Southern Pacific, Milwaukee Road, and Great Northern also employed staff systems.

I bet **Rube Goldberg** would envy staff machines. They were odd ducks that looked like a Toledo lollipop penny scale crossed with a pinball machine. Search "electric train staff instrument" and you'll see. Searching "Sydney Trains End of the Line" on vimeo.com will delight you with a 17-minute

documentary commissioned upon retirement of the Transport Sydney electric staff installation.

Who would sacrifice precious layout space to such imposing machines? However, Aaron Stinson replicates them on his Illawarra Line layout with an electronic microcontroller design. It mimics a staff with a radio frequency identification (RFID) tag that locks out another until the tag is tapped in when the train exits the staff block. His club is considering using the system to control movements in a helix. This appeals to me; it reminds me what Bill Darnaby said when I asked why he put an automatic permissive block section on his Maumee layout. "Because I think it's neat." Is there any better reason? **MR**



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Extra 3309 drifts downgrade under dynamic braking with an empty hopper train past the abandoned and overgrown coke ovens at Red Warrior, W.Va. The Chesapeake & Ohio U30C is an Atlas model with LokSound. It's being assisted by a Stewart F7A. The hoppers are from InterMountain and Bowser. The scene is on Brian Kelly's HO scale Kanawha Subdivision layout (set in the summer of 1971), which appeared in *Great Model Railroads 2023*. Richard (John) Seabrook took photo.



Goose No. 5 passes over the Salmon River on Al Sohl's On30 Western Bay RR in Port St. Lucie, Fla. The No. 5 was scratchbuilt by Al, a National Model Railroad Association Master Model Railroader. All the scenery was done with Joel Bragdon casting materials. Chip Pecere photo





A westbound Norfolk & Western

Y6-powered empty coal drag tops off the tender under the coaling tower between Tug and Fairfax, W.Va., on Gary Hoover's HO scale layout. Inspiration and planning came from the N&W prototype at Vicker, Va. The tower is a scratch bash using a Walthers kit as a starting point. Gary took photo.

Send us your photos

Trackside Photos is a showcase for the work of *Model Railroader* readers. Send your photos (digital images 5 megapixels or larger) on a flash drive to: *Model Railroader*, Trackside Photos, 18650 W. Corporate Dr., Suite 103, Brookfield, WI 53045; or email them to us at editor@modelrailroader.com.

Conrail No. 6662 growls through the urban confines of Brooklyn, navigating litter and trash to drop off a boxcar on Doug Foscale's 1970s era HO scale model railroad. The Athearn engine, ex-Erie Lackawanna SD45-2, was weathered by Doug's friend Charlie Panzera. Doug, from southeastern Connecticut, took photo.





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Schedule of Events Rate: \$45 per issue (55 word maximum). Ads will contain the following information about the event: state, city, sponsoring organization and name of event, meet, auction or show, dates, location, times, admission fee, name and/or telephone number and/or email of person to contact for information. Name, daytime telephone number and street address of the person providing the information is also required but need not be included in the ad. Unless otherwise requested, ads will be published in the issue month that the event occurs in. Please specify issue date(s). **Word Ad Rates;** per issue: 1 insertion — \$2.03 per word, 6 insertions — \$1.89 per word, 12 insertions — \$1.77 per word. \$40.00 MINIMUM per ad. To receive the discount you must order and prepay for all ads at one time. Count all initials, single numbers, groups of numbers (i.e. 4-6-0 or K-27), names, address number, street number, street name, city, state, zip, phone numbers each as one word. Example: John A. Jones, 2102 South Post St., Waukesha, WI 53187 would count as 10 words. For MR's private records, please furnish: a telephone number and, when using a P.O. Box in your ad, a street address. **Model Railroader** reserves the right to refuse listing. **All Copy:** Set in standard 6 point type. First several words only set in bold face. If possible, ads should be sent typewritten and categorized to ensure accuracy.

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

Schedule of Events

AL, MOBILE: Model Train Show sponsored by South West Alabama Railroad Modelers (SWARM). Via Health, Fitness and Enrichment Center, 1717 Dauphin Street. March 8-9, 2025, Saturday 9:00am-5:00pm; Sunday 11:00am-4:00pm. Admission \$8.00, family \$15.00, under 10 free. Operating layouts, demonstrations, and dealers. Contact Charlie Boyer, 251-454-0572 (before 9pm CST), email: charlieboyer66@att.net, or Glenn Samuel, 205-914-0693, email: gasamuel@aol.com

CO, COLORADO SPRINGS: Train Expo Colorado (TECO) hosts its next model train show on February 22-23, 2025. Saturday 9am-5pm and Sunday 10am-3pm. Colorado Springs Event Center, Hall B 3960 Palmer Park Blvd., Colorado Springs, CO 80909. Admission: \$11/person, children 12 and under are free, senior and military discounts available. Contact Elizabeth 915-491-4819 or visit www.tecoshow.org

CO, DENVER: Rocky Mountain Train Show. April 5-6, 2025. National Western Complex, 4655 Humboldt St., Denver, CO 80216. Saturday, 9:00am-5:00pm, Sunday 9:00am-4:00pm. 3 acres of model trains, all scales, 30 layouts, 700 sales tables, clinics and more. Admission \$15.00, under 12/scouts in uniform FREE. Discounted tickets available for military/first responders through VetFix.org. Free Parking. 303-364-0274, www.RockyMountainTrainShow.com

FL, OCALA: Lions Tri-Annual Train Show. First Christian Church, 1908 E. Fort King St., Ocala, FL 34471. Saturday, March 8, 2025, 9:00am-2:00pm. Model trains, accessories, detail parts and toys. Admission \$5.00, children 12 and under free w/paid adult. Bring two canned goods and receive \$1.00 off admission. Food/snacks available. Information: Bob 352-694-6381 or cell 352-547-0938

FL, PINELLAS PARK: Regal Railways presents Toy Trains & Hobby Show. Lopez Inc. Hall, 7177 58th St. North, Pinellas Park, FL 33781. Saturday, March 22, 2025, 9:00am-2:00pm. Admission: \$6.00 adults, children under 12 free. Vendors and model train layout. Lunch available. Contact: Joe at 727-244-1341 or visit: www.regalrailways.com for more information.

IL, SPRINGFIELD: Springfield Railroad Society Annual Train Fair. Orr Building on the Illinois State Fairgrounds. Sunday, March 9, 2025, 10:00AM-4:00PM. Early bird shopping starts at 9:00AM for \$10.00. Admission fee \$5.00 from 10:00AM-4:00PM. Free parking. Largest show in downstate Illinois! For info call Mike at 217-899-3100 or Ray at 217-544-4295 or visit www.springfieldtrainfair.com

IL, URBANA: Lincoln Square Train Show, 100 W. High St. Urbana, IL 61801. March 29-30, 2025. Saturday, 8am-5pm, Sunday 11am-4pm. Hosted by Illinois Terminal Division, NMRA. FREE public admission. Railroadiana and historical societies. Fremo set-up and run. Free parking and wheelchair accessible. Vendor table info at: <https://www.illinoisterminaldivision.org/show/show.htm>

IN, LA PORTE: La Porte County Train Show and Swap Meet. La Porte County Fairgrounds Community Building, 2581 In-2. Sunday, February 23, 2025, 9:30am-2:00pm (Chicago time). Adults \$5.00, youths 6-12 \$1.00, 5 and under free. Contact: Dave Novak at trains86@myyahoo.com or 219-778-3195.

KS, LAWRENCE: Lawrence Model Railroad Club Annual Train Show and Swap Meet. March 1-2, 2025. Crown Toyota, 3400 S. Iowa St., Lawrence, KS 66046. Saturday 9am-5pm; Sunday 9am-3pm. Admission: Adults \$10.00, children 12 & under free with paid adult. Bring a canned food donation, receive \$2.00 off admission. Contact: Jim Turner, 785-393-6207, bike2turner@gmail.com, or visit: www.lawrencemodelrailroadclub.org

MN, ST. CLOUD: Granite City Train Show and Sale. River's Edge Convention Center, 10 4th Ave S, St. Cloud, MN 56301. Saturday, March 8, 2025, 9:00am-3:00pm. \$6.00, kids 10 and under FREE! Buy/sell model/toy trains, books, videos, railroad collectibles. Operating model & toy train displays. Win a LIONEL train set! 612-558-6484; GraniteCityTrainShow@gmail.com or visit: www.GraniteCityTrainShow.com

NJ, BRICK: ECTP and Collectibles LLC presents The Brick Train Show. Elks Lodge, 2491 Hooper Avenue, Brick, NJ 08723. Sunday, March 2, 2025, 9:00am-2:00pm. Admission: \$7.00; under 12 free with adult. John LaLima 732-845-5966. Go to www.eastcoasttrainparts.com and click on The Brick Show.

NJ, CLARK: Jersey Central Train Show & Sale. Mother Seton Regional High School, 1 Valley Road, Clark, NJ 07066. Sunday, March 2, 2025, 9:00am-3:30pm. Admission: \$7 adults, children under 12 free, \$14 family. Model trains, railroadiana, photos, slides, books and videos. Refreshments available. For information: Heinz Ricken, hicken@gmail.com, 908-272-3910, or Mitchell Dakelman, dakelmanm@aol.com, 908-208-2522

NY, HAMBURG: TCA Upstate NY Chapter Toy Train and Collectible Toy Show! St. Marys of the Lake Church Hall, 4737 Lakeshore Rd. (Rt. 5), Hamburg, NY 14075. Saturday, March 8, 2025. TCA Members: 8:30am, General Public: 9:00am-2:00pm. Admission: Adult \$5.00, Children 12-17 \$3.00, Upstate Chapter Members & children under 12, free. Contact: Mike 716-913-4195, Email: tca.upstatenychapter.events@gmail.com

OH, TOLEDO: Greater Toledo Train & Toy Show. Owens Community College (SHAC), 30335 Oregon Rd., Perrysburg, OH 43551. Sunday, March 9, 2025. "Early Birds" - 9am \$10. General 11am \$7. Children 12 and under are FREE with paid adult. Show runs until 3pm. Contact: Randy Ramsey, 1566 South Ave., Toledo, OH 43609, 419-215-4181, email: toledotoymasters@gmail.com, website: www.toymasters.org

OR, PORTLAND: Saturday, March 8, 2025, 9am-3pm. Willamette Model Railroad Club 38th Annual Swap Meet. Kliever Armory, 10000 NE 33rd Dr., Portland, 97211. Admission: \$6.00 Adults, 12 & under free w/adult. Free Parking. Food available. Over 114 tables, all gauges. Table rentals: \$30/\$35. Website: wmrrc.com For Table Reservations contact: Roger Rees, wmrrcswapmeet@gmail.com, or 503-256-2248 (no text).

TX, HOUSTON: Greater Houston Train Show presented by the San Jacinto Model Railroad Club. Saturday, February 15, 2025, 10:00am-4:00pm. Pasadena Convention Center, 7902 Fairmont Parkway, Pasadena, TX 77504. Operating Layouts, Classes on Railroads and Modeling Subjects, NMRA Contests, and Vendors from across the Southwest. Admission: \$5, under 12 FREE, \$10 Family. Concessions and free parking. Visit: <http://sanjacmodeltrains.org/>

UT, OGDEN: 35th Annual Hostlers Model Railroad Festival. Ogden Union Station, Historic 25th St. & Wall Ave. February 28, March 1-2, 2025, Friday 3:00pm-8:00pm; Saturday 9:00am-6:00pm; Sunday 9:30am-2:30pm. Admission: adults \$8, weekend pass \$12, 12 and under FREE. Layouts - all scales, many vendors, LEGO layout. Biggest train show in the Intermountain West. Information: Robert Cannon 801-589-7928, www.hostlers.info

VT, ST. ALBANS: Vermont Rails Show. Collins Perley Sports & Fitness Center, 890 Fairfax Rd., St. Albans City, VT 05478. Interstate 89, Exit 190. Saturday, March 8, 2025, 10:00am-4:00pm. Adults \$8.00, children 6-12 \$2.00, children under 6 free. Sponsor: NWV Model Railroad Association. Contact: Chris Weinberg, 339-832-9178, or visit: www.nwvrrailroad.org

WA, SPOKANE: River City Modelers Spring Model Train Show, Spokane Fairgrounds, 404 N. Havana. Sunday, March 9, 2025, 9:30am-3:30pm. Admission: adults \$8, 12 & under free. 200+ tables of Railroad related items for sale, operating layouts, Free-MO, Operation Lifesaver & more. Free Parking. For table rental or general info, contact: Shirley Sample, 509-991-2317 or shirley@busnws.com

WI, LA CROSSE / ONALASKA: La Crosse & Three Rivers Railroad Club's 44th Annual Model Railroad Show. Omni Center, 255 Riders Club Road, Onalaska, WI 54650. March 15-16, 2025. Saturday 9:00am-5:00pm, Sunday 10:00am-3:00pm. Adults \$8.00, \$7.50 with a non-perishable food item, 2-day pass \$12.00, children 11 and under free w/adult. Info: Belva Thompson, 608-780-7364

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

Classifieds

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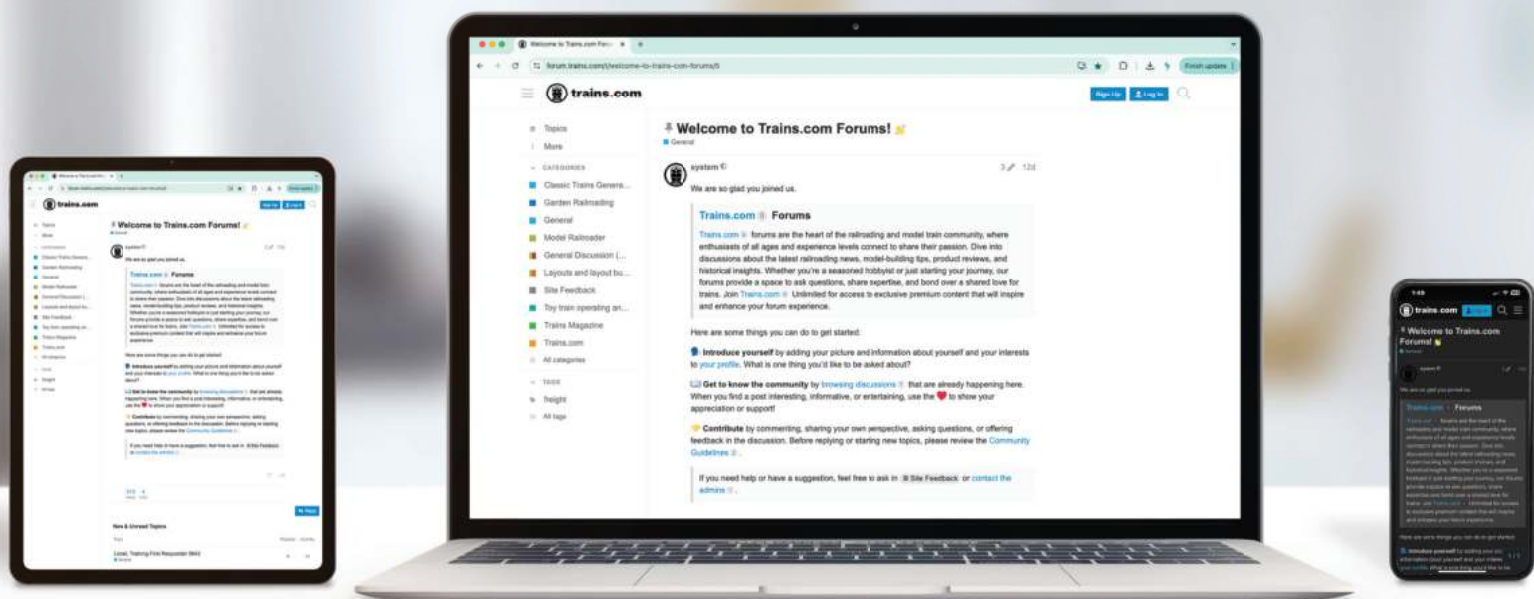
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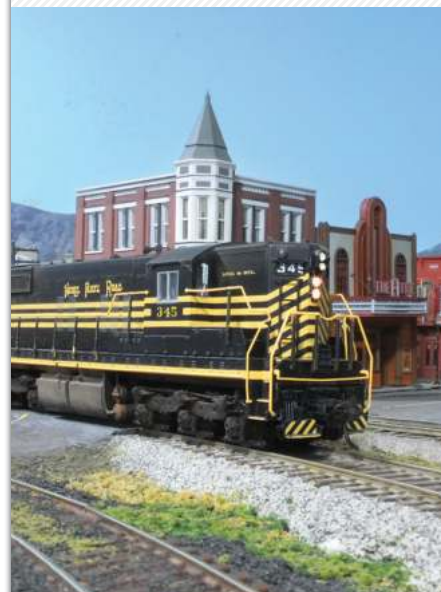


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Atlas Model Railroad Co., Inc.	5	Menard Inc.	35
Axian Technology	23	Model Rectifier	7
Azatrax	56	Model Train Market.	9
Bachmann Industries, Inc.	76	Modelers Marketplace.	67-68
Broadway Limited Imports	17	Nicholas Smith Trains	18
Bull's Gap Railroad Museum	18	PECO Products.	15
Circuitron	18	Rapido	2
Cordele Main Street	23	Showcase Express	9
Custom Model Railroads	56	Sievers Benchwork	23
Digitrax	56	SoundTraxx	23
Evergreen Scale Models	23	Spring Creek	23
Great Midwest Train Show.	56	The Space Store.	72
Great Train Expo	56	Train World	9
Greenburg Shows	56	Trains.com	66
Halfpricehobby.com	9	Trainz.com	56
Kato USA Inc.	75	Wm. K. Walthers, Inc.	3
Ken Patterson	29	Woodland Scenics	61
Loco-Boose Hobbies	23	Yankee Dabbler	18
Märklin, Inc./LGB.	9, 35		

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Looking under the hood



An operating session on Jason Klocke's HO Chicago Great Western has just ended, and his crews (including Clark Propst in the distance) were not hampered or distracted by clutter under the railroad. Lucas Chowen photo

Back in my high school days, I had a 1953 Ford with a flathead V-8 engine. It wasn't very fast, but with dual exhausts and glass-pack mufflers, it sounded pretty good.

Under the mantra of "If it won't run, chrome it," the engine compartment was a thing of beauty. When I pulled into a gas station and asked the attendant to check the oil, which wasn't an idle request, as that 8-banger did consume its fair share of that petroleum beverage, you could see his eyes widen and jaw drop. The air cleaner and battery box were polished chrome, and the sparkplug wires and fuel line were a transparent, sparkling red material. Invariably, his first look would be followed by a "Hey, Bob! Come over here and look at this!"

Somehow, in the intervening years, I've lost my touch for keeping things "under the hood" so neatly and beautifully organized. I wouldn't dare touch anything under

the hood of my SUV, for example, and hence I seldom give it a glance unless a service technician calls my attention to something that needs special attention, which is never.

But my model railroad could use some TLC in that regard. It started well when I erected hardboard skirting around the railroad and, following David Barrow's lead, painted the fascia and valance Union Switch & Signal Centralized Traffic Control machine green (or whatever Sherwin-William's computer deemed was a close match) and everything below that black. This gave the railroad a "floating" appearance, and 20 years later, I'm still delighted with the effect.

But things have begun to pile up in areas where the skirting was attached to a stud wall supporting the peninsula. In some areas, I purchased document storage cases that came equipped with casters and filled them

with my prototype and model railroad magazines. But now I need to thin the herd, as I'm out of shelf space and the magazines are being stuffed into nooks and crannies. Some are now available online, which will help.

Other clutter comprises parts for ongoing projects such as our efforts to install working interlocking plants at several foreign-road junctions. Fair enough; they will disappear when the parts in them are used up. But others contain Plan B: some O scale models that I keep in reserve for the day when I move to — what, a retirement community, perhaps? Would I have room for an O scale switching layout there? I'll ask some friends who recently made such moves.

Meanwhile, perhaps I should erect some shelves to get those boxes off the floor.

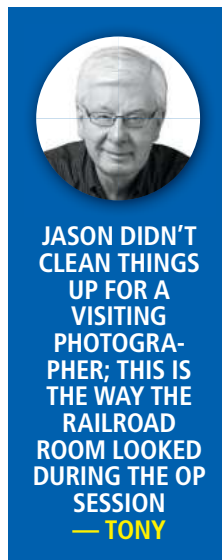
What brought this Train of Thought to mind was Lucas Chowen's accompanying photo taken as an operating session on Jason Klocke's HO Chicago Great Western had just ended. It's a nice overview of a large portion of the railroad, but I'm sharing it with you not for what it shows but for what it does not show: clutter "under the hood." Jason didn't clean things up for a visiting photographer; this is the way the railroad room looked during the op session.

I can recall several occasions when a good friend of mine on a layout tour would do a quick 180 and leave just because the room that housed it was a mess. The effect was so off-putting that he couldn't enjoy the railroad. That may be an extreme reaction, but it's probably an extension of what many of us feel.

When I'm checking photos for *Model Railroad Planning* article candidates, I often have to coach contributors to clean up the mess under their layout and re-shoot the photos.

They're so used to seeing it that it never occurred to them that it was a distracting eyesore from their excellent modeling above. Their operating crews, like mine, probably got used to the clutter and never said a word.

Which reminds me; I have some work to do in the basement. **MR**





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