

Model SPECIAL ISSUE
Railroader.

LOOK INSIDE How-to tips in every story!

GREAT Model Railroads ²⁰²⁰

Holiday 2019

**10 incredible
layouts**
in multiple scales
and room sizes!

**Maine
narrow-gauge >>
and more!**

p.48

PLUS

**Pennsy and
New York Central
in O scale** p.26

The New Haven under wire p.68

Branchline action on the Tootin' Louie p.8

**BIG,
DETAILED
TRACK
PLANS!**

Lou Sassi captures
the feel of 2-foot
railroading on his
compact On30 San-
dy River & Rangeley
Lakes layout. Page 48

www.ModelRailroader.com

Get on the Fast Track!

New book from
Tony Koester



Coming in
November

In his new book, ***Time-Saving Techniques for Building Model Railroads***, Tony Koester shares many time-saving tricks he learned from decades of experience as an accomplished model railroader and author.

Building a model railroad — especially a room- or basement-sized layout — takes a lot of time. This book shows you time-effective methods to get your layout built and operating, while making sure your goals of realism are still met.

Topics include:

- Planning ahead to save time.
- Using LDEs (Layout Design Elements) with staging.
- Layout construction and techniques.
- Improving rolling stock and locomotives.
- And more!

#12817 • \$21.99


Kalmbach
Media

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

Sales tax where applicable. *Time-Saving Techniques for Building Model Railroads* will arrive in November 2019.

Questions About Your Account? We're Online 24/7!



It's easy to manage your
subscription online!

- Pay your bill.
- Change your address.
- Renew your subscription.
- And much more!

P30336

Visit
subscribe.modelrailroader.com/help

YankeeDabbler.com

Check out our complete train store!

Repairs and decoders installed.
N, HO, S, O, G

Authorized Dealer:

Digitrax, ESU-LokSound,
NCE, Soundtraxx, TCS



OPEN
Tue-Sat
Web(24x7)

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

www.yankeedabbler.com

Build Your Great Model Railroad With Caboose!

The ultimate full-service
train enthusiast's store.

We have all the supplies, tools
and knowledge to help you
plan & build your dream layout.
More than 157,000 items,
over 587 manufacturers,
most at a discount from
full retail – all at a fair price.

As always, in-stock orders of
\$100.00 or more ship free
within the Continental U.S.!

*surcharges may apply for oversized items.

CABOOSE

Sharing Our Passion for Trains Since 1938

10800 West Alameda Ave.
Lakewood, CO 80226
(303) 777-6766
Open 7 days a week!

MyCaboose.com

Nace's Videography, LLC

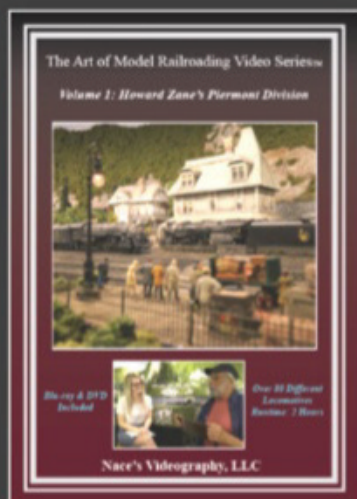
The Art of Model Railroad Video Series TM

Now Shipping! Volume 2: Tony Koester's Nickel Plate Road

- Complete Operation per the 1954 Timetable, with you viewing from trackside!
- Specialty Segments: How To Clinics, Interviews, Staging with Crew Operations, & more!

The most comprehensive model railroad operation & documentary programs ever made!

Volume 1:
Howard Zane's
Piermont Division



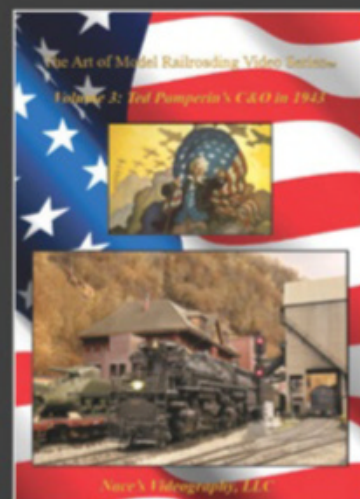
Professional Model Railroad Entertainment,
Discover the Difference!

2019 WINNER OF 3 AWARDS!

The Telly Awards



Coming in 2020!
Volume 3:
Ted Pamperin's C&O



www.nacesvideography.com • 800-285-8685 • forrest@nacesvideography.com



Model SPECIAL ISSUE
Railroader

GREAT **Model Railroads** 2020

8 Out and back on the Story City branch **HO**

A branch of the Minneapolis & St. Louis provides plenty of operation

By Clark Propst

18 Big mountains, small space **HO**

From Colorado Springs to the Rockies, this HO layout captures the D&RGW in 13 x 18 feet

By Lou Sassi

26 Look, Ma, no wires **O**

This 43 x 70-foot O scale empire runs on battery power, radio control

By Lee Gasparik

34 Pennsy's Elmira Branch in HO **HO**

A John Armstrong article inspired this huge layout, where PRR and NYC run joint coal trains

By Anthony Daniele

42 Making it mine **HO**

Details, scenery, and structures put the personal stamp on an HO layout built by professionals

By Gary Schaff

48 Ride the Sandy River **On30**

An MR contributing editor unveils his Sandy River & Rangeley Lakes

By Lou Sassi

58 The Blue Ridge Mountain Route **HO**

Modeling a Georgia short line offers loads of operation in a small space

By Tom Klimoski

68 Modeling the New Haven under wire **HO**

An HO scale layout first seen in August 2004's MR reaches completion

By Richard Abramson

78 The winds of Cajon past **HO**

Childhood memories inspired a Wisconsin modeler to re-create Southern California

By Dave Rickaby

86 Working the Placerville Branch **HO**

A California prototype inspired this double-deck "nolix" SP layout

By Tom Ebert

99 Viewpoint

A sense of purpose

By Steven Otte

ONLINE EXTRAS

WATCH VIDEOS of David Powell's Denver & Rio Grande Western, Tom Klimoski's Georgia North-eastern, and Lou Sassi's Sandy River & Rangeley Lakes.

DOWNLOAD 10 spectacular layout photos for computer wallpaper.

READ THE ORIGINAL ARTICLES about Gary Schaff's Hudson, Delaware & Lehigh and Richard Abramson's New Haven layout.

Check them out on
www.ModelRailroader.com



68



26



You'll know it when you see it

WHAT MAKES A MODEL RAILROAD "GREAT?" What qualifies a layout to grace the pages of this annual issue, dedicated to the best of the best? If you look at the variety of layouts featured in this issue, it's hard to pick out a single feature or descriptor that can apply to all of them.

Some features are obvious. Great model railroads have realistic scenery. For example, take David Powell's Denver & Rio Grande Western layout on page 18. Looking at the photos accompanying this article, you'll be surprised to know the model railroad is only 13 x 18 feet. David's scenic workmanship, seen not just in his mountains but in every creek, gully, yard, and station platform, proves that a layout doesn't have to be great in size to be excellent.

Great model railroads not only feature sweeping scenic vistas, but also reward close scrutiny. Masterful modeler, photographer, and author Lou Sassi's layout does this. His layout is populated with details and figures that make photos of the layout look like they were taken from real life.

Other model railroads' greatness can best be appreciated by taking in the layout as a whole. A great layout isn't just a collection of models; it is itself a faithful model of a working railroad, be it real or freelanced. Anthony Daniele's Elmira Branch, seen starting on page 34, is one of these. His layout is designed and built to accurately model the operations of joint Pennsylvania and New York Central coal trains on a PRR branch in Pennsylvania and New York.

But a truly great model railroad is more than just its track plan, scenery, or details. It has a special something that, like art, is easier to identify than describe. There's a reason the French phrase for that special something, "Je ne sais quoi," literally translates to "I don't know what."

I saw signs of that special something in the first photos Lee Gasparik sent in of his layout, seen starting on page 26. All the elements were there – realistic scenery, great details, a track plan designed to operate – but it also had something more. I knew when I saw Lee's model railroad that it was destined for GMR. Take a look and tell me you don't see it.

IF YOU HAVE BUILT or know of a model railroad that deserves to be immortalized in these pages, don't keep it to yourself. Shoot some Trackage Photos and e-mail them to me at sotte@kalmbach.com. Show me what makes your model railroad special.

There's no single answer to the question, "What makes a model railroad 'great?'" After all, the word isn't a description, it's a value judgment. Like art, you know it when you see it. And if you think your layout might fall into that category, we'd like to take a look at it.

Steven W. Otte

Editor Art Director Editorial staff

Steven Otte
Thomas G. Danneman
Hal Miller
Jeff Reich
Dana Kawala
Cody Grivno
Eric White
Scott Krall
Samantha Primuth
Rick Johnson
Roan Kelly
Jay Smith
Michael Soliday
Cindy Barden

Senior Graphic Designer Graphic Designer Illustrators

Director of Design & Production Production Specialist

Editorial
Phone: 262-796-8776
Fax: 262-796-1142
E-mail: mrmag@mrmag.com
Web: ModelRailroader.com



Kalmbach Media Chief Executive Officer Senior Vice President, Finance Senior Vice President, Consumer Marketing

Vice President, Content/Editorial Director

Vice President, Operations Vice President, Human Resources Senior Director, Advertising Sales & Events

Circulation Circulation Director New Business Manager Retention Manager Single Copy Specialist

Customer Service
Customer sales and service: 877-246-4879
Outside U.S. and Canada: 903-636-1125
E-mail: customerservice@modelrailroader.info

Dan Hickey
Christine Metcalf
Nicole McGuire
Stephen C. George
Brian J. Schmidt
Sarah A. Horner
David Sherman

Advertising and Trade Sales

Advertising Sales Director Scott Redmond
Advertising Sales Manager Lori Schneider
Advertising Sales Representatives
Martha Stanczak, 888-558-1544, extension 643
Mike Ferguson, 888-558-1544, extension 588
adsales@mrmag.com

Senior Trade Sales & Service Representative
Terri Meunier, 262-798-6513
tmeunier@kalmbach.com
Fax: 262-798-6592

GREAT MODEL RAILROADS (ISSN 1048-8685) is published annually by Kalmbach Media Co., 21027 Crossroads Circle, P.O. Box 1612, Waukesha, WI 53187-1612. Single Copy Price: \$9.99 U.S., \$10.99 Canadian and international, payable in U.S. funds drawn on a U.S. bank. (Canadian price includes GST.) BN 12271 3209 RT. ©2019, Kalmbach Media Co. Title registered as trademark. All rights reserved. Printed in U.S.A.

NEW YORK CENTRAL SYSTEM
HISTORICAL SOCIETY, INC.

The NYC is a great railroad to model...

Mike Fisher's, (NYCSHS member) painted and lettered HO-scale
BU Hudson and Mikado.

Central Headlight
Print & Digital Versions

NYCentral Modeler
Digital Download

NYCSHS
Online Store

•**Central Headlight**, popularly acclaimed printed magazine •**NYCentral Modeler**, quarterly online modeling magazine.
•**Annual Conventions** held at former NYC locations •**NYCSHS Archives** at our Headquarters in Middleburg Heights, OH.
•**Online Store**: Books, NYCSHS Archives DVDs, Apparel, NYC Scale Models, some exclusive NYCSHS releases. Members
enjoy **20% discount** on many store items. •You will benefit from the expertise of NYC historians, researchers and modelers.

50TH
ANNIVERSARY
1970-2020

Regular Memberships
only \$44 per year.
www.nycshs.net

Great new things are happening at the NYCSHS...Join Today!

NEW YORK CENTRAL SYSTEM HISTORICAL SOCIETY, INC.
Memberships
Dept GMR • P.O. Box 264 • Emerson, NJ 07630

RENEW OR JOIN WITH
PayPal
NYCSHS MEMBERSHIP

f t i

Storage Boxes



Self Closing

Fully Assembled • Foam Lined

AXIAN TECHNOLOGY

p: 623-580-0800 • f: 623-580-8008

21622 N. 14th Ave.

Phoenix, AZ 85027-2806

HO Scale

Holds 20 Cars - **\$29.95**

N Scale

Holds 36 Cars - **\$29.95**

Tote Bags

\$35.95

Plus S&H

Patented

U.S.A.

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

www.axiantech.com

Build Your Best!

Get a Full Year (12 issues) of
Model Railroader!

- How-to projects.
- Expert product reviews.
- Tips & techniques.
- Inspiring layout photos.
- Track plans.



To subscribe, visit ModelRailroader.com/Offer

Get More Inspirational Layouts for Less!

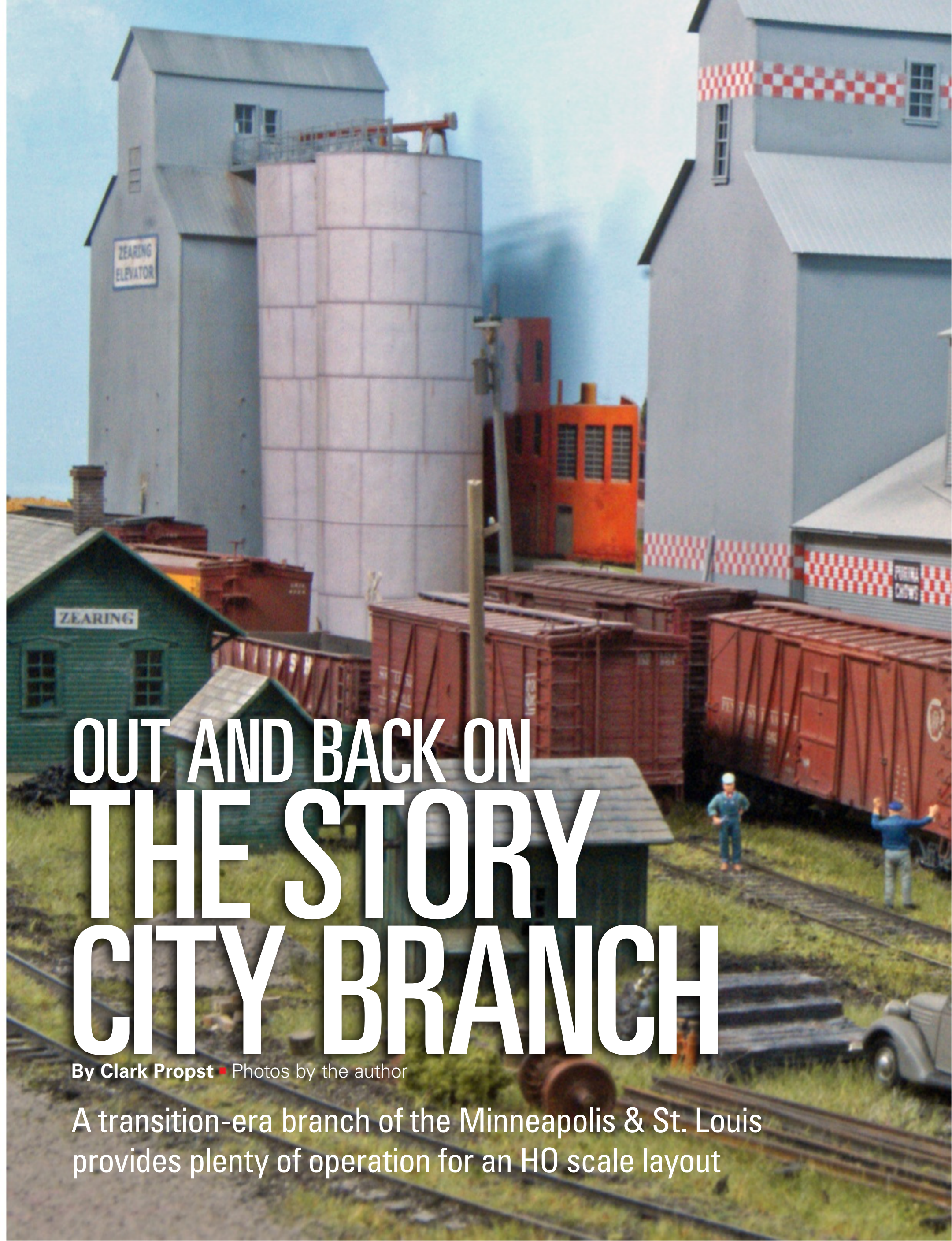
If the layouts in this issue of *Great Model Railroads* inspired you, we have more inspiration to offer! Now you can **save 20%** on back issues of this popular annual publication. Choose from a variety of editions, each containing a unique collection of spectacular layouts and fresh ideas.

To save 20%, use coupon code **GMR** at checkout.

To order back issues, visit
KalmbachHobbyStore.com/GMR

Promotional offer available for a limited time. Coupon code GMR cannot be combined with any other offers and excludes magazine subscriptions. Not valid on prior purchases. Offer excludes the current issue of *Great Model Railroads*.





OUT AND BACK ON THE STORY CITY BRANCH

By Clark Propst • Photos by the author

A transition-era branch of the Minneapolis & St. Louis provides plenty of operation for an HO scale layout

1 Minneapolis & St. Louis 2-6-0 Mogul no. 316 switches the grain elevator complex at Zearing, Iowa, on Clark Propst's HO scale Minneapolis & St. Louis Story City Branch. As is the case on many prairie roads, grain traffic is the lifeblood of the railroad.





2 Alco RS-1 no. 944, a carryover from Clark's previous M&StL layout, rounds the bend at the end of the layout's central peninsula. Clark placed his three towns on long straightaways, using the connecting curves as scenic breaks between them.

WHEN I WAS PLANNING my previous HO scale Minneapolis & St. Louis layout (a process I documented in my article in *Great Model Railroads* 2016), like many modelers I had a vision of grandeur, wanting to model a 100-mile stretch of main line. Reality soon set in, and the vision was narrowed to something that would fit the space: one town.

I promoted the "one-town concept" at Railroad Prototype Modelers (RPM) gatherings as often as I could. The layout was fun to research, build, and operate with friends. I was happy with it.

My interest in the Story City branch line was spiked by an article by Bill Armstrong in the Chicago & North Western Historical Society's *North Western Lines* magazine. I was intrigued by the track layout at Roland, Iowa.

Later, I had the opportunity to operate a couple of times on Charlie Duckworth's Bagnel Branch. It was an out-and-back layout, and I loved it. So when we downsized to our present home,

I wanted to build an out-and-back branch line layout myself.

IMPORTANT QUESTIONS

At first, I focused on a different branch in northern Iowa, but settled on the Story City line mainly because of Roland. There are several farming communities on this long-abandoned line, so I had plenty of choices of towns to model. Roland was a given. Doing a little research showed the line was truncated at Roland on Dec. 31, 1952. The *North Western Lines* article had a partial track diagram of Story City, so I wanted to model that place, too. I lastly chose Zearing simply because of the number of possible customers there.

There were some questions I needed to answer before cutting lumber for benchwork. Who's the layout for? Will the layout be intended to be operated by a large group, a small group, or just me and maybe a friend? A lot depends on the space available.

THE LAYOUT AT A GLANCE

NAME: Minneapolis & St. Louis Story City branch

SCALE: HO (1:87.1)

SIZE: 13 x 20 feet

PROTOTYPE: Minneapolis & St. Louis

LOCALE: central Iowa

ERA: Autumn 1949 to 1951

STYLE: linear walk-in

MAINLINE RUN: 70 feet

MINIMUM RADIUS: 28"

MINIMUM TURNOUT: no. 5

MAXIMUM GRADE: none

BENCHWORK: L-girder and open-grid

HEIGHT: 54"

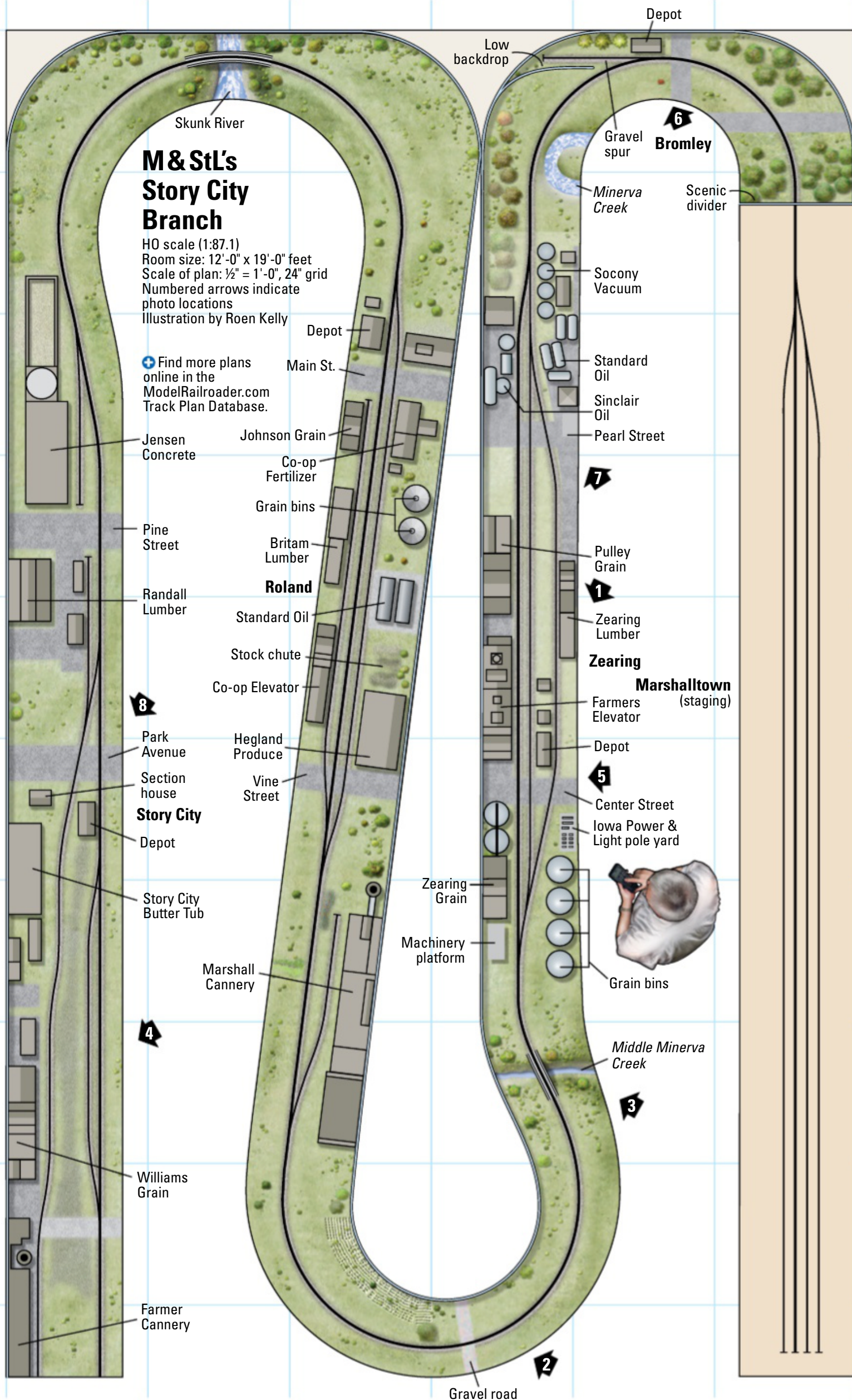
ROADBED: Cascade Rail Supply milled Homasote

TRACK: code 55

SCENERY: extruded-foam insulation board

BACKDROP: photos on tempered hardboard

CONTROL: Digitrax Digital Command Control





3 Number 316 trundles across the scratchbuilt wood-pile trestle at Minerva Creek. The locomotive is a customized Bachmann model.

What era? What time of year? I answered the first question when I chose the branch line. The year was flexible, but before Story City was cut off. Time of year was most important. My studies show me that in the corn belt, fall was the busiest time of year. Considering the customers served, the time period would be the end of September to the beginning of October. That was easy. For an in-depth look at my logic, see my article in *Model Railroad Planning 2018*.

The layout is an E design. Story City is the bottom of the E, Roland and Zearing are back-to-back on the peninsula forming the center, and staging (Marshalltown, Iowa) is at the top. The reason my thinking starts at the end of the line is because that's the way the layout was built, in stages. My plan was to start at Story City and work eastward to Marshalltown. I considered building staging first and moving it as the layout grew; my original idea was to make the towns replaceable by sliding them on and off the benchwork. But I cast that idea aside.

Once Story City was in place, I built the curve that turned onto the center

peninsula. That curve served as staging for operating Story City. After Roland was added, the curve at the end of the peninsula was a place to store the train to run through Roland to Story City and back. After I tripped and fell over my wood pile in the garage, I decided it was time to build the benchwork for the rest of the layout, clearing the garage of all extra lumber.

BUILDING A FLEET

Time to talk more about the questions I asked earlier. Customers on the line are what you'd find in a typical granger community. In my studies, I came up with a list of customers typical to these rural hamlets. Each town could have all, some, or multiples of a few. Most prominent was the grain elevator. There could also be a lumberyard, coal dealer, oil dealer, feed mill, machinery platform, team track, and/or stockyard.

As time passed, farming methods changed and trucking made inroads. Today's customer list would likely only include the elevator and a fertilizer dealer – if the branch line even still existed.

I chose to model prior to the Story City truncation, so all the customers could be rail-served.

Photos of locomotives taken on the branch during steam days show 2-6-0 Moguls and 4-6-0 Ten-Wheelers. I had some Alco RS-1s from my previous layout to use. Photos show them on the branch in later years. In between, they ran a General Electric 44-tonner. I don't care much for that particular engine, but painted one anyway. Running diesels meant I could model the last year of the entire line, 1951.

Then my generous friend Barry Karlberg gave me a Bachmann Mogul, a nice running little engine. Now I had to give it the appearance of an M&StL steamer and backdate my year to the end of steam. Not knowing exactly when that was for this line, I'm saying my time is set in the late 1940s. I've since added another 2-6-0 and a Ten-Wheeler to my roster. I have to stop this madness! Marshalltown has four staging tracks, so I only need four engines, right?

I'm more of a freight car guy. I enjoy building resin kits. I prefer highly

detailed cars. My last layout featured a packing house and cement plants. I had a fleet of reefers and tank cars for the packing house and covered hoppers for the cement plants. Checking out the customers on this branch line, I had no need for any of those models. Instead I needed produce reefers to carry canned corn away from two canneries and tank cars for five oil dealers. I'm not one who enjoys repetition, so I've chosen to model a variety of reefers and just one or two company owned/leased tank cars for each company.

I had a few coal hoppers for the packing house on my last layout and could still use a few on this line, but most coal was delivered in gondolas to the elevator or lumberyard-owned coal sheds. Boxcars make up the majority of the fleet. While I do have a percentage of home-road boxcars, most of the cars are from foreign roads. In my era, car service rules were followed when applicable, but cars from afar were common in corn-belt land.

STRUCTURES AND STANDARDS

I'd like to talk a bit about layout standards. Modelers tend to spend more time on their favorite aspect of the hobby rather than balancing their efforts across all aspects. This can lead to an imbalance, such as superdetailed locomotives pulling \$5 boxcars on top-notch track with no scenery. I think a layout needs balance, or a standard. I don't mean not going all-out on some things, but rather, bring everything else up a notch to better match your best work.

I dislike laying track. Since I'm modeling a branch line, I can use lightweight code 55 Micro Engineering flextrack with Fast Tracks turnouts that I buy already assembled. Painting the rail and ties, then burying the track in cinders and dirt with a topping of static grass, is fast and goes a long way toward matching my scratchbuilt structures and resin freight cars.

In other words, don't draw attention to what you're not proud of; keep the viewer's eye on what you are. Keep in mind this standard is probably going to have a lower bar on a large layout and may take longer to develop.

One of the most convincing ways to replicate a prototype faithfully is with

Compressed waybills



Rather than routing cars with four-position waybills, Clark uses single-destination waybills so his cars' routing doesn't become predictable.

THE PREDICTABILITY OF the four-position waybill system is compounded on a branch line like mine, since there are no through cars. All cars are "shorts," destined for delivery on the layout. Cars ping-pong on and off the layout to and from the same destinations. To avoid that, I have compressed much of the information from an actual waybill to fit into a small plastic sleeve. I put a slip of paper with the car initials and number at the top, with a stripe the color of the car bearing a brief car description, in the sleeve. The waybills, printed on heavy paper, fit the remaining space below the car information stripe. When I make up a train, I place at least two waybills in each car's sleeve. The top bill shows where the car is to be delivered. After the car is spotted, this bill is removed, revealing the second bill. That will tell the crew of the next session where the car goes upon pickup. By having only one destination per waybill, rather than four, I can vary each car's route however I want.

Now that the layout is operated regularly, I've done some tweaking to my system. For most cars other than boxcars, I've printed "Return home when empty" on the car card to eliminate the last waybill. For grain boxcars, I've printed XGB, which stands for "Empty grain box," on the card. This frees it for delivery wherever an empty is needed. Instead of getting a sleeve for every empty boxcar, trains are issued a single sleeve with a slip that tells the conductor how many empties are to be dropped at each elevator on the branch. This is more prototypical than forcing the crew to spot a specific car. — *Clark Propst*

scratchbuilt structures. Kits fill an important need in the hobby, but if it's a plastic kit or an expensive craftsman kit, it's disappointing to visit a layout and be able to pick out each of the structures by name. They need some modification to make them unique.

I'm envious of those who are able to kitbash plastic building kits into something resembling a prototype building. Those who are into prototype modeling say that research is a large part of the fun. I spent a lot of time researching the

customers on my last layout, but I didn't want to go through that again. I was lucky enough to get the information I needed from the local historical societies, libraries, online, or from friends and acquaintances.

We never seem to have enough photos or measurements. Most of the buildings I'm modeling have been gone for decades. Sometimes a glimpse in a photo background is all we have. My approach to making a convincing replica is to try to capture the look of the building. Milled



4 While the rest of the train waits on the runaround track, the local spots a grain boxcar for loading at Williams Grain Co. in Story City. Clark uses lightweight code 55 track and plants static grass weeds between the rails to evoke the feel of a little-maintained branch line.

styrene and quality doors and windows make short work of building construction.

SCENERY

With my layout in mind, *Model Railroad Planning* editor Tony Koester wrote, “If you’re primarily a scenery and structures person, then maybe something like this — essentially a diorama with some movement — might be just the ticket.” I’ll admit to being a scenery guy; I get great joy from trying to capture the feel of the environment the tracks run through.

Years ago, Jim Six had a Yahoo group focusing on a layout he was constructing. The methods he and his buddy Tom Johnson used, most notably static grass and photo backdrops, took scenery to a new level. When Jason Klocke asked for help building his layout, we used many of their approaches. Jason ran with their scenery techniques raising the bar even

further. Having watched Jason lay scenery, I had a better understanding of how to push the envelope.

Scenery is like your fingerprint. Each modeler’s scenery will have characteristics unique to that modeler. We can all use the same locomotives, rolling stock, buildings and track, but the scenery sets us apart from one another.

I spent a great deal of time on each of my towns, using actual track arrangements, matching my structures to the real buildings, and proportioning it all to fit the space. Those three towns are joined by curves, two at the ends of the aisles and one at the end of the peninsula. I wanted each of those scenes to convey the terrain in that area and have a focal point to draw in the viewer.

The east end of the branch runs along Minerva Creek, rough country for Iowa, with undulating, wooded ground on either side. East of Zearing, the land

flattens out, but with enough ripples that the railroad runs on fills and through cuts, one after the other. West of Zearing to Story City, the land is much smoother. My first curve from staging represents the Minerva Creek valley, with hills and woods with a winding road climbing a hill as an eye-catcher. The curve at the end of the peninsula separating Zearing and Roland is a series of cuts and fills. This time, I tried my hand at a cornfield to grab attention. The last curve into Story City has the trestle over the Skunk River as the focal point.

OPERATIONAL CONSIDERATIONS

One of the worries model railroad builders have is whether their plan will hold their interest in the years to come. I’ve sprinkled in a few embellishments to give me a greater variety of rolling stock and switching while staying under the prototype umbrella.

The out-and-back operation is what piqued my interest, Roland in particular. A westbound train coming into Roland had to negotiate two facing-point turn-outs to stub-ended spurs that served most of the customers. There was also a double-ended siding. A Bill Armstrong photo showed the crew working the town on their eastward, homebound run. It's assumed that the Roland cars were dropped on the siding there and spotted on the return trip because there wasn't enough track length at Story City.

Zearing had two sidings. The two Armstrong photos I have show a westbound train on the main and its engine doing switching eastbound. My railroad buddies all say they tried to do the work on the way out so they could make a dash home. Because of the track arrangement, this branch appears to have been worked just the opposite way.

Copying the prototype takes discipline. I happily shackled myself on my last endeavor. This time, I wanted to be a bit looser. Story City is a tale of two 16" x 8'-0" bases. I'll call these the west end (left) and east end (right). The Armstrong article had a drawing for the

west end because that was all that was included in the town's Sanborn map.

I obtained railroad station maps from the M&StL Authorization For Expenditures collection, courtesy of Gene Green, showing the entire track arrangement in town. I held my discipline on the west end, modeling it as closely as possible, but did some serious embellishing on the east end. I expanded a concrete products plant and built a lumberyard on an empty lot. Both are served by spurs that were intended for other purposes and removed long before the time I model. By adding these two customers, I was able expand operations and car types being delivered.

My changes at Roland were more subtle, with a couple more "what ifs." I changed an old elevator into the Co-op Fertilizer dealer because the real fertilizer dealer wasn't built until later. I also moved a stock chute after I found out where it actually was – again, making changes to increase freight car types and enhance operations.

At Zearing, I only changed the annex at one of the elevators. I also used the mill part of the elevator from my last layout as the feed mill for Pulley Grain. In

real life, Pulley owned two elevators; now he owns just one. The other one and the feed mill are owned by Farmers Elevator.

I've always admired the plate-steel grain bins used to supplement storage at elevators. I asked Clever Models if they could come up with a print for them, and they did, so I replaced the crib-style annex at Zearing Grain with two silos. I built a crib annex at Roland and didn't really want to do another.

The employee timetable has a mixed train running out and back twice a week. According to the Armstrong article, this scheduled train was annulled and ran as an extra. This allowed the railroad to not have an assigned crew but rather call a crew off the extra board.

RUNNING THE LAYOUT

Layout operations are quite simple, yet interesting. Drop cars at Zearing and Roland, press on to Story City, then work Zearing and Roland on the return trip.

Before you can have operations, you need some way of controlling car movements. One method is with switch lists, which tell conductors where each car in its train is to be routed. On my last



5 Hardware store workers take possession of a new stove just delivered as a less-than-carload lot (LCL) to Zearing Depot. Rural towns like those on the Story City Branch relied on LCL deliveries for much of their consumer goods.



6 Little more than a whistle stop, Bromley is the site of a spur to an unmodeled gravel pit. The sneak-off spur leads behind a low backdrop.



7 Alco RS-1 no. 949 pulls is train past the Standard Oil and Sinclair Oil dealers in Zearing. Oil dealers are typical industries in small farming communities.



layout, I used switch lists simulating a five-day week. In other words, Friday's session was followed by a do-over of Monday's. Avoiding such repetition would require new switch lists for every session – a lot of work.

Another method is with car cards and waybills. The layouts I operate on regularly use four-position waybills. When the car is spotted, the operator either turns the card over or flips it end-for-end to reveal where the car is to go next. This also suffers from repetition. I avoid this unrealistic monotony by using single-destination waybills, derived from those used on the prototype. [See "Compressed waybills" on page 13. – *Ed.*]

I have storage shelves behind my staging tracks. Cars are rotated from these shelves to the staging tracks randomly. I try to use a variety of car types in my trains. The appropriate car cards in their plastic sleeves are placed either under or behind the cars on the shelves.

Even though the layout appears finished, there are projects I have planned, and I'm sure others will pop into my head. So with luck, the layout will continue to offer creative satisfaction for a long time. **GMR**

MEET CLARK PROPST

LIKE MANY MODEL RAILROADERS,

Clark was introduced to the hobby by watching his father play with his Christmas present, a Lionel train set. A few years later, Clark's views changed when the gift of an Athearn HO scale train set taught him the value of scale models. Clark has been active in modeling most of his life, getting serious about prototype modeling in the mid-'90s. He's enjoyed the satisfaction that comes from it ever since. Clark is a retired industrial electrician who enjoys taking fishing trips with his wife, Eileen, as a break from modeling.



8 Mogul no. 316 shoves cars bound for Farmer Cannery and Williams Grain down the house track at Story City. The photo backdrop, blended into the foreground road, extends the visual depth of the narrow shelf.

BIG MOUNTAIN SMALL SPACE

From Colorado Springs to the Rockies, this H0 layout captures the D&RGW in 13 x 18 feet

By Lou Sassi ■ Photos by the author





TAINS

1 The northbound *California Zephyr* makes a stop at Colorado Springs on its trip to Denver on David Powell's HO scale Denver & Rio Grande Western layout. The station is a kitbashed Kibri structure; the Electro-Motive Division F7A in the lead is a Proto 2000 model.



DAVID POWELL DISCOVERED MODEL RAILROADING when, at the age of 8, he found his father's HO scale Rivarossi Mallet in a basement closet of his family's home. By the time his dad returned from work that evening, Dave had wired an oval of track and was running the engine. In Dave's words, that incident "stoked fires of model railroading in me" that burn to this day.

Since that first introduction, he has built several model railroads, each of which became more and more detailed as he gained experience and knowledge from other modelers. Then, on a 2004 family vacation to Denver, he met Doug Tagsold, who was doing research for his own HO scale Denver & Rio Grande Western RR layout. Operating Doug's railroad motivated him to model his own standard gauge version of the D&RGW as it existed in the 1950s and '60s. Some of the rolling stock, locomotives, and digital backdrops on Dave's layout came from Doug's.

BUILDING THE D&RGW

Construction on Dave's model railroad began in October 2004, following a track plan that was a collaboration

between Dave and professional layout designer Lance Mindheim. After painting the walls of a former bedroom sky blue, he added track lighting to highlight certain features of the layout along with room lighting.

Dave covered the windows on one wall with tempered hardboard backdrop panels attached to the benchwork, then painted them to match the interior walls' sky blue. Next, he had a local shop print digital photos of the Rocky Mountains in a matte finish onto self-adhesive sheets (essentially the same technique used to make auto pinstriping tape). He adhered these to the hardboard panels and walls.

The benchwork modules were built by Lance's The Shelf Layouts Co. from cabinet-grade pine with a frame design of open-grid and L-girder construction. The subroadbed is $\frac{3}{4}$ " birch plywood. Track was laid using Peco code 100 flex-track and Peco Insulfrog turnouts.

Basic landforms were constructed with either Hydrocal or plaster cloth over screening. Mountains were made from a 50:50 mix of play sand and plaster of paris, which was either covered with additional ground cover or carved

2 This overall view of the layout shows the Salida roundhouse in the foreground and Byers Canyon at center, behind the lift-out bridge.

THE LAYOUT AT A GLANCE

NAME: Denver & Rio Grande Western

SCALE: HO scale (1:87.1)

SIZE: 13'-0" x 18'-6"

PROTOTYPE: Denver & Rio Grande Western

LOCALE: Colorado

ERA: late 1950s to early 1960s

STYLE: walk-in

MAINLINE RUN: 65 feet

MINIMUM RADIUS: 27 $\frac{3}{8}$ "

MINIMUM TURNOUT: Peco large radius

MAXIMUM GRADE: 2.5 percent

BENCHWORK: open grid and L-girder

HEIGHT: 40-43"

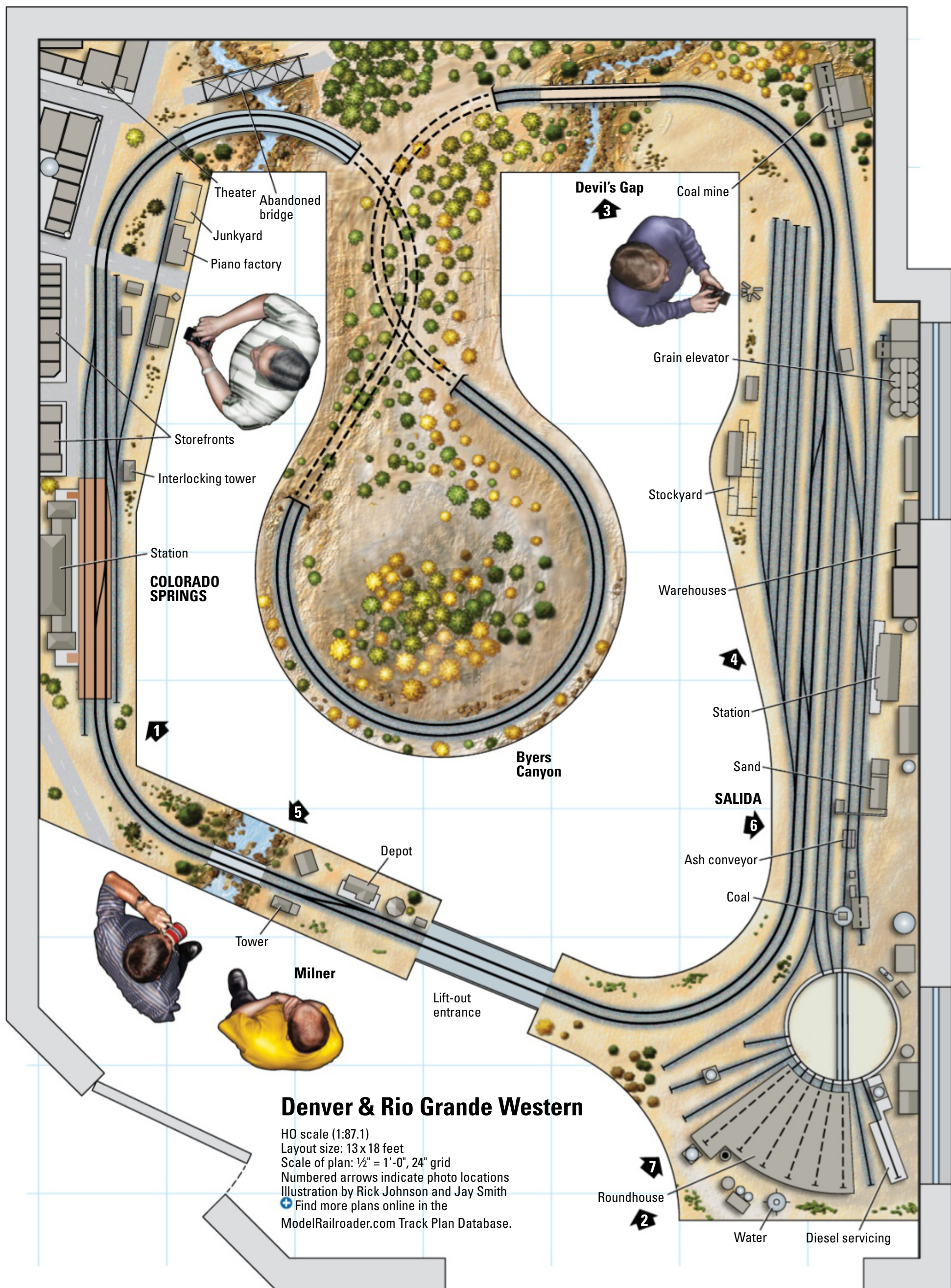
ROADBED: Cork

TRACK: Peco code 100 flextrack

SCENERY: Hydrocal or plaster cloth on screen

BACKDROP: photos mounted on wall or tempered hardboard

CONTROL: CVP Products Digital Command Control





3 Dave sculpts his exposed rockwork by applying a plaster-sand mix to the mountainside and carving it as it cures.

Sculpting mountain rocks

I MAKE THE EXPOSED ROCKS on my mountainsides from a 50:50 ratio of plaster of paris for strength and play sand for texture. After mixing in enough water to achieve the consistency of cake frosting, I apply it to the base terrain. The mixture sets up quickly, so I work in small areas of about 1 square foot at a time. I then start to carve striations in the rock, making my cuts parallel to the ground. If any crumbs fall off the knife, I leave them where they fall at the base of the rock to represent talus.

Once the rockwork hardens, I color it using a diluted wash of orange water-based paint. I brush this over the entire rock, including any fallen bits. Once the paint dries, I enhance the shadows with walnut stain. This seems like it would be too dark, but the trick is to not mix the stain at all. Instead, I just dip the paintbrush in the thin top layer in the can, without stirring up the pigment that's settled to the bottom. I then lightly brush the rockwork, letting the stain settle into the cracks and crevices. — *David Powell*



to represent exposed rock faces. [See “Sculpting mountain rocks” at left. – *Ed.*] Noch static grass was used to model prairie grass. Ground foam, flock, grass blends, and real dirt were applied over a base coat of earth-colored latex paint.

Trees, such as the numerous aspens on the layout, were constructed from Scenic Express SuperTree armatures with foliage from Woodland Scenics and Noch. Evergreens are from Noch, Busch, Heki, and Grand Central Gems. Some other evergreens were handmade from test-tube brushes that were painted and flocked. Ballast is from Arizona Rock & Mineral, as are all the rock riverbeds. Water is modeled using Magic Water from Unreal Details.



4 Challenger no. 3804 is headed west though Salida with a general manifest in tow, bound for Leadville on the Royal Gorge Route. The 4-6-6-4 is an Athearn Genesis model. The signals are from Tomar and the grain elevator is a modified Walthers kit.

5 Behind D&RGW Alco PA-1 no. 6013, the *Yampa Valley Mail* crosses Eagle River. The backdrop is made of photos printed on self-adhesive sheets and applied to blue-painted walls.

6 Denver & Rio Grande Western 2-6-6-2 Mallet no. 3503 passes the coaling tower at Salida Yard. The tower is a Walthers kit, as are the sand house, ash pit, and ash tower.



DETAILED STRUCTURES

Most of the structures on the railroad were built or kitbashed from styrene kits by Walthers and Busch. There are also a number of Fine Scale Miniatures buildings on the railroad. Dave's friend Howard Clark built, painted, and weathered the exteriors of the majority of them, while Dave installed interior lighting and details.

Many of the buildings in town have animated billboards and signs along with interior or exterior lighting effects. The gas station has several lights and an arc welder working on a car on a hydraulic lift.

Dave feels that structures in the foreground should be more detailed than the "filler" buildings in the background. He says there's no reason to put a detailed interior in a structure that no one can see into. Exterior details and weathering are also important for added realism on all structures. Pigeon droppings on rooftops, rust-stained piping, and other weathering effects add to the realism of a railroad.

The passenger station has a special interest, as it lets him model the passenger service of his era. It's a significant

structure not only because of its size, but also because of the details around it. From the redcaps, porters, first-class passengers, and soldiers returning from the Korean War waiting on the platform to the automobiles of the era in the parking lot across the tracks, all command attention.

The "Palace" movie theater in Colorado Springs is notable because it reflects the neo-Deco design of the time.

The roundhouse has interior lighting made from a string of dimmed Christmas tree lights. This proves it pays

MORE ON THE WEB

Readers can watch exclusive video of trains running on Dave Powell's HO scale layout at ModelRailroader.com



to go to craft stores with one's wife now and then, Dave says. The roundhouse also attracts attention because of details that add interest to the railroad. Here you'll find an operating arc welder working on the pilot of a locomotive, cats resting on barrels, workers busy at lathes, and a group of workers meeting with a shop foreman in an out-of-way corner of the building.

CONTROL AND OPERATION

Trains are controlled by CVP Products Digital Command Control (DCC). There are four cabs, two handheld wireless and two hardwired.



With the exception of one hand-lined switch at the wye in the yard, turnouts are controlled by Tortoise by Circuitron switch motors. Dave plans to eventually install either Tomar or BLMA (now Atlas) dual-head searchlight signals, which are prototypical for the D&RGW.

The prototype Rio Grande ran a variety of trains ranging from unit coal trains to passenger service. One train Dave enjoys replicating is the *California Zephyr*, with its Aspen Gold Electro-Motive Division F units in the lead, epitomizing the pride of the Rio Grande in the 1950s and '60s.

Even though the prototype didn't do so, Dave operates a double-track main line. This allows him to run coal trains concurrently with passenger trains in a smaller space. There are also two yards that can be operated simultaneously with the mainline trains.

PLANNING FOR SUCCESS

From the town scene in Colorado Springs with its busy streets and lighting effects, to the yard in Salida, to the majestic mountain scenery with its steep track grades and tunnels, Dave says his model railroad reminds him of the beauty of the Rocky Mountains and Colorado's other spectacular scenery.

Though all those features aren't often combined on smaller model railroads,

7 With the roof partially removed, the roundhouse's interior details can be seen. Dave lighted the interior with a string of white Christmas tree lights he found at a craft store.

Dave has done so without overcrowding the scenes. He's learned that it's important to have a plan for scenery before beginning a layout, and to seek out help from more knowledgeable modelers when needed.

Not everyone can be a master of every skill, so don't be too proud to admit when your skills are lacking, Dave advises. The end product is much more satisfying when everything is done right by the right talent, he says. **GMR**

MEET DAVID POWELL

DAVID POWELL has been a model railroader for 40 years. He's an oncologist who has decorated his medical office with a railroad motif. He lives in Lima, Ohio, with his wife, Jean.



1 A Pennsylvania RR class H10 Consolidation arrives to switch the Jefferson PRR freight house on Lee Gasparik's O scale Pennsylvania & New York Central. The 43 x 70-foot layout is run by radio control with onboard battery power.



LOOK, MA, NO WIRES

This 43 x 70-foot O scale empire
runs on battery power, radio control

By Lee Gasparik • Photos by Paul Kahne





THE LAYOUT AT A GLANCE

NAME: Pennsylvania & New York Central
SCALE: O (1:48)
SIZE: 43 x 70 feet
PROTOTYPE: Pennsylvania RR and New York Central
LOCALE: Northeastern U.S.
PERIOD: 1950s
STYLE: linear walkaround
MAINLINE RUN: 734 feet
MINIMUM RADIUS: 76" (main), 60" (yard)
MINIMUM TURNOUT: no. 8 (main), no. 6 (yards)
MAXIMUM GRADE: 1.5 percent
BENCHWORK: cantilevered open grid along walls; L-girder on peninsula
HEIGHT: 48" to 58"
ROADBED: 1/4" anti-fatigue mat
TRACK: Atlas code 148 flextrack
SCENERY: extruded-foam insulation board
BACKDROP: painted on walls
CONTROL: onboard battery power with radio control

2 A New York Central mixed freight, pulled by an NYC class A-2 2-8-4 Berkshire, passes Davenhar Heavy Repair and approaches the city of Ellison. The locomotive is an Overland Models brass import.

OTHER THAN THE FACT that my layout is a realistic two-rail O scale model railroad, the most notable thing about it is the lack of wires. My trains run on onboard battery power, and I operate them by radio control. People who come to my home, especially experienced model railroaders, look under my benchwork and are amazed to see no wires. They're impressed that a railroad this size can operate so well strictly with an onboard battery system.

But that wasn't always the case. Like so many others, I became a model railroader as a child at Christmastime. I received two sets of American Flyer toy trains, a New York Central 4-6-4 Hudson with a freight car set and a Pennsylvania RR class K4 Pacific with three passenger cars.

Several years later, I purchased a book written by Frank Ellison titled *Frank Ellison on Model Railroads* (Arco Publishing Co., 1954). That book became the foundation of my modeling. Ellison's talent for writing and his great modeling skills and eye for realism motivated me to try to capture the essence of prototype railroading.

I first built a small test layout with no scenery, just one loop of track.

STARTING CONSTRUCTION

We moved into our new home in July 2004. The house is a large Cape Cod. The basement is 3,010 square feet, 43 x 70 feet. In 2005, I started to finish the basement. I wanted to make the basement a finished and comfortable place. I met Roger Snyder, an excellent carpenter, who also became a good friend through our many hours of working together on finishing the basement and the benchwork. My father was a builder, and I spent many summers on building sites while growing up, so I have some experience in construction.

The basement wasn't finished, so we started from scratch. We insulated the walls and drywalled everything. We also hung a drop ceiling, installed 50 fluorescent fixtures, and painted the walls sky blue. All the trim is oak.

I wanted to have wide aisles. People's comfort and the ease of operation is worth the space. My aisles range from 4 to 11 feet wide. My turnouts are hand-lined, so reach-in access is important.

The benchwork is L-girder. I used poplar for the construction, as I wanted a finished furniture look for the benchwork. I used 2" extruded-foam insulation board as the subroadbed.

For roadbed, I used 1/4" anti-fatigue mat. I saw this mat at a Lowe's home store and ordered a large roll from the manufacturer. I had it cut to the proper width and beveled the sides. The mat deadens sound and was easy to work with.

My track plan was intended to create the feel of Class 1 railroads in the Northeast in 1954. The railroads I like best are the Pennsylvania RR and the New York Central RR. They ran close to each other and in some cases shared trackage. They also shared several union stations.

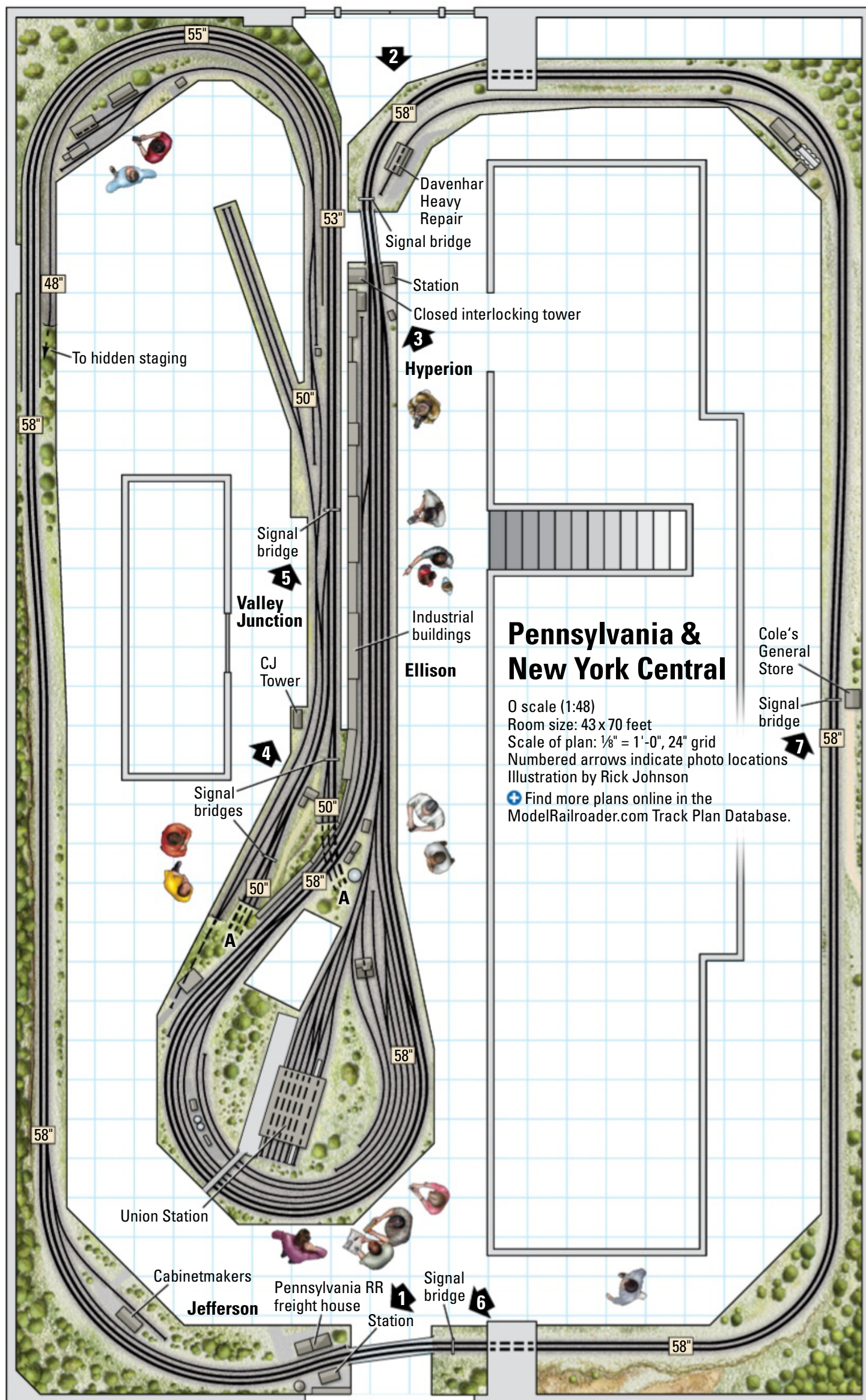
The operational purpose of the railroad is to move heavy freight, service industries, and carry passengers.

I run a mix of bridge traffic, unit trains, and local freights. I plan to develop a more sophisticated and realistic operation in the near future.

All my engines and rolling stock are from 1954 and earlier. They capture the character of the railroad in that time frame. My railroad is designed to create a feeling of being back in the 1950s. I weather my rolling stock with chalks.

CUTTING THE CORDS

I started working with onboard battery power in 2002 at my former Long Island home. When I lived there, the





4 Pennsylvania RR H10 Consolidation no. 1132 pulls a manifest freight past CJ Tower in Valley Junction. The locomotive is a Key Imports brass model, remotored, weathered, and converted to battery power and radio control.

summers were troublesome due to the high humidity. Moisture would collect on the track and inhibit electrical contact, hindering the performance of the locomotives. I'd clean and wipe the track, but just 10 to 15 minutes later, the problem would return.

A close friend of mine, Barry Zeigler, has a beautiful G scale outdoor railroad. I was at his house one summer day and was impressed at how well his trains ran. Barry gave me one of his G scale magazines and said maybe I could find the solution to my electrical issues inside. I read the magazine and saw ads for on-board battery systems.

I called Don Sweet, the East Coast rep for Radio Control Systems of New England, and explained what I was trying to do. Don said it was possible that they could make systems that would fit into O scale equipment. A few days later, I drove to Don's house in New Hampshire.



3 With a mail-and-express train in tow, a PRR class E6 Atlantic passes Hyperion station on its way to Union Station. The interlocking has been upgraded to remote activation, so the tower is out of service.

I brought two O scale Electro-Motive Division F7s with me, and Don told me he would send the locomotives back to me in a couple weeks after receiving and installing the new battery systems.

When the locomotives arrived, I put them on the tracks and pushed the “Forward” button on the handheld controller, and they responded immediately.

I ran them for hours and knew this was what I wanted – the perfect solution to a never-ending problem with track power. Now all my motive power is powered by onboard batteries. The original system I bought in June 2001 is still running perfectly.

Building signal bridges



5 Lee kitbashed his signal bridges from Bachmann superstructures, Precision Scale targets, and custom-made lenses.

I WANTED SIGNAL BRIDGES on my railroad, as they enhance the realism. I felt the commercial signal heads that were available in O scale lacked detail and were too thick, so I made my own. I researched Pennsylvania RR position-light signals and found Bachmann’s bridges to be close to accurate. I found the ones I needed on eBay. For the targets, I used Precision Scale round end trim kits.

First, I file and lightly sand all seams to remove flash and parting lines, then wash the parts in soapy water and let them dry. I then construct the bridge as per the instructions, adding scratchbuilt Pennsy-style knee braces. I spray the bridges with Rust-Oleum Camouflage 2X Black and set it aside to dry.

Meanwhile, I assemble and paint the round end trim targets. My friend Richard Arnold, a master machinist, made custom lenses to fit the bezel. I attach the signal heads to the bridge, then mount the bridge on scratchbuilt concrete pillow blocks. Finally, I weather the bridge with powdered chalks.

– Lee Gasparik

Over the years, the systems have become much smaller and more efficient. The batteries are smaller and most are lithium polymer (LiPo). The systems operate on between 14 and 18.5 V. All have handheld controllers. The systems fit easily into an O scale Alco RS-3. Steam engines have more than enough space in the tenders.

Robert Buck of G-Scale Installations in York, Pa., installs my battery control systems. He recommends the Ring Engineering Rail Pro system.

Run times vary depending on several factors: the mechanical condition of the locomotive, the load it’s pulling, and the grades it encounters. I get from 10 to 15 hours of run time between charges on my engines, and that’s with 20- to 40-car trains and a 1.5 percent grade.

TRACKWORK

I consider the most interesting aspects of my layout to be trackwork, scenery, and locomotive performance. Trackwork is the foundation of realistic



6 A Pennsylvania RR freight approaches the town of Jefferson. Despite the O scale models' large size, the layout has plenty of open space to avoid the feeling of towns and buildings being crowded together.

MEET LEE GASPARIK

LEE SAYS HE'S LOVED TRAINS, both full-sized and scale model, since he was a boy. He's now retired after serving in the U.S. Marine Corps, the New York State Police, and the U.S. Marshals Service. He lives in Wiley Ford, W.Va., with his wife, Sheryl, and their boxer, Sophie. Together, they enjoy working out, biking, traveling, and train-watching.



7 Lee's layout runs diesels, too. The PRR Fairbanks-Morse Train Master and Alco RS-11 road switchers on the point of this manifest freight pass a clear signal. Both locomotives are Car & Locomotive Shop models.

operation on a model railroad. One of my greatest pleasures is laying track and making it look and work like the prototype, incorporating curve easements, superelevation, and realistic color.

I used Atlas code 148 flextrack. The color is what I feel makes it look real. The smaller it looks, the better. I use Grimy Black, Tarnished Black, and Roof Brown paints to weather my track. I mixed the first jar with equal parts of Grimy Black and Tarnished Black, plus a little Roof Brown. When that jar was empty, I mixed the same colors, but at different proportions.

When I was painting the rail, I used thin washes. When that dried, I applied another thin wash. This gave the track a

dark, weathered look. An unintended benefit was the ties also took on a weathered look. The nickel-silver rail took the paint differently than the plastic ties.

Out of all the areas on the layout, I feel the newly finished Valley Junction has the most interesting and complex operational possibilities. It has a branch-line connection and a small switching area with three industries. The branch line leads to 120 feet of hidden staging. The scene also has three tunnels, three Pennsylvania RR signal bridges, and CJ Interlocking Tower.

NORTHEASTERN SCENERY

One of the most important aspects of a model railroad is the scenery. It sets the

mood and defines the location and time of the year. I built my landforms as dioramas on bases of 2" thick extruded-foam insulation board. These dioramas are 18" deep along the walls and 24" on the peninsula. They vary in width from 6 inches to 4 feet. I made each a little different, using a variety of colors and carving different shapes of the foam board. Then I placed them on the layout and blended their edges together.

I built the dioramas in my garage workshop because working there made it easier to achieve the realism I wanted. When I placed them on the layout, if I wasn't satisfied with the way they looked, I simply could take them back to the workbench and redo them.



I used Woodland Scenics ground foams to cover the terrain. I also used materials from Scenic Express, Heki, and Timberline Scenery. I mixed colors and textures in a blender for a realistic look.

To create the Northeast, you need trees, and lots of them. I try to use natural sources. I found a certain type of weed on Long Island that grows in the fall, late October and early November, goes to seed, and produces a fine-leaved look. I don't know what the name of the weed is; I just know it works for me.

When I harvest these weeds, I stand them up on a foam board. Once they dry, I spray them with unscented extra-hold hair spray. They can be stored on the foam board until I'm ready to finish

them with ground foam. In some areas, I've added color to the trees to give a hint of early fall.

These weed trees will last a long time. At least half of mine are 18 to 20 years old. People have asked many times how many I have. When I finally counted them, the total came to 1,261.

When you're building a layout of this size by yourself, there isn't much time to scratchbuild structures. I built some of mine, but most of them I purchased pre-built at train shows and from eBay. Some of my favorite buildings were created by my friend Harry Heike. Now that the layout is about 90 percent finished, I'm looking forward to adding more detail and building more structures.

LESSONS LEARNED

What I've learned from building this layout is you need to have discipline, take your time, and not get off on tangents if you want to get your railroad near completion. A layout is never 100 percent complete. And, like many other model railroaders, I should have allocated much more hidden staging.

My railroad gives me a great deal of satisfaction in being able to create the feeling of two great railroads that helped to build America. I like seeing people when they visit the railroad enjoy the way it looks and operates. Many hours are spent having my model railroad friends visit and operate it, which is very rewarding. **GMR**



A John Armstrong article inspired this huge layout, where PRR and NYC run joint coal trains

By Anthony Daniele ■ Photos by the author

PENNSY'S ELMIRA

"WOULD YOU LIKE TO MIX NYC AND PRR?"

This caption to an illustration in the chapter on prototype-influenced layout designs in John Armstrong's *Creative Model Railroad Design* (Kalmbach Books, 1978) grabbed my attention. At the time, in late 1993, I was in the early stages of planning my first HO scale model railroad.

Armstrong described the "Belle Isle" coal trains jointly operated by the New York Central RR (NYC) and Pennsylvania RR (PRR). The trains ran on the Elmira Branch of PRR's Williamsport Division, from its Southport Yard near Elmira, N.Y., to Himrod Junction. There, they diverted onto NYC's Corning line

to Lyons, then east to NYC's Belle Isle Yard in Syracuse. The pool trains used locomotives, cabooses, and crews from both railroads.

Having grown up in New York City and spent many a day watching both railroads' yard operations with my father, I possessed a natural affinity for the two great eastern rivals. Were I to re-create a portion of this operation, I could prototypically run motive power and coal hoppers from both lines together on the same track. Better still, the joint trains also rode on the Erie RR via trackage rights. The opportunity was too alluring to pass up.

RESEARCH AND PLANNING

Realizing that not even an 1,100-square-foot train room addition to our Long Island vacation home would be big enough to model both systems, I chose to model the Pennsy, with just a portion of the NYC.

I began researching the Elmira Branch, a task tremendously accelerated by the discovery of Bill Caloroso's just-released book *Pennsylvania Railroad's Elmira Branch* (Andover Junction Publications, 1993) on the bookshelf in a local model shop. This thorough, well-written, and amply illustrated volume became my bible, and I followed it as religiously as possible in designing my layout.



1 With help from a pair of New York Central Electro-Motive Division FTA-B diesels, Alco RS-1 no. 8101 leads its train onto NYC Corning Branch with coal loads destined for DeWitt Yard in Syracuse. Coal is a major source of revenue on Anthony Daniele's HO scale Pennsylvania RR Elmira Branch, which hosted joint PRR and NYC coal trains.

BRANCH IN HO

But even more significant was my good fortune to meet *Model Railroader* contributing editor Tony Koester, who not only invited me to see (and later operate) his Allegheny Midland layout, but was instrumental in guiding me during the early design process.

At Tony's suggestion, I purchased United States Geological Survey (USGS) topographical maps of the area and later visited and photographed roughly two-thirds of the territory where the branch once ran. Although the branch had long been abandoned, surviving portions or readily apparent traces of it survived, and the photos were a tremendous aid in creating scenery and building structures.

My focus expanded beyond merely the Belle Isle coal trains to other aspects of the PRR branch. Using CADRail software, I designed the future layout and the train room. In fact, I gave this plan to our architect so he could design the new addition around it. As a result, I ended up with a finished, dedicated train room with no impinging utilities.

THE PROTOTYPE

The Elmira Branch originated in Williamsport, Pa., and ran north (timetable west) some 140 miles to Lake Canandaigua in New York. Except for the short portion that ran on Erie double trackage in Elmira, the line was single-

tracked and controlled by train orders and manual block signals set by tower operators. Each passing siding had a tower from which the operator set signals and lined turnouts according to the instructions of the dispatcher.

The bulk of the traffic was north-bound coal shipments to Sodus Point via a 33-mile spur from Stanley for trans-loading to large lake-going vessels. But there was other merchandise traffic as well, everything from salt to fresh produce from the Finger Lakes area and many local industrial products. Indeed, the branch was more akin to an independent regional railroad than part of a large system.



2 Pennsylvania RR I1sa Decapod no. 4471 pushes on the rear of a NYC-PRR pool coal train as it approaches the PRR combination depot at Horseheads. The helper, a Broadway Limited model, will cut off and turn on the wye at Starkey for its return to Southport.



3 Erie F3A no. 714-A roars past with its manifest freight as Pennsy I1sa Decapod no. 4462 slowly exits PRR's Southport Yard with its coal drag on its way to Sodus Point. The Erie EMD diesels are Life-Like Proto 1000 models.

The locomotives primarily used by the PRR for coal trains after World War II were the 2-10-0 class I1sa Decapods. Unit coal trains that originated in Pennsylvania's central coal fields, such as Bald Eagle, traveled from Williamsport across the New York state line to Southport Yard, south of Elmira, where long cuts of hoppers were reclassified into shorter 70-75 car trains and coupled to fresh locomotives for the rest of the trip north.

During the peak season, up to six unit coal trains a day were dispatched for Sodus Point, all run as extras. Quite a bit

of local traffic originated from Southport, as well. In the 1940s, there were as many as 13 yard and local jobs a day.

Once clearing Southport Yard, PRR traffic joined the Erie at Shannon Interlocking for about five miles. Much of the industry along this stretch was switched by the PRR, including fire truck manufacturer American LaFrance.

The Lehigh Valley RR (LV) also had trackage rights on the Erie, its line branching off just south of Erie's Washington Avenue Yard to Holding Point outside of Horseheads.

Situated at the southern end of Seneca Lake, the largest of central New York's Finger Lakes, Watkins Glen was both a major summer vacation destination and a chief source of PRR freight traffic, thanks to its Sinclair Oil refinery and several salt companies. The depot was right across from the waterfront.

From Watkins Glen, the branch ran north along the western shoreline, eventually diverging and climbing 340 feet over the 15.5 miles from Watkins Glen to Starkey and on to Himrod Junction. Consequently, most coal trains leaving Southport required pushers, which would turn on the wye at Starkey.

But most significant to the operation of the Elmira Branch was its 33-mile spur to Sodus Point. The line terminated at a massive wooden coal trestle jutting into Sodus Bay on the southern shore of Lake Ontario. The trestle had two sets of tracks, one for loads, the other for empties. Six hoppers were pushed from the storage yard tracks, which had a capacity for 1,200 cars, onto the trestle and unloaded three at a time into awaiting vessels. In 1956, nearly 2.5 million tons of coal were transloaded.

THE LAYOUT

My layout is set in 1956, a year before PRR ended steam operations. It's a linear, walkaround design, consisting of two large double-sided peninsulas and around-the-wall construction. Trains are controlled using an NCE Power Pro Digital Command Control (DCC) system with a second booster and nine power districts. Many of the throttles are wireless, though there are a number of ports around the layout for plug-in throttles.

The layout closely mirrors operations on the prototype. Both PRR and Erie trains enter the layout from a concealed three-level staging yard, the PRR from the larger, 10-track middle level (Williamsport, Pa.). A three-turn helix raises Erie traffic from the six-track lower staging (Jersey City, N.J.) up to PRR's level. A four-track upper staging level (Corning, N.Y.) houses NYC trains, which exit from the opposite end.

The visible portion of the layout begins with the single-track PRR crossing Seeley Creek just before Southport Yard. The model has fewer leads, but it nevertheless occupies a lot of space.

THE LAYOUT AT A GLANCE

NAME: PRR Elmira Branch

SCALE: HO (1:87.1)

SIZE: 22 x 45 feet

PROTOTYPE: Pennsylvania RR, Erie RR, New York Central, and Lehigh Valley

LOCALE: upstate New York

ERA: 1956

STYLE: walkaround

MAINLINE RUN: 249 feet (to Canandaigua); 281 feet (to Sodus Yard)

MINIMUM RADIUS: 36", 30" (hidden)

MINIMUM TURNOUT: no. 6

MAXIMUM GRADE: 2 percent

BENCHWORK: sectional open grid

HEIGHT: 36" to 59"

ROADBED: Homabed on ¾" plywood

TRACK: Micro Engineering code 83 (main line) and code 70 (sidings); Atlas code 100 (staging)

SCENERY: extruded-foam insulation board and Sculptamold

BACKDROP: hand painted on walls and tempered hardboard

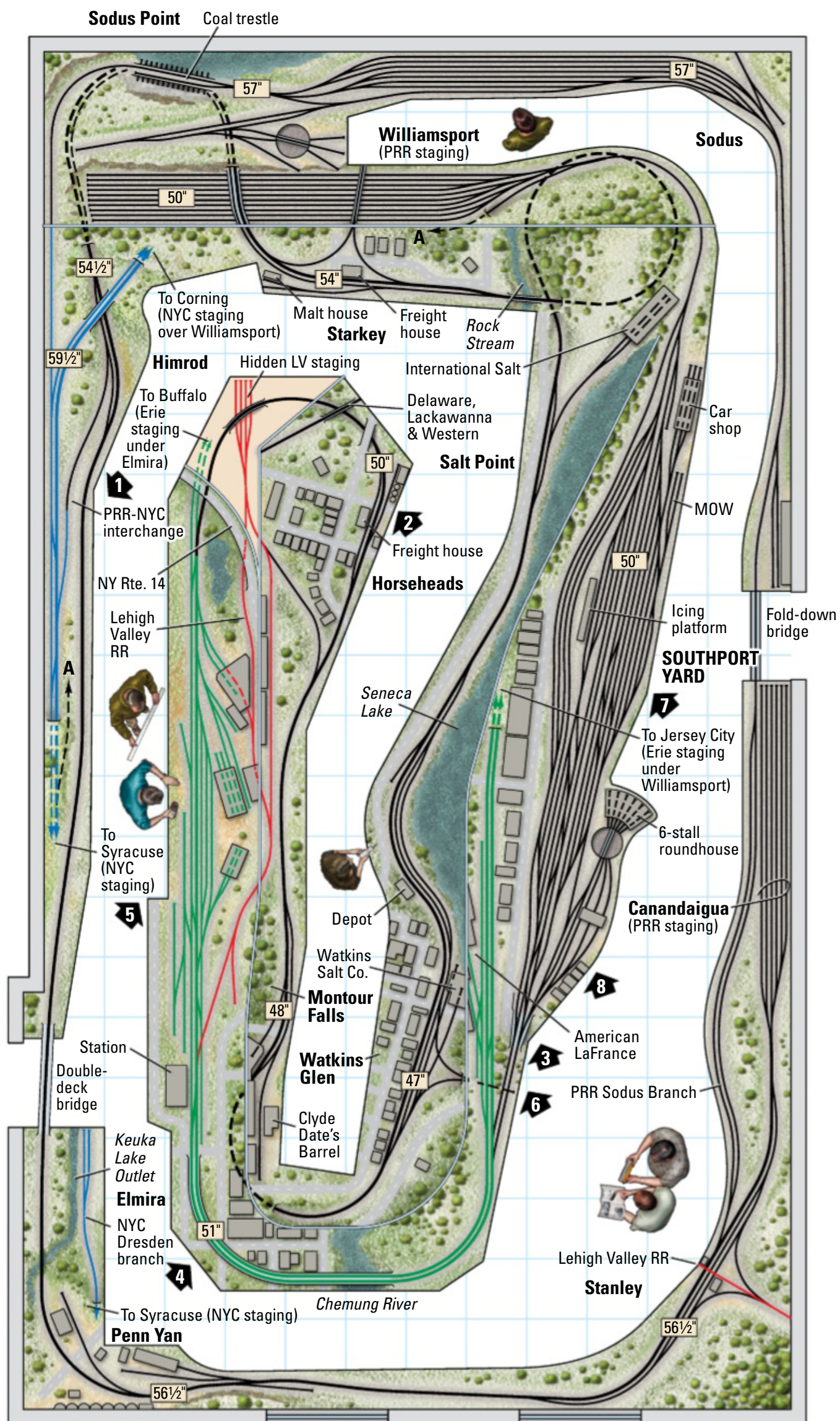
CONTROL: NCE Digital Command Control

All the yard turnouts, like the vast majority on the layout, are controlled by Tortoise by Circuitron switch motors, operated by two control panels. Southport is big enough to accommodate at least two switching crews and a hostler without them bumping into one another.

Two leads extend westward from the yard to Shannon Interlocking and merge onto the Erie, which emerges from staging and runs along the front of the backdrop behind industrial and commercial buildings and past the American LaFrance fire engine factory.

Upon crossing the Chemung River into Elmira, the Erie is elevated through downtown on concrete trestles modeled from painted wooden dowels. The LV branches off the Erie to the northwest just before the Erie depot and traverses in and out of the backdrop, terminating at Holding Point, here a small, hidden, stub-end staging yard.

Erie traffic runs on the layout both from and to separate lower-level staging, representing Jersey City in the east and Buffalo in the west, each with turning loops and capable of holding six trains. In hindsight, this arrangement was more



PRR Elmira Branch

HO scale (1:87.1)

Room size: 22x45 feet

Scale of plan: 3/16" = 1'-0", 24" grid

Numbered arrows indicate photo locations

Illustration by Rick Johnson

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

— Erie
— Lehigh Valley
— New York Central
— Pennsylvania



4 The Pennsylvania RR helper keeps shoving on the rear of the pool coal train as it crosses over West Water Street on the elevated track in Elmira. The prototype's tracks were elevated in 1934. The concrete pillars supporting the roadbed were fashioned from 1/2" wooden dowels. The city buildings are kits from Walthers and City Classics.



5 An Erie merchandise freight led by Electro-Motive Division F3A-B units passes Erie's Washington Avenue Yard on its way to Elmira Heights. American Bridge's fabrication plant looms in the background, and beyond that is Thatcher Glass. Both structures were built from leftover kit parts.

trouble than it was worth, since I hardly ever run Erie trains. This section was designed with autonomous operation in mind, but the likelihood of that ever happening is remote.

Pennsylvania RR traffic leaves the Erie and diverts back onto its single-tracked branch at HO Junction, ducking through the backdrop and appearing on the other side in the town of Horseheads. On the prototype, the Erie curved west to Buffalo at this point; on the layout, it descends the helix to staging.

Horseheads is modeled, as well as a small portion of Holding Point. With modeler's license, it's located behind Horseheads, where it serves as a source for off-line traffic and exchanges some traffic with the LV.

Leaving Horseheads, the line travels through the countryside to Montour Falls, which is represented only by a couple trackside industries, a grade crossing, and a short passing siding.

From Montour Falls, the main line ducks through the backdrop, passes behind Elmira, and emerges at Watkins Glen. The track arrangement here closely follows the prototype. A small portion of the town is modeled along with part of Seneca Lake, which as of this writing still awaits the pouring of Enviro-Tex Lite polymer resin.

The main line passes once more through the backdrop, and after climbing a two-turn helix, emerges onto a towering trestle over Rock Stream and enters Starkey. This village features the wye where helpers are turned. As with the wye in Watkins Glen, the tail track pokes through the backdrop.

The long passing siding circles behind the backdrop and, upon emerging, ends just before the truss bridge where the NYC's double-track Corning Branch crosses over at Himrod Junction. A short ascending connection allows the pool trains to reach the NYC, where after a brief visible run, Syracuse-bound coal trains disappear into staging.

Past Himrod Junction, the PRR continues onto Penn Yann. The high deck girder bridge over the NYC's Dresden branch is modeled, as well as the NYC's terminus along the Keuka Lake outlet.

Stanley, which features the LV interchange, is the last visible destination on the main line, and it is here that the long spur north to Sodus Point branches off while the main line proceeds to Canandaigua, represented by staging.

THE COAL TERMINAL

The Sodus Spur begins with a long 18-foot passing siding and runs along the front wall of the layout room for a total of 34 feet, during which it passes a cannery with a two-track stub siding before entering coal-marshalling Sodus Yard. The tracks unavoidably cross the room's interior entrance, necessitating a 42" spring-loaded span across the doorway. Most times, the bridge is left open, even though the 57" height poses little difficulty ducking under. A simple electrical contact cuts power to isolated sections of tracks at both end when the

An industry far from the aisle



6 American LaFrance, a manufacturer of fire trucks, could be a major source of traffic for the Erie, were it not built so far from the aisle, making uncoupling and rerailling of rolling stock difficult.

I TAKE PARTICULAR PRIDE in modeling the fire truck manufacturer American LaFrance. When I visited Elmira, it was long gone, its site reduced to a vacant, rubble-strewn field. I communicated with the company, which at the time was still in business at a Midwest location. The company's public relations department sent me many line drawings of the plant's buildings, which I used to scratchbuild several of them using Design Preservation Models modular wall sections. Even though I modeled a small portion of what was a large complex, it's a fair depiction of the once existing trackside structures.

As on the prototype, the plant is on the Erie just before Shannon Interlocking. On the layout, it's served by a single spur that branches into four sidings. Although the turnouts are remotely operable, switching rarely takes place on account of the unavoidable depth of the layout where the two railroads merge.

During the planning stages, I wrestled between my goal of maintaining reasonable aisle access and faithfully modeling the interchange. The latter won out. The one concession to Murphy's Law is a concealed pop-up hatch between Southport Yard and the Erie, should the need arise to reraill any cars. Though American LaFrance makes an impressive scene, it would have made more sense to leave it as a static display. — Anthony Daniele

bridge is open, thereby preventing an errant train from falling to its demise.

Sodus Yard, though substantially condensed, reasonably mimics the prototype, including the approach to what I hope will someday be an impressively modeled coal transloading trestle. Today, it's represented by a stretch of $\frac{3}{4}$ " plywood and roadbed on which the tracks

are laid. The Sodus spur terminates next to a small depot after passing a minor engine terminal.

A notorious bane of running open-top hoppers is what to do with the loads once the cars reach their destination. Folks have tried a variety of techniques, including physically loading and unloading scale coal, hand-swapping



MEET ANTHONY DANIELE

ANTHONY DANIELE IS a retired attorney now living on Long Island. He received his first Lionel 0-27 train set at Christmas when he was 4 months old and spent his childhood building several layouts and visiting freight yards with his dad. The Elmira Branch is his first – and last – HO scale layout. When he's not working on or operating his layout, he enjoys boating, sailing, kayaking, and spending time with his 2-year-old grandson.



cars, and modeling loads-in/empties out sites. The latter is clearly the easiest, but unfortunately neither the prototype nor my design lent itself to this, with the originating and destination locations on different levels and on opposite sides of the aisle. Originally, I planned to use a helix between the two ends to swap the cars, but it consumed too much room and interfered with staging. After much head scratching and noodling, I came up with what is essentially a horizontal “helix” that stealthily extends from the trestle, connects with the NYC tracks, and then utilizes a concealed switchback move and a lengthy subterranean connection in order to get from Sodus Point to Williamsport staging, or vice versa. It's cumbersome to operate, since the trains are hidden for most of the trip, but it works and beats physically handling the cars. Another advantage is that it also serves to swap hoppers that end up on the NYC.

CONSTRUCTION AND SCENERY

Construction on the layout began in 1998 and proceeded slowly due to its location some 100 miles from our home.

7 Pennsy Decapod no. 4468 leads a coal drag from Williamsport, Pa., into Southport Yard as a maintenance crew works on a jammed turnout. The ice house and icing platform in the background await reefers filled with cherries and apples from upstate farms. Southport Yard is a major operational focus of the layout.

Work was limited to weekends for the first 14 years, although many weeknights were spent building structures and car kits. In 2012, I retired and moved to the Long Island home permanently, at which point work considerably accelerated. As of today, all trackage is in place and operating, and approximately 70 percent of the scenery is completed.

Benchwork is 1 x 4 open grid, with risers and 3/4" plywood subroadbed. The possibility of someday having to move the layout always looms, so the layout is built in bolted-together sections no more than 5 feet long.

Height varies from the lower Erie east staging's 36" to the NYC's 59" upper staging. At 50", Southport Yard is visually impactful, but difficult to reach into for

someone as vertically challenged as me. But that's what step stools are for.

The roadbed is 1/4" Homabed from California Roadbed [now sold by Cascade Rail Supply – Ed.], which has beveled edges and holds spikes well. The track is Micro Engineering code 83 for main lines and code 70 for sidings; staging yards are code 100 Atlas flextrack. The minimum curve radius is 36" for exposed track and 30" for hidden tracks; the ruling grade is 2 percent.

Mainline turnouts are from Walthers/Shinohara and Peco. A few are operated by Caboose Industries ground throws. Staging uses Peco Insulfrog turnouts exclusively. A few curved turnouts and diamonds were handlaid in places where track alignment precluded using commercial ones. My skill building them improved with experience.

Scenery consists of extruded-foam insulation board covered with either Sculptamold or plaster cloth from Scenic Express. Ground cover is mostly Woodland Scenics ground foam and Noch static grass. Trees come from a variety of sources, but most were constructed from a combination of large twigs and Scenic Express SuperTrees armatures, with ground foam and Noch leaves for foliage.

ROLLING STOCK AND OPERATION

My diesel locomotives are primarily Electro-Motive Division F units or early Geeps. Most are sound-equipped Proto 2000 by Walthers or Athearn Genesis models, with a few Bachmann models thrown in. I have a few old Stewart F3s and F7s that aren't equipped with sound decoders, but I keep them because they run better than anything else I've seen.

Steam is mostly from Broadway Limited Imports, which offers an excellent line of Pennsy locomotives, including an accurate Belpaire-firebox class L1s Mikado and the iconic Ilsa Decapods. When I first began building the layout, the only Decapods available were direct-current brass models from Railworks, and although I purchased several, they never left the shelf.

All of the numerous PRR H21a hoppers are from Bowser, while the rest of the freight cars come from a variety of manufacturers, including InterMountain Railway, Red Caboose, Branchline Trains' Blueprint series, and Proto 2000



8 A hopper of coal stands ready to be unloaded into the coaling tower at Southport Yard's engine servicing terminal as steam locomotives line up for refueling. The coaling tower and roundhouse are Walthers kits, while the turntable is from Diamond Scale Miniatures.

by Walthers. The majority were built from kits and all are airbrush weathered.

Traffic consists of the ubiquitous unit coal drags, merchandise freights, locals, and a single daily passenger train between Williamsport and Canandaigua. Steam-powered locomotives require a pusher to climb the helix to Starkey; diesels don't.

The layout was designed for operation from the start, as a point-to-point, single-track railroad. Indeed, everything is set for fairly serious operating sessions that could involve 15 or more people. (Southport Yard could easily require three or four alone; Sodus Point, two others.) Despite that, I have yet to host an operating session.

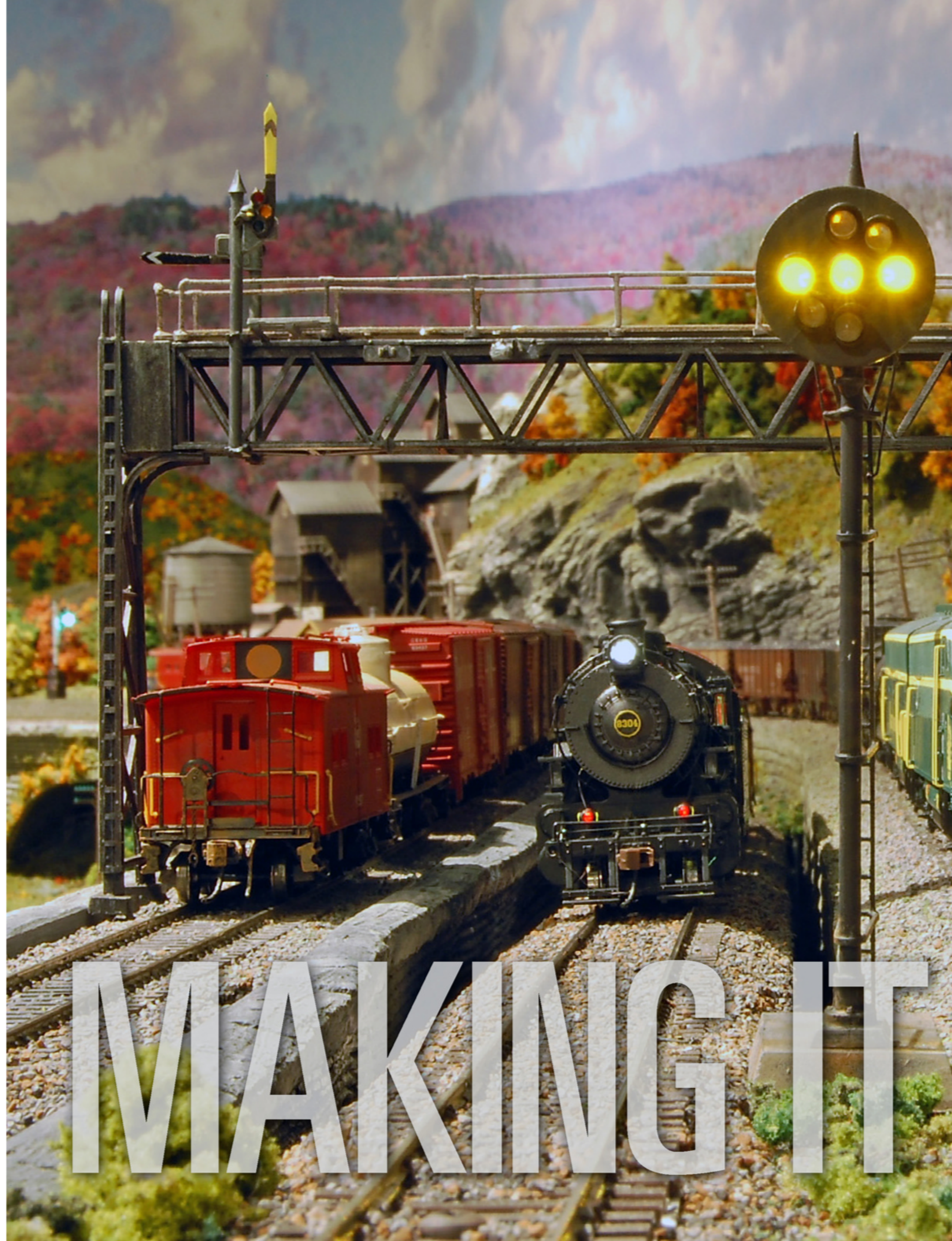
The major stumbling block has been my reluctance to fill out all the car cards and waybills I'd need. At present, I have about 288 freight cars, and I've been procrastinating for years to fill out the car cards and waybills for them. Of course, the unit coal trains, which account for a sizable portion of the traffic, won't require as much paperwork. But until this task is completed, there's little point in trying to organize a crew for an operating session.

On those rare occasions when I actually take time to run some trains, I occasionally operate them with "waybills" in

my head, which works for as long as I can remember what's supposed to go where. But even when I run trains this way, I'm amazed how long it takes to go from one end of the layout to the other. If there are even a few switching moves, or to classify cars in Southport, which is actually one of my most enjoyable activities, it takes even longer. I also enjoy running a coal drag with a trailing Decapod helper, which is challenging, but also a lot of fun.

All in all, it's been quite a journey, and I'm satisfied with the results. In retrospect, there's not much I'd have done differently, which is testament to the years of planning and Tony's sage advice along the way. Often, I felt that I'd been overly ambitious and had bit off quite more than I could chew, but that dissolved as time passed and more of the layout was completed.

My sole regret is that at the beginning I didn't possess the tracklaying and modeling skills that I eventually developed as the years went by building the layout. But I'm not so disappointed with the early work that I feel compelled to do any of it over. My goal this coming year is to pour a gallon or so of Enviro-Tex Lite to finish Seneca Lake and complete the rest of the scenery. And, yes, to fill out those car cards and waybills! **GMR**



MAKING IT



Details, scenery, and structures put the personal stamp on an HO layout built by professionals

By Gary Schaff

Photos by the author

MY FIRST MODEL RAILROADER ARTICLE,

“Built By The Pros” (August 2014), was about my then-newly built HO layout, the Hudson, Delaware & Lehigh. My HD&L is based on a largely freelanced Central of New Jersey and Pennsylvania RR line operating between Jersey City, N.J., and Mauch Chunk, Pa., in the early 1950s. The layout was built by Clarke Dunham and his staff at Dunham Studios.

I was 65 when I contracted with Clarke to build the layout. I’d been out of the layout-building game for many years, and many things had changed besides my age. There was no way I was going to build my proverbial dream layout with my skill set and still have time to enjoy it. I did have significant input into the design, though.

Still, I would feel bad when a visitor would see the layout and ask, “Did you build this?” and I had to say, “No.”

Although I received a beautiful, museum-quality layout that’s better than I bargained for, there was still room for me to put my own touches on the Dunham Studio creation. I started slowly with relatively small, easy projects and worked my way up to more difficult ones. I also benefited from other peoples’ skills in making the layout additions.

1 A Central of New Jersey Electro-Motive Division F3 leads a freight toward Mauch Chunk, at right, while another CNJ departs Mauch Chunk at left and a Pennsylvania RR H10 Consolidation works the PRR-CNJ interchange between them. The signals and line poles are a few of the details Gary Schaff has added to his HO scale Hudson, Delaware & Lehigh.



2 The Jersey City CNJ ferry terminal is a signature scene on Gary's model railroad. Since the layout appeared in *Model Railroader's* August 2014 issue, Gary has added lighted buoys and dockside details.

SIGNALS AND STRUCTURES

One of the projects where I needed help was installing an operating PRR position light signal system. John Doty, one of Clarke's layout builders, installed this Integrated Signal Systems product. After John did most of the installation and testing, I weathered and landscaped around the signals.

I also improved the signal system on the CNJ part of the layout by adding two signal bridge kits by Oregon Rail Supply, blended with Tomar Industries semaphores. An existing third bridge was also upgraded with Tomar semaphores.

My biggest construction project was actually a construction site. Adjacent to the CNJ Communipaw engine facility, B&P Construction is served by one of the Communipaw spurs. Its dominant feature is a cement plant that I built from a Faller kit and weathered. I also built stone, sand, and gravel bunkers using Blair Line wood grade crossing kits as the walls.



The site is well stocked with early-1950s trucks. Key among them are three Sheepscoot Scale Products kits. The LJ Mack tractor with dump trailer was built and decaled for me by Sheepscoot owner George Barrett. Tim Bartlett of Gandy Dancer Hobbies built the other two, a Link Belt LS-98 crawler crane and C-100 Autocar dump truck.

My next major structure challenge was my first craftsman kit, Tiny's Trackside Cafe by Bar Mills. I added this off

3 In a few low areas between tracks, Gary poured Liquitex gloss medium to simulate a marsh. He added weeds, junk, wildlife, and dead trees to the mix. This scene also features Gary's line poles and weathered rolling stock.

the entrance road to CNJ's Jersey City station on the Hudson River. I found this modest entry-level building to be fairly easy to assemble, paint, and weather.

Right behind Tiny's Café I placed Moreau Transfer, a dockside freight house built by my friend and hobby shop owner, Roger Moreau. Down a level and 100 scale yards from Tiny's is the late Brian Madison's exquisitely detailed Al's Repairs garage and a junkyard Roger salvaged from Brian's layout. I added an access road and more junk and vegetation around Al's to blend it in.

Next came a yard office for the Communipaw engine facility. I built this from a Roundhouse (Athearn) 1890s mail car. After removing the trucks and undercarriage, I planked over the windows at one end with scrap wood to simulate a storage area, added a foundation and steps using railroad ties, and topped it off with a chimney made out of a plastic sprue.

My roundhouse, turntable, and environs have been festooned with vegetation, a multitude of railroad junk, spare parts, soot, grease, rust, and – thanks to John Doty – a welder spraying sparks.

WATERFRONT DETAILS

The Jersey City Hudson River waterfront, with its signature CNJ passenger station and ferry wharves, dominates the

THE LAYOUT AT A GLANCE

NAME: Hudson, Delaware & Lehigh

SCALE: HO (1:87.1)

SIZE: 13'-6" x 35'-0"

PROTOTYPE: Central RR of New Jersey and Pennsylvania RR

LOCALE: Jersey City, N.J., to Mauch Chunk, Pa.

ERA: early 1950s

STYLE: walk-in

MAINLINE RUN: CNJ, 170 feet; PRR, 108 feet

MINIMUM RADIUS: 27"

MINIMUM TURNOUT: no. 5

MAXIMUM GRADE: 3.5 percent

BENCHWORK: plywood frame with "cookie-cutter" plywood subroadbed

HEIGHT: 40" to 45"

ROADBED: cork on extruded-foam insulation board

TRACK: Peco code 83

SCENERY: extruded-foam insulation board and sprayed-on foam

BACKDROP: self-adhesive photos on Sintra

CONTROL: NCE Digital Command Control

Hudson, Delaware & Lehigh RR

HO scale (1:87.1)

Room size: 13'-6" x 35'-0"

Scale of plan: 1/4" = 1'-0", 24" grid

Numbered arrows indicate

photo locations

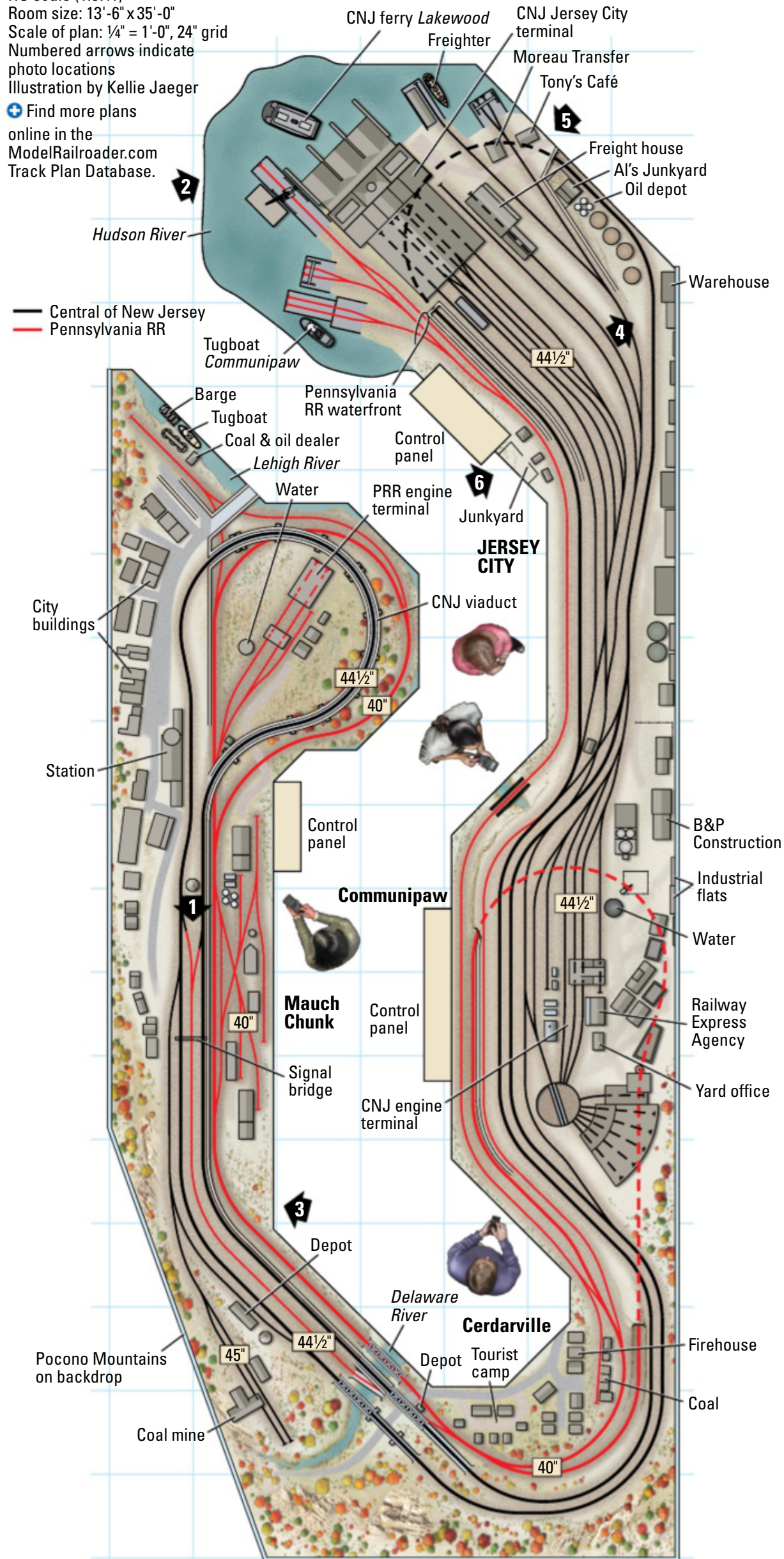
Illustration by Kellie Jaeger

Find more plans

online in the

ModelRailroader.com

Track Plan Database.



Utility pole references

TO DATE I'VE PLACED about 150 trackside line poles and roadside utility poles on the layout.

Research before construction and installation was imperative. The references I used are:

- Gordon Odegard's "Railroad Line Poles" from *Track Work & Lineside Detail* (Kalmbach Books, 2000)
- Michael Burgett's "Stringing Details in the Sky" from MR's *How to Build Realistic Layouts - Model the Trackside Scene* special issue
- Lou Sassi's "Lay It on the Line" from *Basic Scenery for Model Railroaders* (Kalmbach Books, 2001)
- Jeff Wilson's "Making Accurate Utility Poles & Wires" from MR special issue *How to Build Realistic Layouts 4*. – Gary Schaff



4 Gary studied articles about making utility poles look more realistic before placing about 150 of them on his layout.

look like they've been around awhile. In addition to the Kalmbach books *Basic Painting & Weathering for Model Railroaders* (Jeff Wilson) and *Done in a Day* (Pelle Søeborg), I researched every *Model Railroader* I had from 2005 to present. I also attended a weathering clinic at Roger's hobby shop. I put together a binder dedicated to weathering that has a list of all the above references, my clinic notes, and what techniques I employed on every car I weathered.

My techniques include washes, dry-brushing, scraped pastel chalk powder, and Bar Mills weathering powders.

I remove the trucks from the car and weather the car and trucks separately, using no powders on the trucks/wheels to help keep the trucks and track free of possibly abrasive contaminants. I applied a lot of weathering techniques I learned on cars to my structures, as well.

LINE AND UTILITY POLES

I used Rix Products' railroad telephone poles. They can be adapted for either line or utility pole use. They come molded in shiny brown plastic and need some pre-installation work. The poles need to be cut to length depending on their use and location. After the poles were cut to desired length, I used the leftover pieces to make guardrail posts, painting the tops white.

The poles can be textured to look like the real thing without any painting by scraping wood grain into them vertically with a razor saw and sandpaper.

I painted the crossarms with a flat brown paint and varied the insulators with green, white, or brown paint, followed by a clear gloss coat.

For certain utility poles, I added transformers cut from leftover plastic sprues and stuck two flame-heated, cut-down pin ends into the transformer tops to represent the primary input bushings. Gray paint highlighted with drybrushed rust finished the job. I've since found commercial transformer replicas that I may use on future poles.

Although these poles add detail and realism to a layout, they do have a drawback. They're fragile, and the crossbars glued to the pole will become detached with the slightest touch, such as a shirt sleeve reaching across the tracks to uncouple a car. Adding wires to the



layout entrance area. Newer additions to this area include two coastal freighters built by Roger Moreau. The smaller one is a Sea Port Model Works kit, and the bigger ship is a combination kitbash/scratchbuilt vessel. Roger took a smaller-than-HO scale model of a large ship and, using its base as a foundation, added HO scale superstructure details.

Other maritime scene touches include lighted buoys, sea birds, and docks detailed with cleats, cranes, fueling facilities, freight, and workers.

5 Tiny's Trackside Cafe is Gary's first wood craftsman structure kit. Moreau's Transfer, behind it, is another new addition to the layout.

ROLLING STOCK WEATHERING

Early on in my layout upgrades, I began weathering rolling stock. So far I've done mostly freight cars. Of the slightly more than 100 freight cars, about 60 percent are completed. I read a lot of books, magazine articles, and websites on the techniques of making my cars



6 Gary added several junkyards to the layout, including this one in Jersey City. The fence is a wooden Bar Mills kit.

poles exacerbates the problem. I have friends who are big into operations who have removed their poles permanently for this reason. My poles are wireless and are planted in their holes without adhesive so they can be removed if necessary.

OTHER LINESIDE DETAILS

Some other, less involved improvements I've made on the layout:

FENCES. Simple to build and great looking, seven wood Bar Mills Insta-Fences add charm around the railroad.

BILLBOARDS. Nine early-1950s billboards, including three kits, one electrical/animated, and two on rooftops, add color and realism.

ROADS AND GRADE CROSSINGS. The layout had eight grade crossings when installed. I added 23 more, some wood kits, some wood from scratch, some dirt, and some stone. Many of

these were rail yard crossings, not requiring crossbucks. I also added three roads, one of stone and two dirt, made from tan grout.

JUNKYARDS. In addition to Al's Repairs, I added two more junkyard scenes. They're easy to do; how can you screw up a junkyard? They keep on growing, just like the real ones.

WETLANDS. In three locations where two nearby elevated track sections flanked a low area, I poured Liquitex gloss medium, forming a swampy area. Vegetation, wildlife, junk, and dead trees bring the scene to life.

TRUCKS. I'm a stickler for realistic, era-appropriate trucks. In addition to the Sheepscot kits, my truck fleet includes Ulrich and Sylvan kits built and painted by another expert modeler and friend, Jake Galloway.

AND MORE. Also scattered around the layout are instrument/relay sheds; an assortment of birds, bears, and deer; ground and climbing vegetation; abandoned vehicles; tires; barrels; derelict boats; railroad ties; and a hobo camp.

THE PERSONAL TOUCH

Now, when asked "Did you build this?" I still say "no." But it's a qualified "no," and as I give the grand tour, I can point out some of the additions I had a hand in, along with the work of some good and talented friends. **GMR**

MEET GARY SCHAFF

GARY CAUGHT THE TRAIN BUG

from Lionel trains he got for Christmas as a "yoot" in New Jersey. He's retired after careers in the U.S. Air Force and as a firefighter in West Hartford, Conn. He and his wife, Bonnie, live in Harwinton, Conn., with their two rescue dogs. Gary and Bonnie have two grown children and two grandchildren.



RIDE THE SANDY

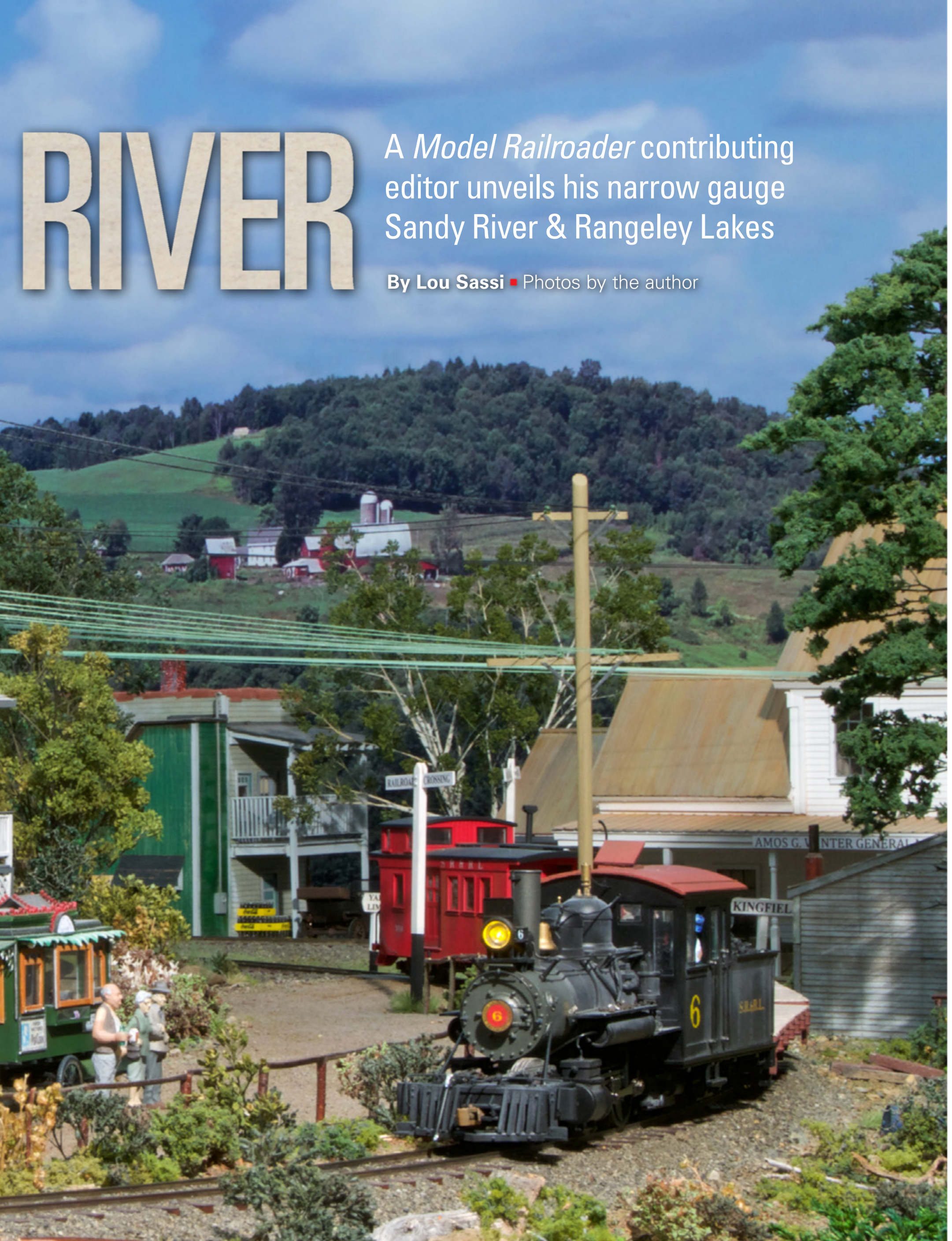


1 Forney no. 6, with a string of flatcars in tow, passes the Mountain View House as it heads out of Kingfield for Strong on Lou Sassi's On30 Sandy River & Rangeley Lakes. Based on the two-foot-gauge Maine prototype, Lou's layout has been the source of many *Model Railroader* articles over the years.

RIVER

A Model Railroader contributing editor unveils his narrow gauge Sandy River & Rangeley Lakes

By **Lou Sassi** ■ Photos by the author



IN THE MID-1960s, I read Linwood Moody's book on the narrow gauge railroads of Maine, *The Maine Two-Footers* (Howell-North, 1959). I was especially taken by the Sandy River & Rangeley Lakes (SR&RL). But at the time, there was almost nothing "ready-to-run" in any scale that the modeler could use to replicate the narrow-gauge equipment of those prototypes. So instead, I modeled the Boston & Maine and Rutland in HO scale (1:87.1). The result was my West Hoosic Division RR (WHD), which was featured in a number of *Model Railroader* magazines and special publications over the ensuing years.

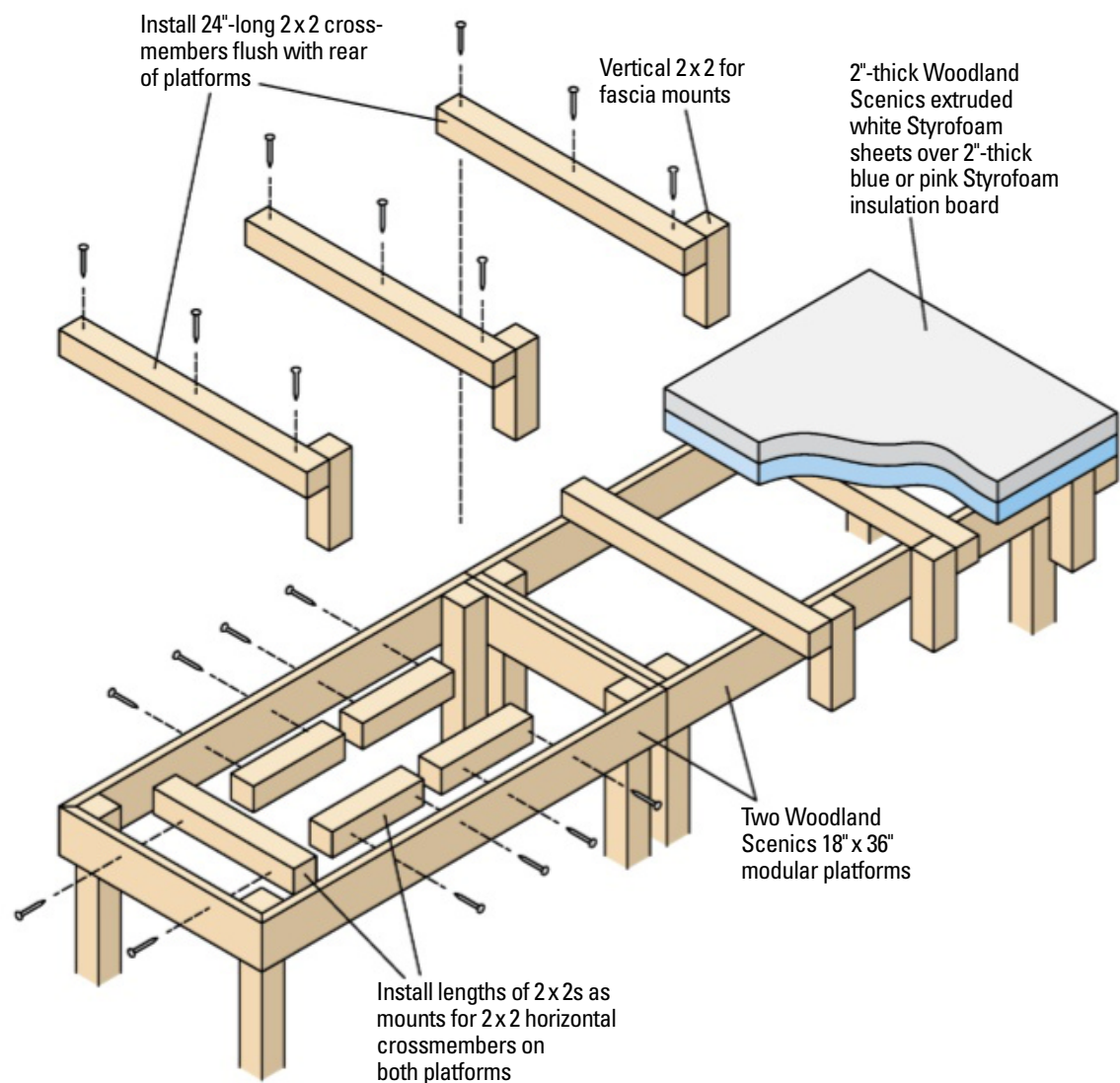
In 2005 Tony Parisi, then owner of Tony's Train Exchange, sent me a Bachmann Forney in On30 (1:48 proportion, 30" track gauge). Though its track gauge was about a foot too wide, it was an excellent representation of the Maine narrow gauge power. About the same time, Bachmann released a number of freight and passenger cars, also reminiscent of the two-footers' equipment. I placed the locomotive on my HO track and was amazed at how well it ran.

Since I was working on a book for my friends at Kalmbach Books, I made a quick call to Jeff Wilson and was given permission to include the construction of an On30 diorama featuring the SR&RL in the last three chapters. I purchased two more Forneys and a few pieces of freight equipment, all of which I sent to George Micklus, who painted and detailed them for the SR&RL. By the time I completed the diorama and book, I decided it was time to switch not only scales, but also gauges.

BUILDING THE SR&RL

All of this coincided with my wife, Cheryl, and I moving from upstate New York to North Carolina. I brought the motive power, equipment, and the 2 x 6-foot module, built for the book, to Raleigh along with the benchwork lumber I had saved from the WHD and began construction of a railroad in the bonus room of our new home.

The original module for Strong, Maine, was built on two 18 x 36-inch Woodland Scenics Mod-U-Rail open-grid tabletops. For the Strong portion of the layout, I laid 2 x 2 lumber horizontally across the table tops to increase the



2 This overall view of the layout from the doorway to the train room centers on the Mountain View House, with Forney no. 10 pulling a freight from Kingfield to Strong in the foreground.

THE LAYOUT AT A GLANCE

NAME: Sandy River & Rangeley Lakes

SCALE: On30 (1:48, 30" track gauge)

SIZE: 7 x 16 feet

PROTOTYPE: Sandy River & Rangeley Lakes

LOCALE: north-central Maine

ERA: mid 1930s

STYLE: island

MAINLINE RUN: 42 feet

MINIMUM RADIUS: 22"

MINIMUM TURNOUT: no. 5

MAXIMUM GRADE: 2 percent

BENCHWORK: open grid

HEIGHT: 42"

ROADBED: Homabed

TRACK: Micro Engineering flextrack, code 83 (main) and 70 (sidings)

SCENERY: extruded-foam insulation board

BACKDROP: commercial photos from LARC Products

CONTROL: NCE Digital Command Control

Sandy River & Rangeley Lakes

On30 scale (1:48)

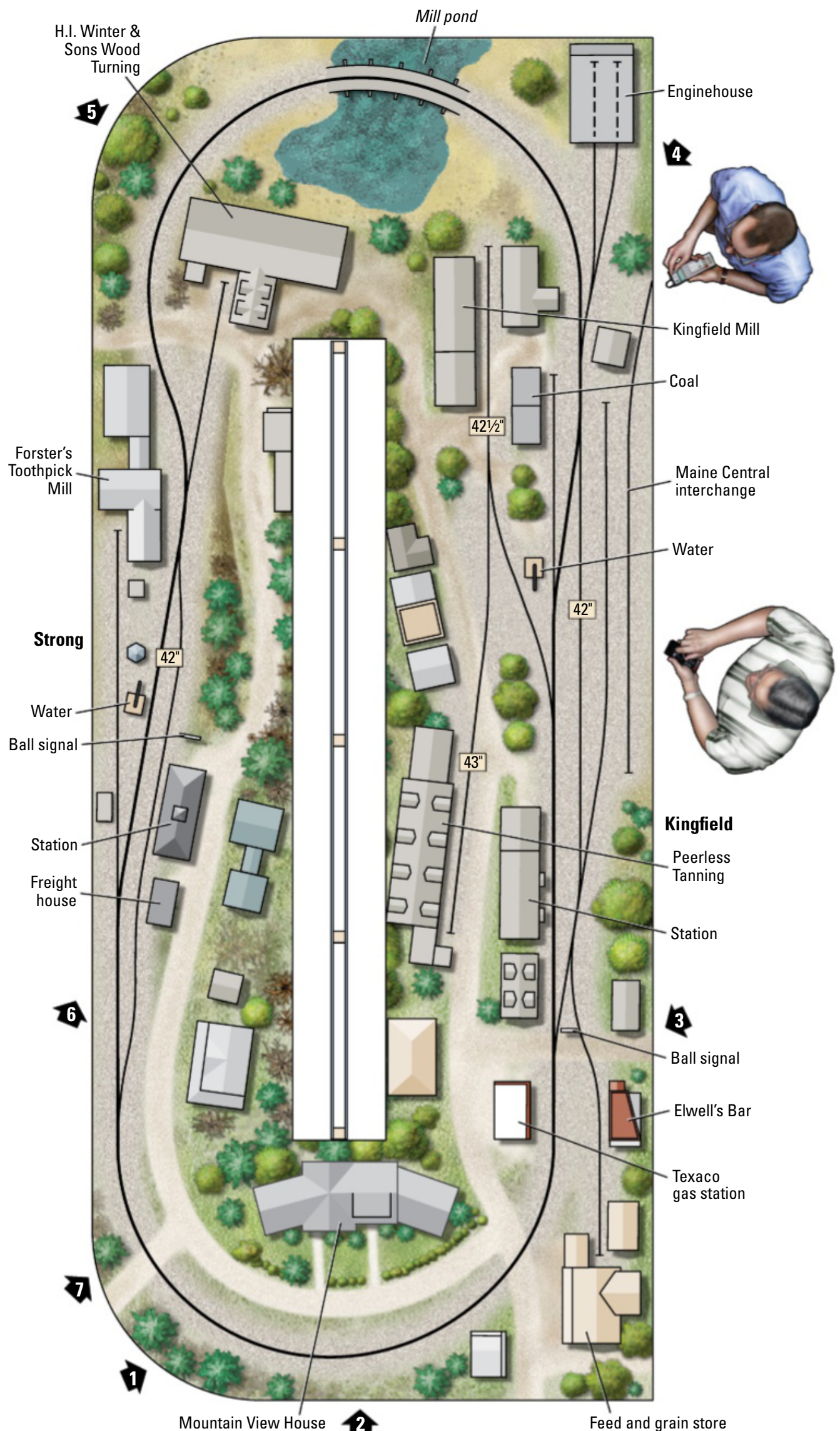
Layout size: 7x17 feet

Scale of plan: 1/2" = 1'-0", 12" grid

Numbered arrows indicate photo locations

Illustration by Roen Kelly and Rick Johnson

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





3 Jim Clark watches Forney no. 10 cross Pleasant Street in Kingfield while Dick Elwell takes a snooze in front of his bar. The rest of the locals are too busy to watch no. 10 pulling a freight from Kingfield to Strong.

width to 2 feet. Since I already had a good deal of lumber from the WHD, I replicated the Woodland Scenics construction with a series of 3- to 4-foot long modules. I increased the width on the Kingfield side of the railroad to 3 feet. Over this grid I laminated two 2" thick extruded-foam insulation panels. The diagram on page 52 depicts the components of a typical section. [Lou described how he built his benchwork in the July 2014 MR. – Ed.]

I created elevation changes with Woodland Scenics foam sheets ranging from 1/4" to 2" thick. I white-glued Homabed onto the foam, then glued the track to the Homabed.

While the track and turnouts on my WHD were all handlaid, I decided this time around to go with Micro Engineering track. I reused the Caboose Industries high-rise switch stands I'd saved from the WHD to line the turnouts (see the October 2013 MR). As a bonus, these little wonders are exactly to scale for On30.

I incorporated Strong and Kingfield, actual locations on the prototype Sandy River, into a loop design. This allowed me to run the railroad continuously while hosting visitors.

To the design I added a number of sidings and a switchback to serve industries modeled after those on the prototype. I also installed a length of standard gauge track in Kingfield as a transloading interchange track. (On the prototype, there was such an interchange in Farmington between the SR&RL and the standard-gauge Maine Central.)

Since the railroad was in a bonus room of our new home (bonus rooms in Southern homes like ours are usually above the garage and feature knee

walls), I opted to make the layout 7 x 17 feet, freestanding, in the center of the room. I designed it to surround a double-sided backdrop featuring two 10-foot-long photo backdrops from my friend Bill Brown, owner of LARC Products. On one side of the backdrop, the Strong scenery and backdrop depict late fall, while on the other, early summer in Kingfield.

POPULATING THE LAYOUT

I modeled the mid-1930s, just before the prototype ended operations. I asked George Micklus to paint and letter a few more boxcars, three flatcars, and four pulpwood cars. Rich Cobb built a Banta Models caboose and kitbashed a Bachmann combine and coach. Once these cars were completed and returned to me, I added details and weathering to reflect service. On my request, Neil Schofield

Adding locomotive details



Pulleys, chains, rerailers, and ash-pan pullers are among the details Lou adds to the decks of his steam locomotives.

IN PROTOTYPE PHOTOS of SR&RL steamers I noticed things like re-railers, jacks, pulleys, and chains on their running boards and front decks. So I've enhanced my fleet of On30 engines by adding such paraphernalia. Manufacturers like Berkshire Valley and Wiseman Model Services carry many such items. One item almost always present was a puller used for cleaning ashes from the locomotive fireboxes. It was a simple matter to whip up a few of these using fine wire and a small piece of strip styrene. The photo of engine no. 10, above, shows the result of my efforts. – Lou Sassi



4 Forney no. 10 rolls past trainman Sonny Fairbanks as it heads into the Kingfield enginehouse. The locomotive is a Bachmann model.





Superdetailing the foreground



Lou added visual interest to the otherwise boring space between the track and the layout fascia with a fence, standing water, weeds, and junk.

THERE WAS A 3-INCH WIDE by 5-foot long strip of bare ground between the interchange yard and the front of the layout in Kingfield that I always felt needed more detail. Company Arborist Cheryl came to the rescue one day by suggesting adding a right-of-way fence and weeds, along with a bit of standing water and discarded trash to the area. The photos show the result of a half-day's work. While Cheryl planted weeds, I created the water using clear acrylic caulk. We also added wood pallets that I weathered gray and distressed with my modeling pliers. Now, rather than a bland grassy slope, we have an interesting foreground mini-scene. – Lou Sassi

did a beautiful paint and weathering job on a SOCONY (Standard Oil Co. of New York) tank car.

The Bachmann Forneys, a 2-4-4T design, fit this mid-30s period well. However, since Bachmann didn't have a good representation of the SR&RL's 2-6-2 Prairie locomotives, I got a couple of their outside-frame 2-8-0s instead. They proved to be good runners and reflected the general appearance of the 2-6-2s, while giving me the option to run longer trains. It was mentioned in at least one book on the Sandy River that management had given thought to utiliz-

ing just such a wheel arrangement on the railroad in its later years.

Most of the structures on the layout are scratchbuilt by my friend Rich Cobb from photos and sketches of prototypes I supplied. I acquired a few others, some kits and others kitbashed, from Tom Staton when he tore down his On30 railroad in Syracuse.

Strong Station is a Banta models kit, while the one in Kingfield is scratchbuilt. The Winter Store in Kingfield is a selectively compressed version of the real thing, as are all of the mills on the railroad. Elwell's Bar in Kingfield was

5 Forneys no. 8 and no. 6 pass the Forster's toothpick mill as they double-head a freight out of Strong. Woodworking industries like Forster's that rely on the many hardwood trees that grow in the region are a major reason that the prototype railroad was built.

scratchbuilt by Frank Baker from photos I supplied of the same building, an HO scale FosScale kit, on my friend Dick Elwell's railroad.

SCENERY

Except for the trees and field grasses, the scenery on the railroad was done by yours truly over a base of "Ground Goop." [Ground goop, a mixture of glue, paint, vermiculite, and other materials, is described in the March 2015 MR. – Ed.]

Most of the evergreens are the work of Carol Vreeland, co-owner of Sterling Models, while all of the hardwoods and field grasses are from my wife, Cheryl, the "Company Arborist." She earned that title three years ago when she offered to make a few hardwood trees for the railroad. That few turned into dozens, all of them works of art in their own right.

I knew I needed to represent different types of trees, especially white birch, in a scale much less forgiving than HO. White birch trees are a big part of the reason the SR&RL existed. The wood of that tree is used for turnings, clothespins, and toothpicks, all products shipped by the SR&RL.

MEET LOU SASSI

LOU WAS INTRODUCED to model railroading when his father bought him a Lionel train set for Christmas in the early 1950s. In the 1970s he started construction of his HO scale Boston & Maine West Hoosic Division. In the late 1970s, Lou started writing articles and drawing cartoons for *Model Railroader*, a partnership that continues to this day. In the June 2017 issue, then-MR editor Neil Besougloff named Lou a contributing editor of the magazine.



Though I'd built thousands of hardwoods for my HO scale WHD, I was stuck on the challenge of how to come up with a variety of them in O scale. Cheryl solved my problem by putting her artistic talent to work and creating some of the best model trees, white birches included, that I've ever seen. The pictures that accompany this article (and Cheryl's article in the April 2019 MR) prove my point.

OPERATIONS

Trains are operated using an NCE Digital Command Control system with two tethered walkaround throttles salvaged from the WHD. As I did on the WHD, I use John Allen's "tab-on-car" system to determine train movement.

A typical operating session consists of a train being built up in Kingfield from (loaded and unloaded) cars at the interchange track combined with those picked up at the various industries. After five loops around the railroad, we reach Strong, where cars are picked up and set out. Another five loops and we return to Kingfield to drop cars at industries and the interchange to again be loaded or unloaded. At times, we may have to clear the main on one of the two passing sidings and wait for a passenger consist to pass.

Although this is a simple approach to operation, it will keep a two-man freight crew busy for about an hour and a half while a passenger train runs multiple loops around the railroad making station stops along the way.

I've always enjoyed model railroading, and building and operating the Sandy River has been no exception. It and the WHD have provided me with years of pleasure.

Through my association with the folks at Kalmbach, for the last 40 years I've been able to travel the country (plus a few visits to Canada) meeting model railroaders from every walk of life and photographing their railroads – more than 275 to date. It's been an extremely enjoyable and enlightening experience.

Many of those folks I visited have become friends. Much of what I learned while visiting their layouts has enabled me to improve my own into something better than I could have created without their influence. **GMR**





6 Forney no. 10 hauls a scrap train into Strong with the remains of some excess freight cars that were burned at Howland's pit after the abandonment of the line to Bigelow.



7 Heather Forster watches from the yard of the family home as Forney no. 16 crosses Adams Street on its way from Strong to Kingfield. It's fall on the Kingfield side of the layout and early summer on the Strong side; evergreen groves separate the seasons.

THE BLUE RIDGE MOUNTAIN ROUTE



1 Georgia Northeastern RR locomotives no. 9706, an Electro-Motive Division GP38, and no. 7562, an EMD GP10, lead the Elizabeth Yard Turn over the Etowah River Bridge on Thomas Klimoski's GNRR model railroad. The spare-room-sized HO scale layout models a prototypical modern-day short line.

Modeling a Georgia short line offers loads of operation in a small space

By Thomas Klimoski ■ Photos by the author



ONE OF THE MOST DIFFICULT DECISIONS modelers have to make when planning a new layout is what railroad and era to model. There are so many choices, from freelanced to strictly following a prototype. There's no right or wrong answer; it's all up to the modeler to decide what's important to them. Once these decisions are made, the rest usually falls into place.

I wanted to design a switching layout that included a variety of industries and could be modeled in a small spare room. I enjoy modeling the modern era, but still like the "classic" Electro-Motive Division locomotives built in the 1950s and '60s, from GP9s to GP38s. These four-axle locomotives look more appropriate on a small switching layout than contemporary 6-axle diesels and would be a good compromise if I could find a modern-era railroad that still used them.

Not wanting to overlook an interesting railroad that might be right in my own backyard, I narrowed my search to railroads near me. By modeling a line near my house, it would be easier to obtain prototype information and take photographs for backdrops.

I also wanted to select a prototype that wasn't widely known so my model railroad would be distinctive. I began examining short lines and found that many still operated older locomotives and had unique paint schemes and interesting operations. Modeling a short line would fit all my criteria, but which prototype to choose?

MY PROTOTYPE

Located just north of Atlanta, in the foothills of the Appalachians, the Georgia Northeastern RR (GNRR) operates a nearly 100-mile-long segment of the Louisville & Nashville (L&N)'s "Old Line" from Marietta, Ga., to Copperhill, Tenn. Classic EMD power still works the line, which winds its way into the mountains from a connection with the CSX Western & Atlanta Subdivision at Elizabeth Yard in Marietta.

The original line was built by the Marietta & North Georgia RR after the Civil War (and after several failed attempts by other railroad companies). The L&N took over the line in 1902 but soon began looking for an alternate route from Marietta to Etowah, Tenn., due to the steep grades and tight curves on the line. Once a "New Line" was built a little farther west, the branch became known as the "Old Line."

The L&N provided local rail service to the customers along the "Old Line" for many years. In 1987 the southern portion was acquired by investors from Tennessee and a new railroad was formed, the Georgia Northeastern (GNRR).

The GNRR serves numerous customers along the line, including the metal coating, concrete,



2 A boxcar load of bricks is spotted at the Marietta team track. The unloading ramp was cast with Rockite expansion cement.

lumber and building material, grain, chemical, plastic manufacturing, aircraft component, and marble industries. A small locomotive service facility in Tate, Ga., provides repairs and service to keep the all-EMD fleet operating.

Once I found the GNRR, I knew I had my prototype. It had everything on my wish list, including EMD Geeps, numerous industries, a small locomotive facility, and slow-speed operations. Now I needed to design a track plan that would incorporate all these features.

GETTING IT ALL TO FIT

The spare room in my basement for the model railroad is 9'-2" x 10'-6" – not big, but sufficient for my needs. I wanted a small switching layout that could be finished in a few years and host operating sessions for two to four operators.

For the most efficient use of space, I designed an around-the-walls layout with a center peninsula. The shelf is 18" deep in most places, with the sections along the two shorter walls 14" deep.

I determined the best track height for me was 54", which allowed for storage and a workbench below the layout. The aisle is adequate at 28" wide.

I was having trouble coming up with a track plan that allowed for staging inside the layout room without compromising the track plan. The solution was to add a removable staging cassette in the adjacent craft room with a hole in the wall between the two rooms for access. The staging cassette is 8" x 5'-6" and has two staging tracks that represent Elizabeth Yard in Marietta. When not in use, the staging cassette is stored on a shelf under the layout and artwork covers the tunnel between the rooms.

THE TRACK PLAN

I believe in keeping things simple, and that applies to track planning. I sought to make the best use of the space I had, but allow for negative space and not crowd the elements. Negative space for model railroads means leaving room for scenery – forests, roads, empty lots – to separate scenes. This helps make the layout more realistic and allows the eye to focus on the signature scenes.

I also wanted to include non-rail-served structures and one formerly

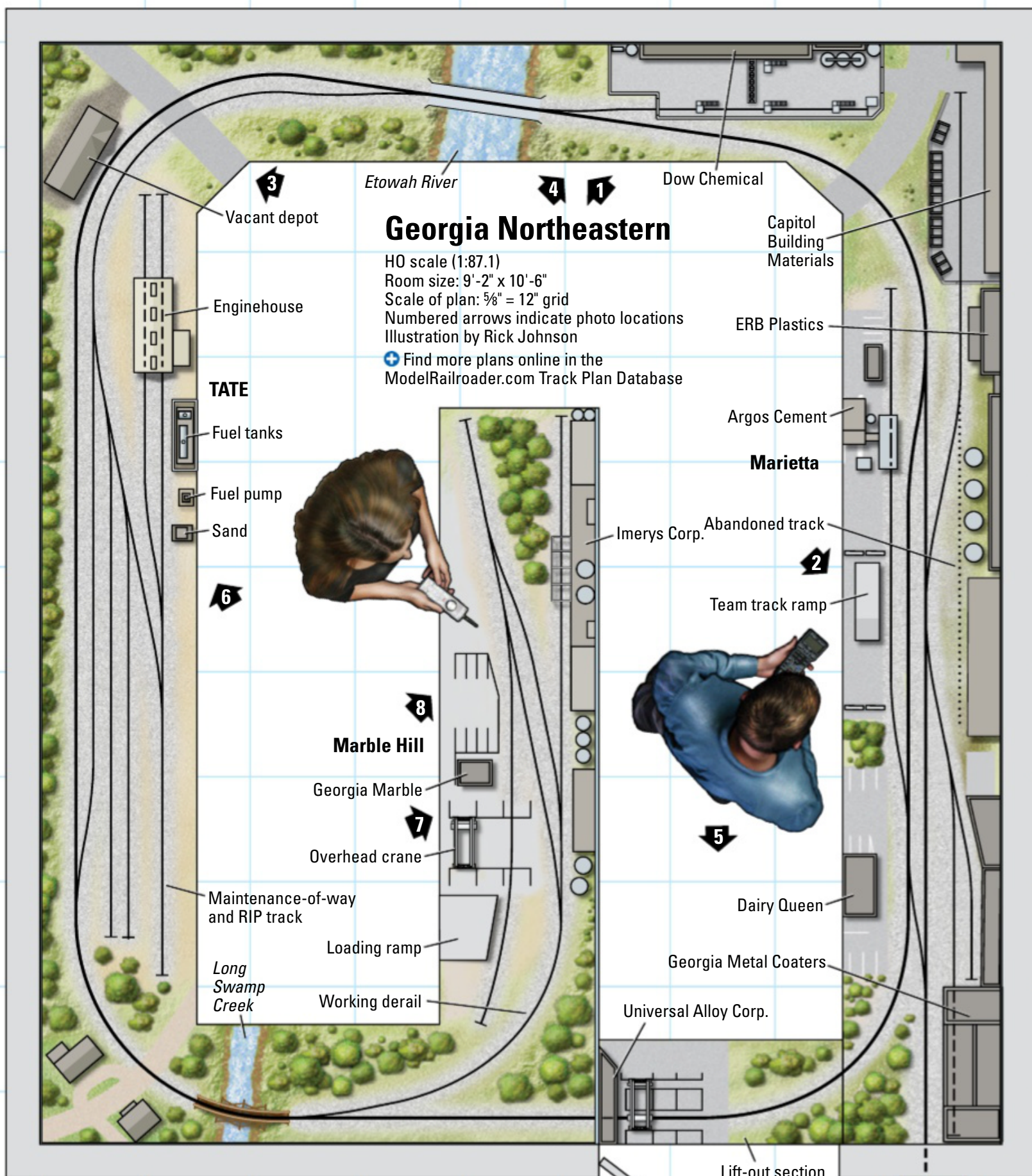
rail-served vacant building with the rails from the siding removed. Not every industry along the tracks on prototype railroads are rail-served, so including these elements also increases realism.

When designing a track plan, it's a good idea to establish minimum radius and turnout standards. I decided on a 24" minimum radius and no. 6 turnouts to provide reliable operation while allowing the greatest flexibility with track placement. With these standards, I was able to develop a point-to-point layout with a small yard and plenty of industries for the local switch jobs.

DIVIDE AND CONQUER

I highlighted three key parts of the GNRR that I wanted to model. These included an industrial area around Marietta, the yard and locomotive service facility in Tate, and the marble industries in Marble Hill.

I divided the plan into three sections that placed the key areas along the two longer walls of the layout room and the peninsula. Focusing on the three key areas allowed me to edit the prototype into manageable sections while eliminating the need to include everything I saw on the prototype.



THE LAYOUT AT A GLANCE

NAME: Georgia Northeastern RR

SCALE: HO (1:87.1)

SIZE: 9'-2" x 10'-6"

PROTOTYPE: Georgia Northeastern RR

LOCALE: Georgia

ERA: present-day

STYLE: linear walkaround

MAINLINE RUN: 36 feet

MINIMUM RADIUS: 24"

MINIMUM TURNOUT: no. 6

MAXIMUM GRADE: none

BENCHWORK: open grid

HEIGHT: 54"

ROADBED: cork

TRACK: Micro Engineering code 70

SCENERY: extruded-foam insulation board and Sculptamold

BACKDROP: commercial photo backdrops on drywall; tempered hardboard on peninsula

CONTROL: Digitrax Digital Command Control with Iowa Scaled Engineering ProtoThrottle



3 The conductor provides point protection and assures the traffic is stopped at the grade crossing before advising the engineer it's safe for the train to proceed. The photo glued to the backdrop was taken at the same location as the modeled one on the prototype.



4 The North Local crew in locomotive no. 7562 arrives to switch the busy Dow Chemical plant. Thomas modeled a working flip-over derail on the spur; crews must flip it to protect the main line after spotting cars at the plant.

I included scenic breaks to give a feeling of distance between each area. The scenic areas are the bridge over the Etowah River and the trestle over Long Swamp Creek.

I kept the three sections in the same geographical order as the prototype so operating crews familiar with the full-size railroad can relate their location on my layout to those on the GNRR. On my layout, north is always to the viewer's left when facing the layout. Keeping the compass direction consistent allows new operators to quickly comprehend the

switching jobs and feel comfortable operating the layout.

SELECTING INDUSTRIES

I selected several prototype industries on the GNRR to include on my layout. The industries were scratchbuilt or kit-bashed to match the ones on the prototype. While they're not exact copies, the structures capture the general overall look of the facilities. Most were built as flats against the backdrop to save space.

When choosing industries, I wanted those that received a variety of car types

to make the consists of the locals more diverse. Two industries, Argos Cement and Georgia Marble, were selected because they receive cars that are less than 50 feet long. Shorter cars let you fit more of them in a train, making the train seem longer than it is.

In the modern era, most rail-served industries are large ones that receive several cars at a time. All industries on my layout have spots for more than one car, which helps make the industries more realistic. Unfortunately, I wasn't able to include a large prototype grain facility that receives inbound shipments of grain for a chicken-processing facility. The facility takes shipments of 25 to 50 covered hoppers at a time and was just too large to be included on my layout. If I'd selected this industry, even in a compressed state, it would have overwhelmed the rest of the layout.

PUTTING IT ALL TOGETHER

With the benchwork footprint established, industries selected, and scenic elements defined, I determined the final

track arrangement. I wanted a continuous run, which was achieved with a lift-out section across the doorway. In order to get the industries to fit in the allocated space, I had to rearrange them from their exact location on the prototype, but I kept them in the same geographical area.

I didn't include any complex track arrangements and used only standard no. 6 Micro Engineering turnouts. All turnouts are lined by hand, keeping with my "simple is better" philosophy. I also located industrial sidings so turnouts would be easy to reach and kept any structures near the fascia low whenever possible.

Once I had a track plan drawn up, I mocked it up full-scale on brown shipping paper. This step allowed me to better visualize the location of the turnouts and make minor adjustments to the plan. I was also able to check that the number of car spots I had at each industry would accommodate all the cars without fouling adjacent tracks. Later, I used the full-scale mock-up as a template when I transferred the track plan to the completed benchwork.

BENCHWORK AND TRACK

The layout is built on conventional open-grid benchwork, 1 x 6 on the peninsula and 1 x 4 elsewhere, topped with a layer of 2" extruded-foam insulation board. The river and creek scenes were notched out in the framing and a plywood base was used in these areas for the base of the water feature.

The benchwork sections were built in my garage in five separate pieces, holes drilled for wiring, painted, and then installed in the train room. Using this process dramatically cut down on the mess of construction inside the house.

The track is all code 70 Micro Engineering to represent the lighter rail found on the prototype. The ties were painted with a wash prior to installation, then the rails were painted with Floquil Rail Brown after it was installed. The track was laid on commercial cork roadbed for the main line and thinner sheet cork for the sidings. Some track was laid directly on the foam base to represent sidings buried in weeds and dirt.

Once the track was laid, it was time for wiring. I divided the layout into four

A removable industry



5 Thomas built a removable lift-out section across the doorway to provide a continuous run. This was converted to a removable industry, which is installed only when the industry is scheduled to be switched.

WHEN I FIRST DESIGNED the layout, I wanted to include an option for a continuous run. I built a lift-out section and added scenery to it. After operating for a year, I realized I never used the continuous run; I only operated point-to-point.

Not wanting to discard the liftout, I converted it to a "removable" industry. The industry I chose is a modern tilt-slab style structure where the siding runs into the facility through an overhead rolling door. [See "Model a modern tilt-slab building" in the May 2019 *Model Railroader*. –Ed.] I designed the structure and paved yard area based on prototype photos of the facility. I removed some scenery materials from the liftout and added a paved loading area with a ramp. I also installed an overhead crane similar to the one seen at the prototype facility. I scratchbuilt the structure from styrene and installed an operating overhead door.

The liftout with the industry is only installed when the facility is scheduled to be switched; otherwise, it's stored on a shelf under the layout. On the prototype, the facility is switched once a week or less, so I only schedule cars to be picked up or set out every third or fourth operating session. If the need arises, I could use the liftout for a continuous run by removing the structure.

– Thomas Klimoski

power districts and used a Digitrax PM42 circuit breaker. Having the layout divided into power districts makes troubleshooting easier and allows operation to continue in the other districts if one has a short. Feeders were soldered to the rails every 3 to 6 feet and connected to the DCC bus wires with insulation displacement connectors, also called "suitcase connectors."

Tam Valley Frog Juicers were installed to provide power to all the turnout frogs. It's especially important on a small switching layout featuring slow-speed operations to have reliable electrical power to the tracks.

SCENIC VARIETY

For the scenery process, I prefer to begin with ballasting the track. I used Arizona Rock & Mineral CSX/Southern Pacific/Wabash gray blend no. 138 in HO and N scale. I used a 3:1 mix of HO to N scale ballast for the main line. For those sidings and yard tracks where the ballast covers the ties, I only used N scale ballast so it wouldn't interfere with the wheel flanges.

The scenery forms were made with extruded-foam insulation board covered with plaster cloth or Sculptamold. Plaster rock castings were incorporated in several areas and stained with paint



washes. After carving out drainage ditches in the foam base along the sides of the tracks, I painted the plaster and foam base with a clay-colored paint to represent the red Georgia clay found in the area. Next, I spread white glue on the painted areas and sprinkled on a thin layer of screened and dried Georgia soil I got from my yard.

Finally, I used Heki Wildgrass fiber mats for the grassy overgrown areas along the railroad right-of-way. I used two colors of the Wildgrass mats to prevent a monochromatic look and give variation to the grassy areas.

Most of the trees on the layout are SuperTrees from Scenic Express. I prepared the armatures and sprayed them with a light gray primer spray paint. Once the paint was dry, I sprayed the trees with an unscented extra-hold hair spray and coated them with various colors of leaf flock.

THE EMD FLEET

One of the disadvantages of modeling a short line is that finding commercially produced locomotives in the right paint scheme is difficult, if not impossible. The only option for the modeler is to paint their own fleet. Fortunately for me, Microscale once produced a decal set for the Georgia Northeastern that made this project a little easier. These decals, long out of production, occasionally come up at online auction sites, where I was able to purchase enough to decal my small locomotive fleet.

Over the past few years, I've been painting my fleet of GNRR locomotives replicating those units operating on the prototype. I selected a prototype locomotive from each EMD class, then painted and detailed a model to match it. I've learned a great deal

about airbrushing and decaling while working on these projects. As a result, my skills have improved. While I was decorating the locomotives, I also installed working ditch lights on each model and upgraded the decoders to ESU LokSound Select decoders (if they weren't already equipped with them). I now have a fleet of smooth-running prototype-based GNRR locomotives operating on my layout.

OPERATING LIKE THE PROTOTYPE

Operating sessions are when the layout really comes to life. I prefer to operate with a two-person crew, one as the engineer and the other as conductor. This mimics how the prototype GNRR crews operate. Crews use prototype-based switch lists that indicate the cars to be picked up or

MORE ON THE WEB

Thomas Klimoski has posted a number of videos of his layout on our website. Watch them now at ModelRailroader.com.



6 Vintage Electro-Motive Division Geeps await their next assignment at the locomotive terminal in Tate. Thomas chose his prototype in part because he wanted a modern railroad that still ran older diesels.

dropped off. In addition, crews are given handouts that highlight the rules to be followed for operating sessions.

To make operating sessions even more realistic, the locomotives are run with a ProtoThrottle from Iowa Scaled Engineering. [Model Railroader subscribers can read a staff review and watch a video demonstration of the ProtoThrottle at ModelRailroader.com. –Ed.] The ProtoThrottle is a miniature EMD control stand that can be held in one hand. The engineer operates the throttle by notching up and down just like a prototype engineer would and using the brake lever to bring the locomotive to a smooth stop.

All locomotive decoders are programmed with deceleration set to maximum and the braking feature enabled to work in conjunction with the ProtoThrottle and create a realistic operating experience. Operating with the



7 The Georgia Marble facility ships slabs of cut marble in gondolas. Thomas modeled the marble slabs with cut pieces of real marble tile.

ProtoThrottle also adds time to an operating session, as the engineer must plan out his moves and operate slowly. By following prototypical rules and using the ProtoThrottle, operating sessions are much longer than one would expect on a small layout.

When I worked as a trainman for the Blue Ridge Scenic RR, a subsidiary of the GNRR, I was able to meet many GNRR employees and talk to them about their experience and operations on the line. Much of what I learned wasn't available in books or even online. This valuable information was then used to set up my operations plan and develop prototype switch lists.

When guest operators come over to run on my layout, I provide them with a list of operating rules. These rules describe the railroad operating procedures and help guide guests as to how I prefer to prototypically run trains on my model railroad. I developed a document that replicates the prototype Georgia Northeastern's employee timetable. The timetable describes special situations and updates to the standard GNRR rulebook. I modified and combined the GNRR rulebook and the timetable into a handout that covers the most important rules and procedures.

The goal of the Operating Rules document isn't to be a deterrent to an

enjoyable operating session, but to give operators a structure in which to experience a prototype-based session. I've found that the document helps guests better understand the prototype's procedures and feel comfortable operating on my layout. The most important rule is for guests to relax, have fun, and enjoy operating the Georgia Northeastern.

SWITCH JOBS

Currently I have three separate switch jobs on my layout, the North Local, the Marble Hill Turn, and the Elizabeth Yard Turn, replicating jobs on the prototype. The switch jobs can be run in sequence, or for those sessions where I have four operators, the North Local and Marble Hill Turn can be run simultaneously by two-person crews.

The North Local begins in staging with the cars blocked in industry order from south to north. The crew departs the yard northbound and switches the industries in Marietta up to Dow Chemical. Normally the crew switches the trailing-point industries first, then uses the runaround in Marietta to switch the remaining industries. Once they've finished, the train returns to staging. Switching the industries in Marietta can take an hour or more to complete.

The Marble Hill Turn begins in Tate with the crew picking up its locomotive

MEET THOMAS KLIMOSKI

THOMAS AND HIS WIFE,

Diane,

live in the north Georgia mountains. Thomas is a retired fire captain from Miami and is a volunteer firefighter for Towns County, Ga. He also worked as a trainman on the Blue Ridge Scenic RR for five years. Thomas' Georgia Northeastern RR appeared in *Model Railroad Planning 2016* and in several *Model Railroader* articles since. You can see more of Thomas' layout at www.thomasklimoski.com.



By running these three jobs back to back, I can have a two- to three-hour operating session for two operators. Not bad for a small bedroom-sized layout. Guest operators are always amazed how much operation I can have on my little model railroad.

IT'S ALL IN THE DETAILS

With a small layout, it's easier to focus on the details that can enhance an operating session. Details include not only scenery and structures, but operational details as well. While some may see these as impediments to operations, I see them as enhancements to an operating session and replicating the same procedures that prototype crews use every day.

Today, security is a top priority at all facilities, and fence gates across industry siding tracks have become more common. I constructed an operating fence gate (see the March 2018 issue of *Model Railroader*) at two of the industries on my layout. These same industries on the prototype have fence gates that the GNRR crew must open before they can switch the cars. During operating sessions, crews must stop prior to entering the siding and open the gate by turning a crank handle on the fascia. This simple procedure adds interest and a realistic prototypical step for the crews as they switch the two industries.

Another common prototype detail I model are derails. Derails prevent cars that may roll out of a siding from fouling an adjacent track or the main line by purposely derailing the car before it reaches that point. I modified a white-metal derail casting to operate as a flip-over derail. The crews must remove the derail prior to switching the industry, then reapply it once they are done. Yes, if a crew forgets to remove a derail, they actually work, although there's a lot less paperwork involved if a model derails than if it occurs on the prototype.

After studying the prototype, I discovered another detail that I wanted to replicate, an operating overhead door. There are two facilities on the prototype where the GNRR crew must operate an overhead rolling door to switch cars inside the building. I built an operating overhead door using a Lego Technic gear reducer and other components to make the door function [see the May 2018 MR.

from the service facility, then using the switch list to sort the cars they need from the cars in Tate Yard. Once they have their cars, the crew departs the yard and heads to Marble Hill to switch the industries there. The switching in Marble Hill can be a little challenging, as there's limited room on the runaround track and the tail track can accommodate only the locomotive. Once the crew has switched out the cars at the marble industries, they head back to Tate Yard to drop them off as indicated on the switch list.

The third switch job, the Elizabeth Yard Turn, takes cars from Tate Yard and drops them off on a staging cassette representing Elizabeth Yard and the CSX interchange. The crew starts their work by picking up their locomotive from the engine service facility and then sorting the cars needed for their train from the cars in Tate Yard. Once they have their train assembled, an end-of-train device inserted in the last coupler, and a simulated brake test completed, they depart. On arrival in Marietta, the crew drops off its train on the runaround track, then pulls empties needed for the return trip from the staging cassette. The crew then runs around the Elizabeth-bound cars and shoves them into the open staging track. Finally, the crew reassembles the train, returns to Tate, and drops it off in the yard.



8 A Trackmobile spots covered hoppers at Imerys in Marble Hill. The loading rack was scratchbuilt and the structure was kitbashed from Walthers kits.

– Ed.]. Crews turn a rooftop ventilator to open and close the door.

Operating grade-crossing signals also add an operational detail that crews must work with when switching industries near the crossing. Many municipalities have rules that prevent train crews from blocking a grade crossing for extended periods, and I incorporated those requirements on my layout. Crews are required to not block the crossing for more than 10 fast clock minutes. They must also use caution to not unnecessarily enter the grade-crossing detection circuit zone and activate the crossing signal when switching. Occasionally,



crews may have to split their consist on each side of the crossing to allow traffic to pass while they switch the industries.

These operational details slow down an operating session and help make a small layout operate like a much larger one. The key is to not make the detail so involved it frustrates the operating crew. Not every industry or location on my layout has these details, so they don't become overwhelming to the crew.

A "FINISHED" LAYOUT

While very few layouts are ever truly finished, mine has nearly reached that stage. I still have more rolling stock to

weather and other small projects to keep me busy for a few years, but the significant work is done. From start to finish, this layout has taken just over five years to complete. It's been an enjoyable journey, and I plan to hold many operating sessions over the next few years where guests can experience prototype-based operations in a relaxed atmosphere on my layout.

While operating sessions will keep the layout around for quite a while, I have begun to explore the option of building another layout below the original GNRR. This new layout may be in a different era and scale. The second layout

will allow me to continue to build structures, scenery, and explore new modeling challenges, but still hold operating sessions on the original layout.

While not many people know of the prototype GNRR, it will always be an extraordinary railroad to me. From the operation of classic EMD diesel units to the unique mix of industries served, the GNRR has been the ideal prototype for me to model. By focusing on a few key elements, I've been able to capture the appearance and operations of the railroad on my layout. I'm so thankful that I didn't overlook what was right in my own backyard. **GMR**



MODELING THE NEW HAVEN UNDER WIRE



An HO scale layout first seen in August 2004's *Model Railroader* reaches completion

By Richard Abramson ■ Photos by the author

MODELING THE NEW YORK, NEW HAVEN & HARTFORD RR (NH)

presents many avenues of interest. There's a choice of mainline and branchline electrification that would include big motors (freight and passenger) and multiple unit (m.u.) cars. Then there's mainline steam or diesel, depending on the era. The railroad also operated gas-electric motorcars, various types of rail buses, and Budd Rail Diesel Cars (RDCs).

Though in size it can't match the Great Northern, Pennsylvania RR, or other large railroads, the New Haven has often been referred to as a "compact giant." This name refers to the passenger and freight traffic density in the states it served – New York, Connecticut, Rhode Island, and Massachusetts.

My HO scale New Haven layout was first featured in *Model Railroader* in August 2004. At that time, the layout had been under construction for seven years, with many areas unfinished. The main thrust of that article was the electrification. Working odd hours on a prototype railroad left me little time to work on the model railroad. It wasn't until 2012, when I retired after 44 years on the railroad (beginning with the New Haven in 1968), that I finally had the time to get my layout moving toward completion. This allowed me to finish the non-electrified areas of the railroad, the signal system, and track schematic.



The New Haven advertised its locomotives with posters like this one in the 1940s. This one is an original from 1943 portraying the new EF-3 freight motors. Richard Abramson collection

1 Electro-Motive Division FL9 no. 2029 pulls a train of Osgood-Bradley lightweight coaches on Richard Abramson's HO scale New York, New Haven & Hartford RR. The large gantry-like structure in the background is an anchor bridge for the catenary.

BUILDING A ROOM AND A LAYOUT

Since I grew up “under the wires” on the New Haven in the 1960s and have always liked traction and heavy electrics, there was no question that I’d model the NH. The big issue was coming up with a track plan.

At this time (early 1997), the area in the basement that would be the train room was unfinished. My wife agreed with me that the layout should be in a finished basement. Until this was done, designing a track plan was pointless.

My friend John Grosner, a carpenter and fellow NH modeler, did all the stud installation, drywalling, and drop ceiling work. This was completed between April and May 1997. Now I could design a track plan.

While employed by the NH, I worked at Devon, Conn., where a wye comes off the four-track main. How great would be to model where I worked!

With great fanfare on June 21, 1997, John took a photo of me as the first piece of benchwork was installed. On Aug. 11, 1997, with the first loop of mainline track installed, the first train made a test trip around the layout. My HO scale New Haven was successfully underway.

Now came laying track, planning scenery, and deciding what structures would go where. While the subroadbed for the main line was being installed, extra space had to be allotted for installation of catenary bridges. That phase was four years away.

As is the case with most layouts, selective compression is a major part of designing a layout, especially when one wants to compress a large area. Passing through Devon, which is 12 miles west of New Haven, Conn., is the NH’s four-track electrified main, which has a wye. There’s also a massive four-track Scherzer rolling lift bridge over the Housatonic River.

THE LAYOUT AT A GLANCE

NAME: New York, New Haven & Hartford RR

SCALE: HO (1:87.1)

SIZE: 12'-6" x 19'-6"

PROTOTYPE: New Haven electrified zone

LOCALE: southwestern Connecticut

ERA: 1950s to 1960s

STYLE: around-the-walls

MAINLINE RUN: 65 feet

MINIMUM RADIUS: 36"

MINIMUM TURNOUT: no. 6

MAXIMUM GRADE: 2 percent

BENCHWORK: open grid

HEIGHT: 49"

ROADBED: Homasote

TRACK: code 100 flextrack

SCENERY: plaster gauze over extruded-foam insulation board

BACKDROP: commercial photo backdrop

CONTROL: direct-current cab control



2 A pair of ex-Virginian rectifiers, purchased by the NH from the Norfolk & Western in 1963, power a westbound freight bound for Brooklyn, N.Y. The lead motor, no. 301, had an experimental Faively pantograph.

New York, New Haven & Hartford RR

H0 scale (1:87.1)
 Layout size: 12'-6" x 19'-6" feet
 Scale of plan: 1/2" = 1'-0", 12" grid
 Numbered arrows indicate photo locations
 Illustration by Robert Wegner,
 Rick Johnson, and Jay Smith
 Find more plans online in the
 ModelRailroader.com Track Plan Database.

- Catenary towers
- Bracket poles



I knew there wouldn't be room for the bridge. Sometimes sacrifices have to be made. I never liked stuffing 10 pounds of bologna into a 1-pound bag.

Along with the electrified main line, which has four tracks through Devon, space constraints dictated that the four tracks be reduced to three and then to two. Even in the two-track area through Bridgeport, Conn., on the layout, the illusion of a heavy electrified main is still there.

While I have all types of NH motive power – electric, diesel, and steam – the era of the layout is the mid-1950s to the end of the NH in 1968. (On Jan. 1, 1969, it became part of Penn Central.) Since I have many classes of NH steam, electrics, and diesels, I can easily shift eras for an operating session.

The layout covers the NH from Bridgeport to Devon. While this isn't a great distance, it has the essence of the NH main line and its catenary. The wye at Devon, where tower S.S. 71 (S.S. stands for Signal Station) is located, is one end of the Waterbury Branch, which runs north from Devon to Waterbury, Conn. At Derby Junction, tower S.S. B-253, 10 miles north of Devon, controls the wye where the junction of the freight route to Maybrook, N.Y., joins the branch. Once again, utilizing selective compression, I was able to incorporate this major junction along with S.S. 199, Berkshire Junction, where the line to Pittsfield, Mass., left the Maybrook Line in Danbury, Conn.

INSTALLING THE CATENARY

Installing catenary is an exacting and time-consuming procedure. The wire can't deviate side to side any farther than the distance between the end horns of the pantograph shoe that makes contact with the trolley wire. Curves are particularly difficult, because all my curves are superelevated. Therefore, the wire has to be strung farther inward to compensate for the locomotive's tilt; if not, the pantograph would come out from under the wire.

All of the catenary bridges are photo-etched brass models by Model Memories. This company also makes different types of .025" phosphor-bronze catenary and individual wires. Hope you like soldering if you plan on stringing wire.



Fortunately, when I began stringing the wires in 2001, much of the NH's original catenary was still in place. I took numerous photos of the catenary with its unique "floating beam" suspension system and the massive anchor/sectionalizing bridges. An anchor bridge is where sections of wire are secured to maintain their tension. Anchor bridges also have circuit breakers to enable sectionalizing of the 11,000V AC wire when necessary to work on the catenary. I scratchbuilt two of the anchor bridges and purchased one from Model Memories.

With pantographs being pricey and hard to procure as replacements for brass models, I installed a pantograph from an old AHM GG1 on a boxcar and pushed

it around the layout to test the wire to be certain it remained on the shoe.

My original plan was to energize the wire and operate from it. This proved impractical, since the catenary bridges are brass and would require insulation. Furthermore, on some brass electric locomotives, the pantographs aren't insulated from the bodies. While running off the overhead is prototypical – and I've done it on smaller layouts – it doesn't really gain anything.

OPERATING THE LAYOUT

For the main line, I wanted a continuous loop where trains would operate while switching occurs around them. Suspended above the layout is a track



3 New Haven class EY-2 no. 210 is on the East Bridgeport inspection pit awaiting the OK to depart for its daily work on the local. The model is a brass Overland import, painted and lettered by Richard. The prototype was built in 1911 and ran until 1957.

4 An FA-1 and FB-1 set prepares to depart Maybrook Yard in New York for Cedar Hill Yard. Maybrook was the western terminus of the NH, where it interchanged with the Erie RR; New York Central; and New York, Ontario & Western. The locomotives are Proto 2000 models.



schematic with green and red light-emitting diodes (LEDs) that indicate routing, not occupancy. The LEDs on the board match those on the control panel.

All tracks are color-coded on the diagram. The westbound mainline tracks are green; eastbound, blue. Derby Junction tracks are red, and Maybrook and Naugatuck tracks are purple. All these colors match those on the control panel.

Trains are run by direct current. The dispatcher controls all mainline turnouts, signals, and blocks. During an operating session, no train can move without the dispatcher's permission.

The signal system and installation was designed and built by fellow railroader and longtime friend Robert Bass. The home signals are fully functional, controlled by the dispatcher and operated by Miniaturics circuitry. The signals

display the appropriate indication(s) after the route is established. After the train passes the signal, it drops to red over red and stays that way until the dispatcher puts in the next route and "calls" for the signal. The signal indications are green over red, which is clear; red over red, which is stop; and red over green, which is medium clear.

There's also the distant signal on the Berkshire Line in advance of Berkshire Junction. If the home signal displays clear, the distant displays clear. If the home displays stop, the distant displays yellow over red, meaning approach. If the home displays red over green, or medium clear, the distant will display yellow over green, which is approach medium. Anyone attending an operating session must be familiar with the signal locations and indications. These are an



Light-emitting diodes on this track diagram, suspended above the layout, tells operators how turnouts are lined around the system.

integral part of a session. The signals aren't "scenery;" they're crucial to proper train movement.

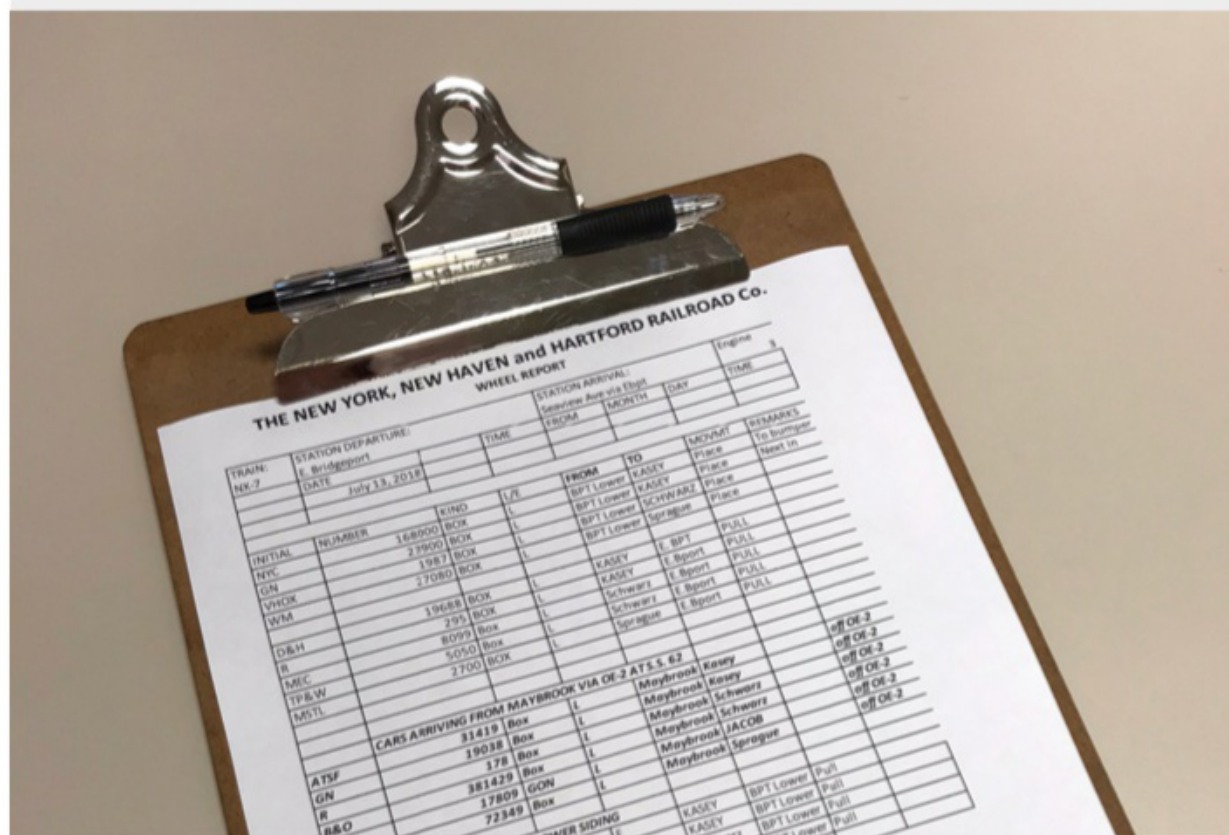
All switching is governed by wheel reports for each train. The dispatcher also has a copy of each wheel report so he knows what moves need to be made. It can get quite busy! Each wheel report shows the operator of his train where cars going to and from, and their placement or pulls.

All the train symbols are from an NH book. The trains are as follows: OE-2/EO-1 is Maybrook-East Bridgeport-Maybrook; NX-2 is the East Bridgeport switcher; NX-666 is the Turkey Brook Yard job, which also handles customers on the Maybrook and the main. (We gave it this devilish symbol because this particular job is one of the most complex for both the train crew and the dispatcher.) NX-6 works the dock local, and NX-7 handles Seaview Avenue. On the New Haven, "NX" designated "New Haven Division Extra."

I always liked street running. The New Haven had some on Seaview Avenue in Bridgeport, a feature I incorporated into the layout. An EY-1 class motor running off trolley wire was used until 1952, when the New Haven took the wire down and changed to Alco S-1 or S-2 diesel switchers. I modeled the area with wire.

The Seaview Avenue job is interesting because the cars destined for this job are spotted on Bridgeport's lower siding. The motor pulls the cars and then must cross over to the Seaview Avenue branch and shove the cars across a diamond that's governed by a signal. The outbounds get pulled and the inbounds spotted. The motor then must shove the cars to tower S.S. 62, where this branch joins the

Using wheel reports



Richard uses wheel reports to tell his operators what to do with the cars in their trains.

A VITAL PART of the layout's operating scheme are the wheel reports. The wheel reports show the crews of each train what work they have to do. Since each train's work has a "trickle-down" effect on other trains, timing of meets and track occupancy is very important. It certainly keeps the dispatcher busy.

Prior to each session, we have a job briefing with each train crew to review their wheel report and hopefully dispel any confusion. The wheel reports list the reporting marks and number of each car in a train, its type, its load status, any placement requirements, whether the car is to be pulled or placed, and its destination. – Richard Abramson



5 An EP-5 on an eastbound train passes a train of “washboard” m.u. cars on the famous “Jenkins Curve” in Bridgeport, named for the Jenkins Valve Co. located nearby.



6 An EF-1 freight motor spots a reefer car on the Smith Bros. dock in Bridgeport. These motors, built by Baldwin-Westinghouse in 1912 and 1913, served the NH until 1956. The freight motor is a Model Engineering Works model.

main, waiting for a signal. It then shoves the cars to East Bridgeport Yard, where they will be eventually placed in the return train, EO-1, to Maybrook. The motor runs light back to Seaview Avenue, awaiting its next drop, which will arrive on the Maybrook-East Bridgeport freight, OE-2. The motor exchanges the cars previously placed on Seaview Ave-

nue with the new inbounds and returns to Bridgeport Lower Siding with the originally placed cars.

The diamond where the Seaview Avenue Branch crosses the Maybrook Line is protected by four single-aspect signals. When a clear is displayed in both directions on the Maybrook, the Seaview Avenue signal displays stop, and vice-versa.

When a train gets a stop signal, the crew must contact the dispatcher to get a clear in order to cross the diamond. The crew can also tell the dispatcher in advance when a clear signal will be needed.

There are four walkaround cabs that plug into sockets in the fascia around the layout. East Bridgeport Yard, Maybrook Yard, the Dock, and Seaview Avenue



have their own cabs. One of the great things about having an operating session is seeing my layout do things it can't if I'm running it alone.

A MOVE AND RECONSTRUCTION

In late 2018, my wife and I moved into the house my in-laws had left to her. I knew the layout had to come along.

However, it wasn't designed to move, which presented issues.

My good friend Don Mitchell engineered the move. The layout was cut into eight sections beginning in January 2019. We began moving it, catenary and all, on Feb. 2, 2019, and had all eight sections in the new house, put temporarily on the floor of the new railroad room, on

March 1. Don built all new L-girder benchwork to support it. The layout has been spliced back together, and I hope to have everything back in service soon.

As of Jan. 1, 2019, the prototype New York, New Haven & Hartford has been gone 50 years. Soon I will once again be able to relive those great New Haven days vicariously through my layout. **GMR**



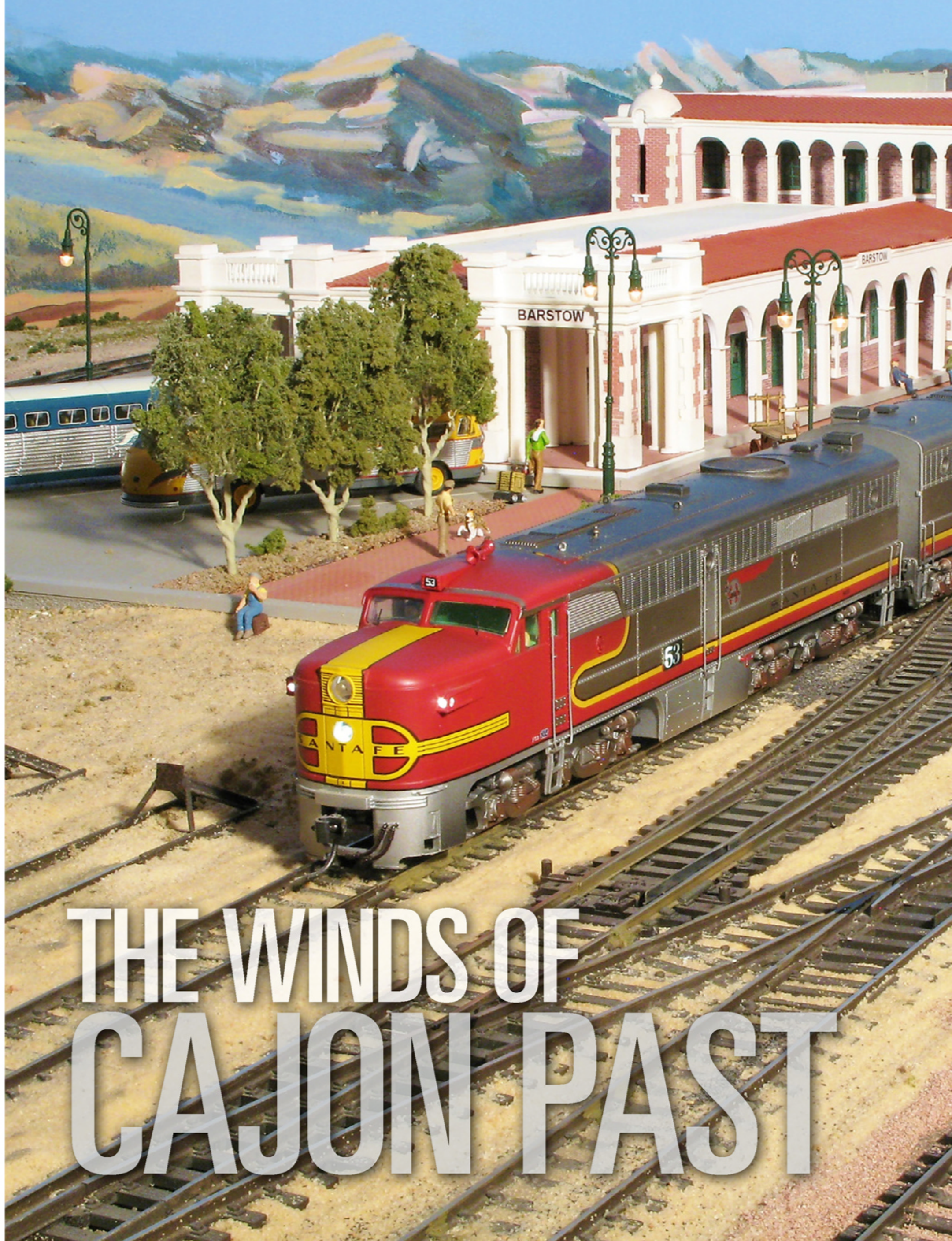
MEET RICHARD ABRAMSON

YOUNG RAILFAN RICHARD

ABRAMSON already decided as a child he would work for the New Haven when he grew up. This became reality in February 1968 when he was hired by the NH as a drawbridge operator in Devon, Conn. He retired 44 years later as superintendent of operations for the Housatonic RR. He's also worked as a hostler for Amtrak in New Haven, Conn. Richard lives in Trumbull, Conn., with his wife of 31 years, Christine, a retired nurse who refers to Richard's layout as his "mistress." Between them, they have two adult children and two granddaughters.



7 Class R-1 no. 3301, seen departing Maybrook Yard, is a United States Railroad Administration 4-8-2. Richard customized the Bachmann model by adding the Elesco feedwater heater and piping made from black wire.



THE WINDS OF CAJON PAST



Childhood memories inspired a Wisconsin modeler to re-create Southern California

By Dave Rickaby
Photos by the author

HOW DOES A GUY FROM NORTHEASTERN

Wisconsin come to model Southern California, and in particular, Cajon Pass? Pat Smith's inspiration was his father and the layouts they built together.

As far back as Pat can remember, his family home had trains. Growing up in Menasha, Wis., his family had an American Flyer layout in an 8 x 10 room in the basement. He still has vivid memories of those S scale Atchison, Topeka & Santa Fe (ATSF) Alco PAs pulling trains through terrain made to resemble the American Southwest.

Eventually the American Flyer set was replaced with HO scale. After a move to a new home, Pat and his father built a new layout. Pat temporarily left the hobby when he went into high school. But in the 1990s, he decided that the only way he would get back into model railroading was by dedicating himself to building his dream layout.

Cajon Pass, situated between the San Bernardino and San Gabriel mountain ranges in Southern California, has a long and glorious railroad history. It was this history that intrigued Pat. He models Cajon Pass as it was in the 1950s and '60s, when the Atchison, Topeka & Santa Fe and Union Pacific (UP) plied the rails. This was during the transition from big steam to multiple sets of F units, pulling unit trains of reefers, manifest trains, and crack passenger trains over the hill with helper locomotives.

A LITTLE HELP FROM HIS FRIENDS

Prior to building his present layout, Pat met fellow modeler Lynn Draper, who controlled his HO scale Sherman Hill layout with CTC-80, an early command control system developed by modeler Larry Keeler. Lynn convinced Pat to try it on the layout he was building with his father. But when it came time to install the receivers into his locomotives, he called Larry.

1 Atchison, Topeka & Santa Fe passenger train the *Chief* has just pulled into Barstow Station on Pat Smith's HO scale Cajon Pass model railroad. The model station, also known as "Casa del Desierto," was built by Pat's friend and fellow modeler Bob Page.



Larry put him in touch with Stephen Priest, who was building CTC-80 receivers for Larry. Stephen installed Pat's receivers, as well as weathering some cars for him and helping with other projects. Over time they became friends, collaborating on more projects over the years. When Pat made the move to Digital Command Control (DCC), he traded his CTC-80 system back to Stephen.

One day Pat called Stephen, who shares Pat's love for the Santa Fe, to tell him he'd bought a new house and wanted Stephen's help designing a railroad for the basement. Stephen agreed. The initial design took up the entire basement, so Pat scaled it back a bit, keeping Stephen's original concept intact.

THE LAYOUT

Pat and his wife, Margaret, built their house in 1997, and construction on the layout began the following winter. Pat hired a contractor to build the benchwork, which was completed in just 1½ days. Pat calls that decision the smartest thing he's ever done. Later on, Pat had the contractor come back to help him install the fascia and lower panels.

Everything from the benchwork up, however, was built by Pat. This included the track, buildings, scenery supports, wiring, and scenery. When help was

needed, he either called his friend Lynn or Paul Pasowicz from EngineHouse Services in Green Bay, Wis. Pat purchased his model train supplies from Paul, who also helped with problem solving, trickier electronic issues, and decoder installations.

Pat's layout was designed as a free-style walkaround. The modeled era is flexible; Pat can switch from March 17, 1953, to Nov. 22, 1961, by changing locomotives and rolling stock. The layout models the area between Los Angeles and San Bernardino. The latter was the location of the Santa Fe's major shops, and most of its trains originated there. Although there were icing platforms for reefers in both of those cities, Pat chose to add a common icing platform for both the Santa Fe and UP between the two cities, as well. The area in between is selectively compressed, with rolling hills and orange groves represented.

The layout features trains running from Los Angeles east through Barstow before heading to staging, which represents points east including Kansas City and Chicago. Westbound trains run from staging to Los Angeles. The layout can either be run as a continuous loop for public viewing or point-to-point from Hobart Yard (open staging) in L.A. to staging beyond Barstow.

2 This view from near the layout entrance shows the Barstow engine terminal in the foreground and Barstow Station straight ahead. Light-emitting diode floodlights on poles in the engine terminal facilitate nighttime operation.

THE LAYOUT AT A GLANCE

NAME: Cajon Pass

SCALE: HO (1:87.1)

SIZE: 33'-2" x 40'-7"

PROTOTYPE: Atchison, Topeka & Santa Fe; Union Pacific; and Southern Pacific

LOCALE: Southern California

ERA: Early 1950s to early 1960s

STYLE: walkaround

MAINLINE RUN: 475 feet

MINIMUM RADIUS: 30"

MINIMUM TURNOUT: no. 5

MAXIMUM GRADE: 3 percent

BENCHWORK: open grid

HEIGHT: 48" to 59½"

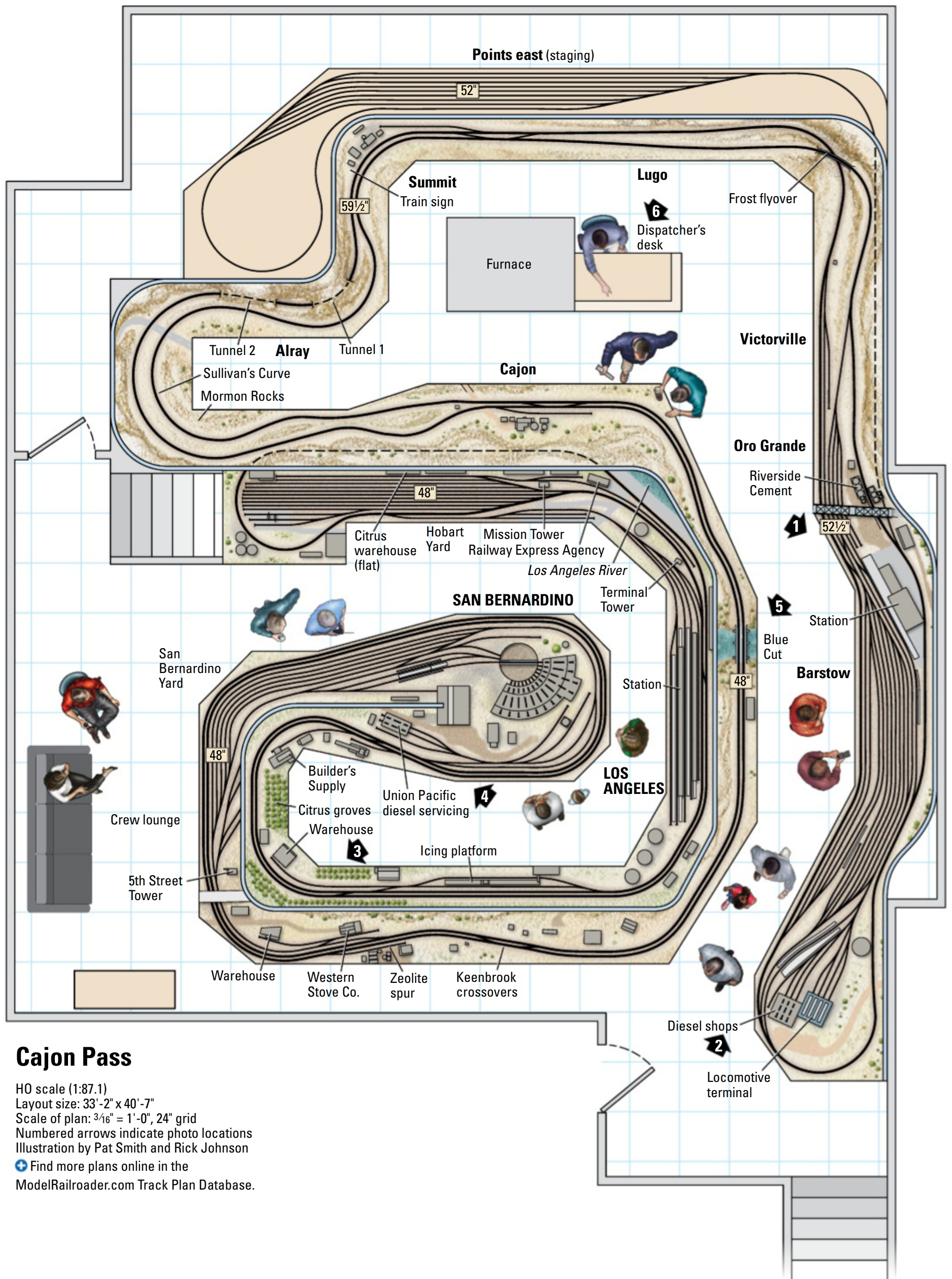
ROADBED: cork

TRACK: Atlas code 100 flextrack

SCENERY: cardboard strips with fabric screening and plaster cloth

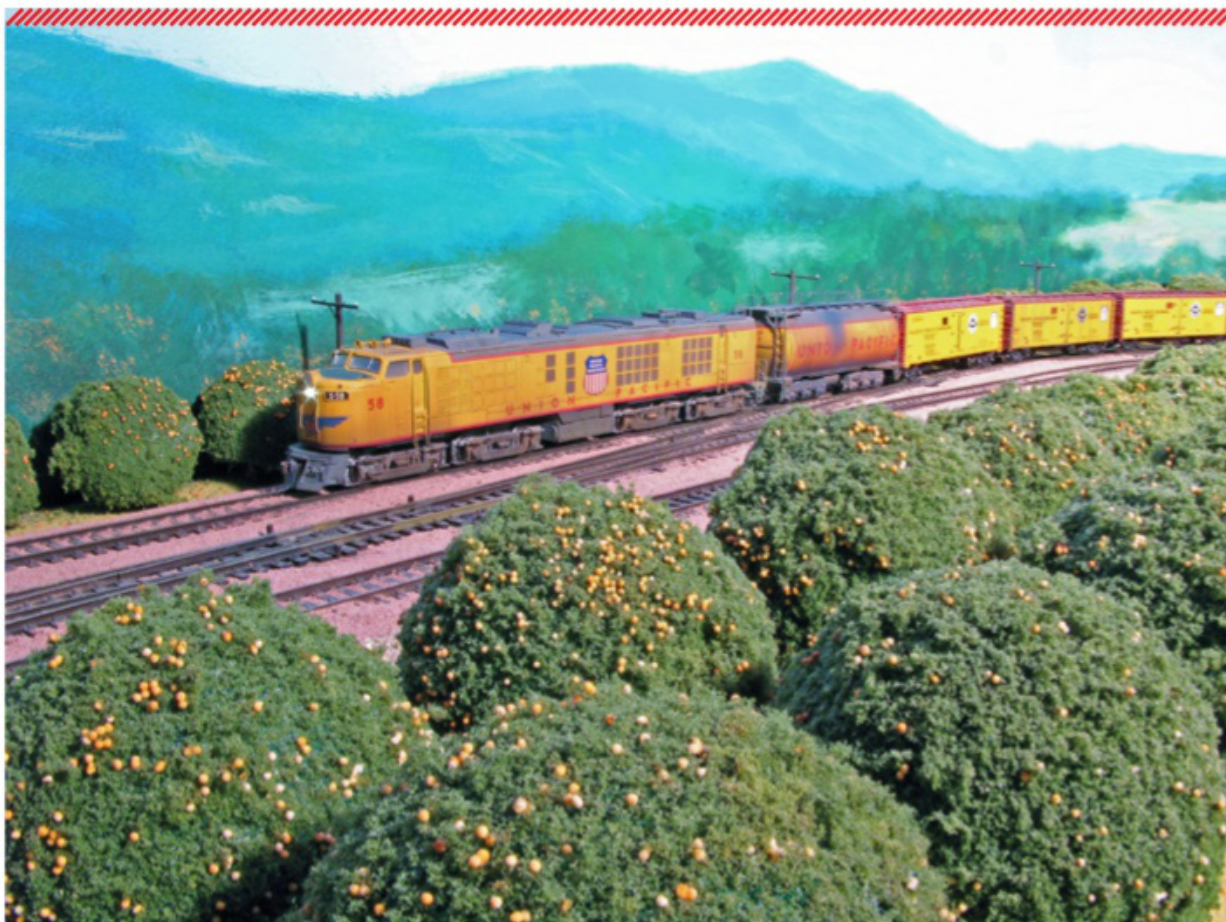
BACKDROP: painted on wallboard and ¼" tempered hardboard

CONTROL: Digitrax Super Chief Digital Command Control



Cajon Pass

HO scale (1:87.1)
 Layout size: 33'-2" x 40'-7"
 Scale of plan: 3/16" = 1'-0", 24" grid
 Numbered arrows indicate photo locations
 Illustration by Pat Smith and Rick Johnson
 Find more plans online in the
 ModelRailroader.com Track Plan Database.



3 Pat populated his citrus groves, a mandatory feature of his Southern California locale, with orange trees made from foam-flocked Styrofoam balls and decked out with Woodland Scenics fruit.

Styrofoam citrus groves

MOST ORANGE TREES are round, symmetrical, and dense in structure, so Pat modeled his out of small Styrofoam balls. He started out by painting the spheres green and adding a dowel for the trunk. After the paint dried, he sprayed them with 3M Super 77 adhesive and sprinkled on Woodland Scenics Light Clump-Foliage. Pat followed that with an additional sprinkling of Woodland Scenics orange fruit. Although it was a messy process, the end result turned out well. – *Dave Rickaby*

The rail the prototype ATSF laid over Cajon Pass was heavy, intended to handle the largest steam locomotives the railroads could muster. Pat represented this by using Atlas code 100 flextrack, installed over Midwest Products cork roadbed. Once it was ballasted and weathered, it doesn't look oversized.

Pat weathered the rail with Krylon spray paints. The first application was flat black, followed by a quick spray of Primer Red. This super-fast method was taught to him by his friend Lynn.

ENGINES AND ROLLING STOCK

There was a lot of freight traffic on this line, but the era Pat models was also the golden age of passenger service. This is provided by the Santa Fe's *El Capitan*, the *Super Chief*, the *Chief*, the *Grand Canyon*, and the *Scout*.

The UP's primary passenger train is the *City of Los Angeles*, but the *City of Las Vegas* also runs on the line. The latter's consist was a GM Aerotrain, which ran in the late 1950s. It was called the "Gambler's Special" by its patrons and the "Crapshooter" by the crews.

Pat's locomotive fleet of both steam and diesel power is indicative of what was used over Cajon Pass from the 1940s up until the early '60s. The locomotives are from Broadway Limited Imports, Athearn Genesis, InterMountain, Atlas, and Kato, among others. All the motive power has DCC decoders installed and are controlled by his 12-throttle Digitrax Super Chief system. Approximately 95 percent of his locomotives have sound decoders, as well.

The fleet of 600 cars comes mostly from InterMountain, Atlas, Kadee,

Athearn, and Roundhouse/Model Die Casting (now part of Athearn). Most of the equipment is weathered.

One of the cars he's most proud of is a brass Key Imports model of a World War II-vintage boxcar that was rebuilt to a caboose with open seating on the roof for armed military personnel. They were assigned to military trains and trains hauling critical cargo during the war.

SCENERY

Pat created his landforms using cardboard drywall shims covered with fabric screening, then topped with a layer of plaster cloth. This was painted an earth color and topped by sand – some of which he brought back from Cajon Pass – and material from Arizona Rock & Mineral. Desert flora was modeled by tufts of grass from Scenic Express. He also used Woodland Scenics ground foam and Clump-Foliage, as well as Scenic Express buffalo grass tufts.

Lynn developed a method for rock carving and painting on his layout, which is where Pat learned the technique. Lynn and fellow modeler Gordy Sauve helped Pat bring the process to his Cajon Pass. It starts by mixing drywall joint compound with water and pouring the mix into large latex molds.

The poured mix was allowed to set for 5 to 10 minutes, until it was just starting to set. At this time they would lift the entire mold and press it onto the fabric screen landform, manipulating it into the desired shape. Then they would wait an additional 5 to 10 minutes before pulling the mold off of the rockwork. Some of the joint compound would crumble, but this created a realistic talus pile at the bottom of the rock formation. Then, they carved the still damp material to blend the edges of the molds.

Pat says that if Lynn taught him anything, it was how to do something quickly but still with high quality. Starting at a 25-foot stretch of unpainted white rocks, Pat envisioned a lengthy barrage of dabbing paint on and filling in detail with shadowing. Lynn asked Pat for a few tubes of acrylic paint, which Pat remembers as Burnt Sienna, Burnt Umber, and Yellow Ochre, as well as a couple of plant spray misters.

Lynn squeezed out a bunch of paint into each bottle, which had been filled



with water, and asked Pat to get him a cup of coffee. When he returned with that cup of coffee, the entire length of rock outcroppings had been painted. Pat swears that the entire process took no more than five minutes. As the paint dried, it started to lighten. When it got to the shade they wanted, Pat sprayed diluted white glue on top of the paint, which sealed the color.

The layout is populated with palm trees from JTT Products and deciduous trees from Scenic Express. There are also several orange groves around the layout. There are no Joshua trees yet, but Pat plans to add them.

There are only a few water areas on his layout. For these, Pat used Woodland Scenics Realistic Water.

STRUCTURES AND FINISHING

Most of the structures on the layout are plastic kits from Walthers. Lynn kit-bashed most of the Walthers structures

for the San Bernardino Shops and the engine facility at Barstow. Along with a few craftsman kits, Lynn also scratch-built the ice platform between Los Angeles and San Bernardino. He also built the buildings for Summit.

Pat's father made some small buildings that are scattered around the layout as well as the bridge for the Frost flyover. Bill Hall from Doll House Miniatures supplied the roundhouse at San Bernardino. Pat built the rest.

Lynn was originally tapped to build the ornate Spanish Renaissance/Classical Revival depot at Barstow, but he passed away before he could. Through Facebook Pat was introduced to Bob Page, a structure builder from Peoria, Ill. Pat supplied Bob with photos and reference materials. Pat says Bob did a superb job on the station, and he's currently working on an 8" to 10" wide cross-section build of the Moorish-style San Bernardino depot. The building will face the tracks away

4 Union Pacific no. 1474, an Electro-Motive Division F7A, leads an eastbound merchandise train past the UP engine facilities at San Bernardino. There's plenty of motive power in town today.

from the aisle, and plexiglass will reveal interior detail on the aisle side.

The backdrops were painted on 1/8" tempered hardboard and directly on the room's drywall by Pat and artist Todd Opperman. Pat met Todd in high school, where Pat says Todd was the best student in art class.

Todd is an award-winning artist whose unique style works well for the backdrop. The paintings aren't as detailed as the foreground modeling but are intended to extend the foreground scenery seamlessly without upstaging it. The trains are the star here.

The fascia, which is painted green, and the front panels below it are also



made from 1/8" tempered hardboard. There's storage under the layout, hidden by black-painted panels.

The layout is illuminated with 4-foot fluorescent light fixtures with daylight tubes. Pat also added six blue can lights that simulate moonlight for night operations. There are yard lights on the layout as well as lights at the depot platforms at Los Angeles and Barstow.

PROTOTYPE OPERATIONS

Pat is working on finalizing his operational scheme. He has enough locomotives and rolling stock to operate trains from the early 1950s to the early '60s. This was a time of transition not only from steam to diesel, but also in color schemes on the diesels, so Pat rosters a wide variety of equipment.

Pat envisions having 12 operators running 20 to 25 trains. These would include the crack passenger trains of the period for both the UP and the Santa Fe and multiple freight trains. The Southern Pacific occasionally operated run-

through trains here as well, so they would be represented. The freight trains include a heavy dose of overhead traffic from Los Angeles to Chicago and vice versa, including express reefer trains. Along with manifest trains, there will be at least two locals working in either direction between L.A. and Barstow. Barstow Yard and San Bernardino Yard will host yard crews.

Most, if not all, of the trains over the pass will use helpers. All Santa Fe trains heading east out of Los Angeles will be required to stop at San Bernardino to have a helper cut into the back of the train. A local switcher will take the caboose off the rear of the trains, then couple it back on behind the helper. (Helpers on passenger trains would typically be attached to the front.) When the train reaches Summit, the helper will cut off and replace the caboose, then travel back to San Bernardino or continue on to Barstow to help a westbound.

Pat typically runs 20- to 24-car trains. Although one operator can run a

5 Pat changes the era of his layout depending on whether he feels like running steam or diesels. Here, Santa Fe no. 3755 leads an eastbound Green Fruit Express over Blue Cut.

train upgrade with a helper on the rear through consisting, he thinks it's more fun and realistic if a separate crew operates the helper locomotives, the way it worked on the prototype railroads.

There are no passing sidings on the main line. In the final design, he found that he didn't have a lot of room for them, but reasoned that this wouldn't be much of an issue on his double-track main unless there was an extremely high volume of traffic. Pat figures at least six trains could be on the main line along with the locals and yard jobs without tying up the railroad.

While the passenger trains will be scheduled, Pat will run all of the Santa Fe and UP trains as extras, even though some of the crack freight trains on the Santa Fe had three-digit alpha codes.

When a freight train is ready, it's given its extra designation and will be able to depart upon orders of the dispatcher. Once the order is given, the train will be cleared to either Summit or Cajon, where there are semaphore style train order boards and, of course, phones.

All westbound trains out of Summit will face a TRAIN board to notify them of any approaching eastbound movements. As on the prototype, the board will display the word TRAIN if there's a train approaching and will be in the flipped position if the track ahead is clear.

The really tricky business for the dispatcher is to keep track of the local, helper, and passenger train movements through all of this, as well. Each crew will carry a clipboard that will carry not only their train orders but the train number, train function, stops, and final destination. Locals will use switch lists for car forwarding.

Pat belongs to a local operators group known as the Fox Valley Shortlines Operating Group. Other members include Gregg Condon, Larry Easton, Dennis Eggert, Emory Luebke, Mike Paltzer, and Joel Weeks, to name a few.

CLOSING THOUGHTS

The part of the hobby that Pat was most surprised to discover he enjoys is the research. He thought it would be tedious, but once he started reading about his prototypes, the more interesting it became. He also enjoys the way the hobby lets him meet so many of his fellow modelers.

Another facet Pat likes about model railroading is that it allows him to develop a lot of different skills. If he tires of wiring, carpentry, scenery, running trains, working on trains, or building structures, he can always move on to one of the others.

Pat's favorite aspects are making scenery, running trains, and overall planning, but the part that really brings out his passion is the power of the locomotives, not only in his models but on the prototype. Imagining what it would've been like standing trackside in the days of big steam or A-B-B-A sets of F units pounding their way across Cajon Pass brings a smile to his face.

Future projects on the layout include upgrading structures, building the wye



6 The dispatcher's desk in Pat's train room includes a magnetic system schematic to track trains and a phone to call train conductors via phones mounted on the fascia around the layout.

Dispatching via phone

PAT HAS BUILT a dispatcher's cubicle in the layout room, complete with a magnetic mainline track schematic and phone. All train locations will be noted on the track schematic by magnets bearing the train designations. Communication between the dispatcher and the crews will be done through the three-digit number phone system located at several points around the layout. Each phone has its own number, and unlike the radio headsets or walkie-talkie radios used in operation, operators won't have to endure "party line" traffic with the other operators. All the phone numbers are posted on a plaque next to each phone. There are 10 phones around the layout, counting the one at the dispatcher's desk and one in the staging room. The system was installed by friend and fellow modeler Mike Phalen. — Dave Rickaby

at Summit, establishing regular operating sessions, building San Bernardino depot, and superdetailing scenes.

Pat's layout was open for tours during the 2010 National Model Railroad Association (NMRA) national convention in Milwaukee. A member of the NMRA, Pat has also hosted numerous open houses during WinnebagoLand Division meets.

Pat's journey has been a lot of fun, and he had a lot of help. He especially wants to thank Lynn Draper, Todd Opperman, Paul Pasowicz, Bob Page, Mike Phalen, and Stephen Priest. He never thought he would see his layout get to this point of completion, and it would've been a big job for one person to do all by himself. **GMR**

MEET PAT SMITH

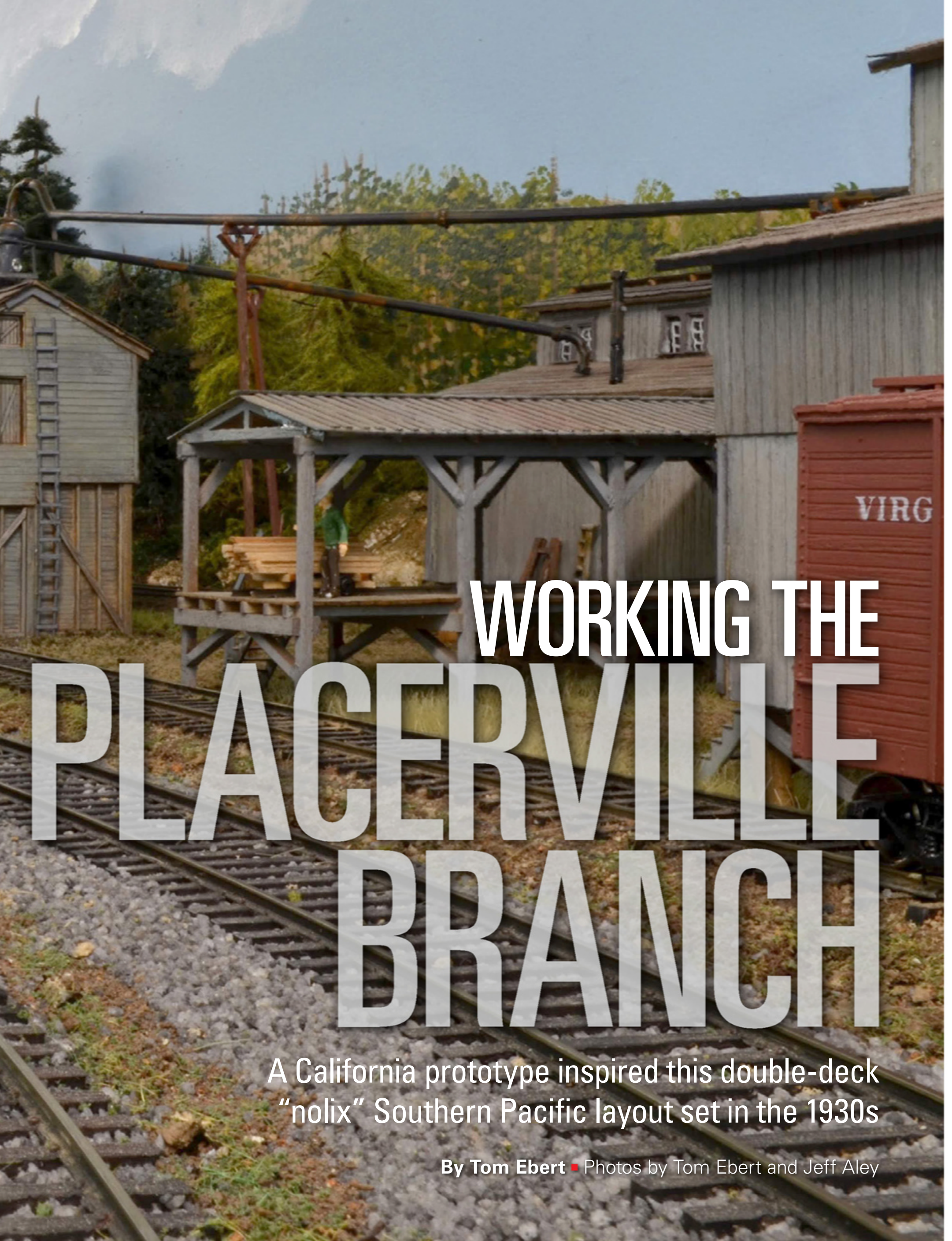
PAT SMITH WAS BORN and raised in Neenah, Wis. He and his wife, Margaret, have a son, Christopher. Formerly owning and operating a dental laboratory and several aviation businesses, he is now semi-retired as a part-time corporate pilot. He's also a scratch golfer. Besides his layout, Pat enjoys garden railroading and his three golden retrievers.





1 The westbound local passes Diamond & Caldor at Diamond Springs on Tom Ebert's HO scale Placerville Branch. Tom designed his layout to accurately model a California branch of the Southern Pacific in the 1930s.

Jeff Aley photo



WORKING THE PLACERVILLE BRANCH

A California prototype inspired this double-deck
“nolix” Southern Pacific layout set in the 1930s

By Tom Ebert ■ Photos by Tom Ebert and Jeff Aley

MY HO SCALE MODEL RAILROAD was designed to re-create the Southern Pacific's branchline operations in and around Placerville, Calif., and show off my passion for structures and scenery. It's housed in an 11 x 27-foot purpose-built room under the rear deck of my home that was previously an open storage area for backyard furniture.

The prototype Placerville Branch had its beginnings in Sacramento, Calif., in the summer of 1852. The Sacramento Valley RR was incorporated to build a rail line from Sacramento to Placerville. Theodore Judah, who would later guide the Central Pacific over Donner Summit, was hired as chief engineer. He surveyed and laid the course for trackage that ran along R Street in Sacramento, terminating 22.7 miles east at Folsom Junction.

Three years later, in 1855, a Sacramento Valley locomotive pulled several cars along R Street in celebration of the beginning of standard gauge railroading in California. It took another 10 years and another railroad company – the Placerville & Sacramento Valley – to extend the rails from Folsom Junction upgrade and east to Shingle Springs, Calif. Finally, in the early spring of 1865, the final leg was completed by the Shingle Springs & Placerville RR Co., extending the branch to Placerville, Calif., a total of 59.9 miles.

THE LAYOUT AT A GLANCE

NAME: The Placerville Branch

SCALE: HO (1:87.1)

SIZE: 11 x 27 feet

PROTOTYPE: Southern Pacific

LOCALE: Northern California foothills

ERA: 1930s

STYLE: double-deck continuous-climb walkaround

MAINLINE RUN: 110 feet

MINIMUM RADIUS: 24"

MINIMUM TURNOUT: no. 6

MAXIMUM GRADE: 2 percent

BENCHWORK: L-girder and open-grid

HEIGHT: 34" (lower staging) to 62"

ROADBED: cork

TRACK: Micro Engineering code 70

SCENERY: plaster cloth over cardboard web

BACKDROP: painted on drywall and tempered hardboard

CONTROL: NCE Digital Command Control

The branch's largest revenue source was the sugar pine forests that lay in the Georgetown Divide and were logged by the Michigan-California Lumber Co. Lumber, along with pear and apple produce of El Dorado County, made the Placerville Branch a profitable part of the Southern Pacific for 85 years.

CONSTRUCTION

My HO scale Placerville Branch is a double-deck point-to-point layout. There's no helix; instead, the track climbs at a steady 2 percent grade, connecting the lower deck's Folsom Yard at 42" with Placerville at 62" on the upper deck.

Construction on the room began in 2010. Walls were built to enclose the space, and the door was hung to swing

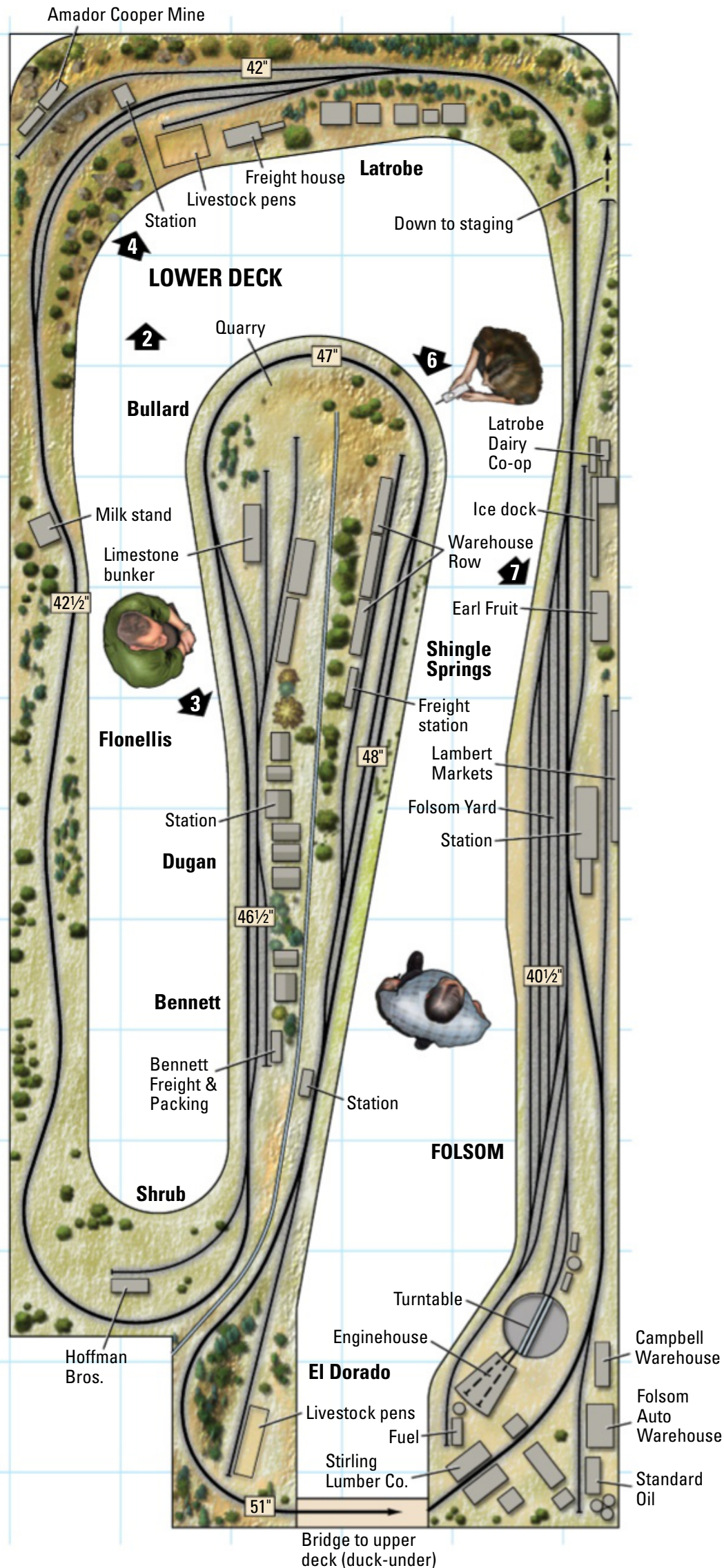
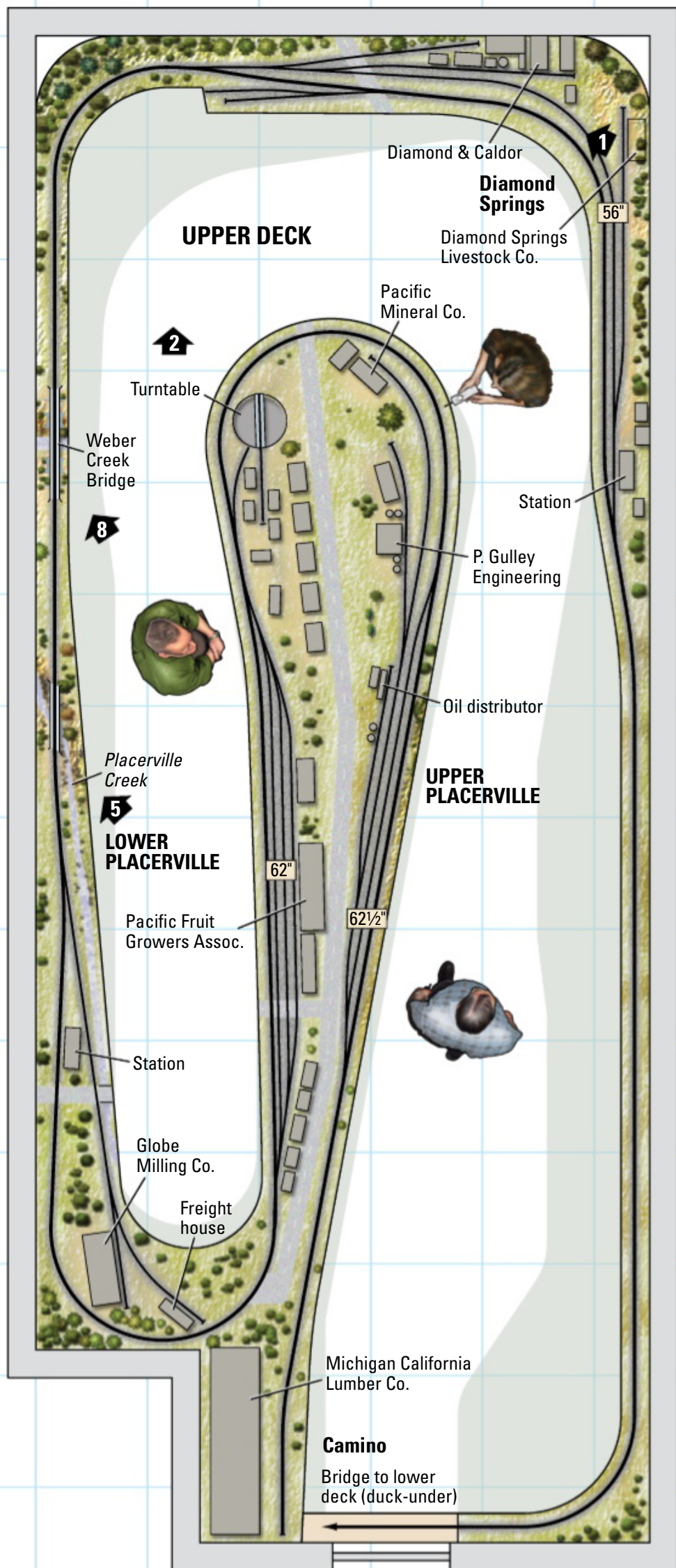
outward to save interior room. Electrical outlets with a dedicated breaker and wiring for a Digital Command Control (DCC) system was installed. A small room air conditioner was mounted through the wall, and shop lights were hung for a well-lit construction zone.

Four years later, I moved those lights directly over the layout and replaced the fluorescent tubes with daylight light-emitting diode (LED) tubes, becoming the source for upper deck lighting. Insulation was added wherever possible. Drywall was installed and the corners coved with 1/8" tempered hardboard.

The original concrete floor was poured on a slope, so I had to establish elevation reference points independent of the floor. A laser level was placed at



2 This view shows part of both decks of the layout, with Latrobe on the lower level and Diamond Springs at right on the upper level. Trains get from one deck to the next by climbing a continuous grade, with no helix. Tom Ebert photo



The Placerville Branch

HO scale (1:87.1)
Room size: 11 x 27 feet
Scale of plan: 5/16" = 1'-0", 24" grid

Numbered arrows indicate photo locations
Illustration by Rick Johnson and Jay Smith
Find more plans online in the
ModelRailroader.com Track Plan Database.

3 Scheduled train No. 218 stops for orders at Dugan. Tom scratchbuilt many structures to match those on the prototype. He plans to make the semaphores work. Jeff Aley photo

the center of the room to mark reference points for benchwork heights. From there I used a bubble level to plot the 2 percent climb between towns.

After that, benchwork construction began in earnest. The roadbed is cork over $\frac{3}{4}$ " furniture grade plywood. Benchwork components were built from $\frac{1}{2}$ " and $\frac{3}{4}$ " plywood. I needed 2 x 4 legs only under the peninsula.

I used a combination of open-grid benchwork on the lower level and a cantilever system on the upper level. The system, designed by fellow modeler Phil Gulley, employs two $\frac{3}{4}$ " plywood support brackets. One serves as a wall anchor, while the other, a triangle, is attached to one side of the anchor using wood glue and brads. The paintable wooden bracket stays out of view even on the narrowest portions of the layout and easily holds the weight of the upper deck.

A duckunder was necessary at the room's entrance to provide a path for the bridge between decks. In a "nolix" design like mine, as the lower deck meets the upper, the space between the two becomes narrower – in this case, a mere 7 inches. I created a scene in this area that's shallow, yet functional, eventually locating a stub siding where the El Dorado Livestock Co. now resides. The main runs through the trees behind it. The double-deck nolix approach allows operators and visitors to enjoy an uninterrupted, fully scenicked view of the Placerville Branch, beginning to end.

With only 11 feet of room width and a peninsula in the middle, I adjusted the width of benchwork components to provide aisle space for passing crew members. The curve at the end of the peninsula has a 24" radius, taking over 4 feet of floor space to install. Aisle space on either side of peninsula would be at a premium, but had to be at least 30 inches on either side. The remaining 2 feet would be reserved for benchwork.

Believable narrow scenes can be created by using forced perspective or, if possible, creating scenes at eye level. For



example, I used a Micro Engineering steel bridge kit to represent the bridge at Weber Creek. Behind and under the bridge I built a raceway for wiring using $\frac{1}{4}$ " plywood, allowing me to build a narrow scenery base off the rear wall, using plaster cloth and Sculptamold. This gave the opportunity to create protruding cliffs under the bridge.

I minimized the visual blocks on the lower deck due to protruding upper decks by pushing back on the upper level and pulling out on the lower deck wherever possible.

On the peninsula, I split the lower deck with a scenic divider, cutting it in half. I left the upper peninsula deck open across its width, using structures as view blocks to split scenes from one side to the other.

On the prototype, the tracks ran straight through the middle of Placerville. My version of the town is on the upper deck of my peninsula, so I bent the line back on itself, using a row of buildings as a view block. The town's 62"

height is eye-level for me, making it easy to see the scene and not what's beyond it.

DESIGN PROCESS

With the room built and benchwork underway, I turned my full attention to finalizing the track plan. I found this task most daunting because I didn't fully understand all the elements necessary for a successful operation-based layout. That took time, but with the help of several knowledgeable friends and after reading a handful of books on model layout design and operation, I got there.

The largest barrier for me, and one that delayed the process by several months, was visualizing the concept of the Placerville Branch. I find it's better to draw with pencil and paper in the initial design phases before jumping to a model railroad Computer-Aided Design (CAD) program. In the beginning, I kept gravitating to the computer and wasted many hours tweaking track alignments, switch length, and the like. There were too many distractions.



4 Ranchers drive their cattle to livestock pens for loading onto stockcars. Cattle are everywhere below Placerville. Jeff Aley photo

Finally, with pencil and paper, I laid out the first of the Layout Design Elements, positioning my towns and signature scenes around the layout in timetable order. [A Layout Design Element, or

LDE, is a visually and operationally recognizable modeled representation of a prototypical location. – *Ed.*] Once I had this element placed, the rest of the track plan started falling into place.

I wanted each town or switching location to have as much visual isolation as possible because I planned a timetable-and-train-order (TTTO) operational scheme. The Placerville branch was “dark,” or unsignaled, territory. I felt that having each station or switching location visually isolated would enhance operators’ experience. In such tight quarters, it’s easy for anyone to turn and peek at what’s coming, but I remind my operators that all you really need is a schedule and understanding of a few basic rules, and the railroad will run just fine.

About a year before I started working on my layout, fellow modeler Phil Gulley asked me for help painting the backdrop on his Union Pacific & Summit County Lines. I showed him some samples of my work on canvas before starting. It was a crash course, but in three or four months I’d painted well over 120 square feet of model railroad backdrop for him. In return, when it came time to lay my code 70 Micro Engineering flextrack and turnouts, Phil came to my rescue and



5 A string of Pacific Fruit Express reefers loaded with boxed pears fresh from the groves at El Dorado heads west over the Placerville Creek bridge. Jeff Aley photo

lent me his track-laying skills. It was a nice trade-off.

I'm fortunate to know a handful of retired SP employees, several of whom worked the branch in its later years. I belong to the Southern Pacific Historical & Technical Society and live about 40 minutes from the Placerville Branch. I visited the El Dorado County Museum, whose home is in Placerville, as well as the California State Railroad Museum (CSRM) library.

To understand the prototype operations of SP's Placerville Branch, I gathered old employee timetables, did research on the web, and scanned documents and photos at CSRM, including Sacramento Division train sheets from the 1930s. Most importantly, I interviewed and asked questions to those who ran the branch in its later years. Armed with all this information, I was able put together plans for scenery, structures, and operation.



6 Camino, Placerville & Lake Tahoe Shay no. 2 works Camino and Upper Placerville. The CP< had trackage rights from SP in this area and performed much of the needed switching duties for them. Jeff Aley photo

THE OPERATIONAL SCHEME

I think a model railroad should represent a time, place, and era; be historically accurate; and yet show some imaginative thinking at the same time. This is so visitors and operators can enjoy a miniature

re-creation of a place and operators can be taken back to a time when branchline operations not only existed, but thrived.

Southern Pacific's Placerville branch stretched from Brighton, Calif., to upper Placerville. Its only signals were lower-



quadrant train-order boards at Shingle Springs and Diamond Springs, although other timetable-designated train order stations existed at Folsom and lower Placerville. There were also numerous flag stops, listed in the employee timetable as “additional stations.”

My operating scheme is to organize and move freight on the branch with car cards and waybills. After several test runs, I was able to develop a credible schedule for my crew on the first east- and westbound freights. The rest are extras, meaning they run on train orders, at the discretion of the dispatcher.

My version of the Placerville Branch is switching intensive. During a 3-hour session, four operators move east- and westbound scheduled freights, an out-and-back between Folsom and Dugan, and a set of extra east- and westbound freights. There are full-time yard and in-town switching duties at Folsom, and the first eastbound to Placerville is given the additional duty of making up the next westbound local coming down hill. Let’s follow some of those trains through a typical day’s duties, starting with train No. 216 out of Folsom.

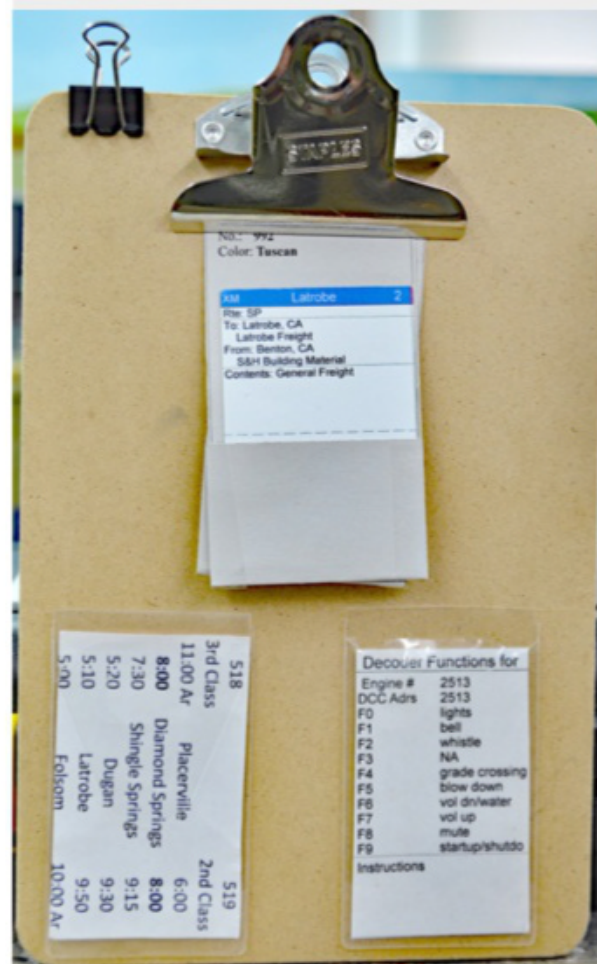
First, Folsom Yard switcher no. 1307 must put together the cars for this train. Once that work is complete, No. 216, typically powered by 2-6-0 Mogul no. 1815, leaves Folsom on clearance and orders, running east upgrade to Latrobe. There it drops off Latrobe and Amador mine traffic on the siding for later set out when it returns on the westbound leg of the trip.

From there, no. 1815 winds uphill through Flonellis, a flag stop where the daily eastbound McKeen motorcar no. 45 has earlier picked up passengers and cans of fresh milk. The passengers ride as far as Placerville, but the milk heads farther upgrade to the El Pino Grande mill in Georgetown Divide.

After no. 1815 passes through Flonellis, it continues to Dugan. Spurs at Dugan branch out to the El Dorado Mine & Mineral at Bullard, a freight and packing house at Bennett, and Hoffman Brothers, a farming operation in Shrub.

After its work at Dugan is done, it returns downhill, with no. 1815 running in reverse. The train stops at Latrobe, where it sets out the cars it dropped here earlier and runs up the sharp grade to

Paperwork



Tom gives his train crews mini clipboards to keep track of their trains’ car cards, waybills, and other paperwork. Tom Ebert photo

I KEEP PAPERWORK needed to operate the Placerville Branch to a minimum. I ask my operators to carry half-size clipboards, all of which have two plastic pockets for the schedule and Digital Command Control locomotive instructions. The clip provides a way to secure car cards and waybills as crews follow their trains across the layout. There are hooks for the clipboards on the lower facias throughout the room so hands can be free to manage switching chores such as sorting car cards and uncoupling.

In one or two years, after I’ve built out all major scenes and structures on the layout, I hope a truer form of operation modeling will go into effect. I will expand outside the present timetable, locomotive cards, and car cards by adding clearance cards and train orders. I also plan to build a hinged writing table near the layout room entrance for writing orders and filling in train sheets. – *Tom Ebert*



7 Southern Pacific 0-8-0 switcher no. 1307 works the Earl Fruit Co. in Folsom. The structure is scratchbuilt. Tom Ebert photo

move loaded copper ore gons out of Amador Copper before making the short run home to Folsom.

Not 10 minutes before train No. 216 left Folsom, scheduled eastbound local No. 218, with 2-8-0 Consolidation no. 2513 in the lead, passes Dugan for work farther up the hill. Its first stop is Shingle Springs, where warehousemen are busy loading and unloading freight from boxcars and flats. Shingle Springs is home to a long spur lined with warehouses serving surrounding communities and businesses. There are four warehouses with room for nine freight cars on the siding.

Upgrade from Shingle Springs sits the El Dorado Livestock Co., where livestock waits to be picked up by westbound local train No. 219. Running rules on the Placerville Branch state that uphill/eastbound trains perform set-outs and downhill/westbound trains perform the pulls. There are runarounds at each switching location, so stub sidings can be worked in either direction.

Once finished with its work in El Dorado, train No. 218 continues upgrade over a fully scenicked 3-inch-wide duck-under connecting El Dorado with Diamond Springs.

Diamond Springs is home to Diamond & Caldor, where east- and westbound freights meet daily in front of the mill. If things have gone right, the westbound out of Placerville has just finished its work in Diamond Springs as the eastbound slides up the main next to it. The westbound will head downhill toward Shingle Springs and El Dorado.

As eastbound No. 218 heads toward Placerville, it crosses the small bridge over Placerville Creek at the slow speed limit of 10 mph. Shortly thereafter, Placerville Station comes into view, and we cross Canal Street and pass behind Globe Milling before drifting into the yard in upper Placerville.

Switching duties await as the eastbound delivers its setouts and begins making up the consist of westbound train No. 221 before heading downhill once again.

NORTHERN CALIFORNIA SCENERY

Scenery is an important ingredient to the Placerville Branch. I'm fortunate to

have access to the entire branch, so I spent time hiking and taking photos where the rail line still exists. Interestingly, most trackage between Folsom and Shingle Springs is intact. Several tourist railroads, including the Placerville & Sacramento Valley RR, are active in the area.

My modeling vision is simple: Create a space where scenery and structures let the visitor know, at first glance, that they're situated in the foothills of Northern California.

My scenery typically gets good grades from visitors. I like to think of it as painting with foam, dirt, and rocks. I try to use varying shades of similar colors, always starting with a real dirt base. When I'm scenicking, I visualize how it looks in the real world and mix my scenery materials to re-create that vision.

I like to experiment and try new methods, colors, and shapes. I work quickly, and it seems to come together when I do so. Finally, I think about the dimensional quality of the scenery. I'm modeling the western slope of the Sierra Nevadas. The grade is constant, and I try to plant as much rock, bushes, and natural debris as possible. Basically, there's no background scenery on the Placerville



MEET TOM EBERT

TOM GREW UP IN BALTIMORE and had early connections to the railroad industry. Both his grandfathers were railroad men, one a freight conductor for the B&O, the other a waybill clerk for the Pennsylvania RR. After serving in the U.S. Navy, he passed on opportunities to work for the Southern Pacific, instead joining the fledgling semiconductor industry. The Placerville Branch is his third and, he says, last model railroad.



8 The eastbound local crosses Weber Creek Bridge west of Lower Placerville. Scenes like this that require the terrain to dip below roadbed level can be tricky to place on a double-deck layout. Tom Ebert photo

Branch. Thanks to the depth of the shelves, it's all close-up, visible, and in the foreground.

My backdrop is hand-painted with acrylics on blue-painted drywall and tempered hardboard.

PROTOTYPICAL STRUCTURES

I want my layout's structures to reflect the prototype. My vision is to re-create as many signature scenes as possible. I scratchbuilt Placerville Station from plans I found at the CSRM. I'm starting to build the precooling room and packing house used by the Placerville Fruit Growers Association. Other signature scenes and structures will also be scratchbuilt. I love to build craftsman kits, so some of them are used, as well.

I created some scenes and structures on the Placerville Branch with limited information on the prototype. For instance, I'd read that bags of copper ore were loaded in horse-drawn wagons in Amador County, south of the branch. The ore was dropped at Latrobe, where it was set out to be picked up by a westbound freight and moved to Sacramento or Roseville for processing. I used some creative imagination, and the Amador copper mine was born.

I researched the rail-served industries on the branch throughout its 85-year history. I place the heyday of the line

between 1930 and 1956. Millions of board-feet of raw sugar pine lumber rolled out of Camino in 40- and 50-foot boxcars. During fruit season, tons of crated pears were shipped to eastern markets. At the top of the hill, the Placerville Fruit Growers Association packed waiting lines of refrigerator cars for shipment to markets out east.

I had many choices for rail-served industries on the Placerville Branch. When choosing them, I didn't confine myself to a specific time period, but used the whole gamut of the line's history to put together what I think is an interesting layout to view and entertaining model railroad to operate.

There are 26 online shippers on my layout, including three livestock companies, two oil distributors, several freight and packing houses, cold storage and ice platforms, milling operations, two quarries, a dairy co-op, as well as wine and whiskey production in Shrub. There was also a stub track and warehouse row in Shingle Springs that was used to provide goods and equipment farther up the hill prior to the line being built out to Placerville in 1865.

THE FUTURE

Passenger service existed on the branch until 1939. McKeen motorcar no. 45 ran daily except Sundays from

Sacramento to Placerville in the early morning hours, returning westbound in the late afternoon. Although I've yet to add passenger service to my operating scheme, eventually operators will drive a McKeen motorcar from Folsom to Placerville and back. Meanwhile, there's plenty of freight to be moved.

There's still much work to do. Future projects include a separate dispatcher's room with a connecting phone system. I also intend to complete stations at Shingle Springs and Diamond Springs with operating lower-quadrant semaphores. My last structure, already in the planning stages, will be the Michigan-California lumber mill in Camino. I'm also slowly replacing out-of-date freight cars and automobiles with versions appropriate to the era.

Since my HO scale Placerville Branch's inception in 2010, I've enjoyed every moment of the process, from the research to the construction and the continual learning that goes along with any modeling project. I've gotten so much enjoyment out of every aspect of building the Placerville Branch, and I love the hobby. It's a lot of fun. **GMR**

TRY MR VIDEO PLUS FOR

FREE!



No Risk • No Exceptions • No Kidding



video
PLUS

Start Your 7 Day Trial Today!

MRVideoPlus.com/Free

Model Scenery & Structure
WINSTON SALEM, NC
Call anytime 24/7
845-797-9533

custom layouts
design build install

www.modelsceneryandstructure.com

MODERN Buildings in HO & N!
(337) 436-8481

www.summit-customcuts.com

Rix Products Pikestuff

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

Rail Scale Models

Your Source For:
• Craftsman Kits
• Laser-Cut Detail Items
• Custom Scale Structures
• Laser-Cutting Services

Items in All Scales

www.Rail-Scale-Models.com

Valley Trains N Hobbies

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

www.valleytrainsnhobbies.com

railroadbooks.biz
has 1,900+ new titles, all at discount!

Domestic shipping FREE over \$63

E-mail for free printable PDF list.
chuck@railroadbooks.biz
www.railroadbooks.biz

International Service.
Book Search.

ORDERS:
U.S. (800) 554-7463
BUSINESS & INTERNATIONAL:
+01 (812) 391-2664

SEND:
\$2 for paper book list.

PO Box 4, Bloomington, IN, 47402-0004 U.S.A.

THE TRAINMASTER, LLC
Detailed Craftsman Kits

www.TheTrainMaster.com

Pursuing Excellence

HO/N/O signs, billboards, laser-cut structures, and much, much more...

Ask for our products at your local hobby shop. Check out our website or request our free catalog.

Blair Line, LLC
PO Box 1136, Carthage, MO 64836
www.blairline.com

Great model railroad products since 1993!

Over 2000 HO scale hand cast pewter super details! Ask for them at your authorized dealer or online!

SS LTD

800-352-1554 & 620-585-2131
www.scale-structures.com

RailroadBackdrops.com

The Hobby's Best Backdrops Period. Beautiful Full Color Photographic Backdrops. All Designs Available In All Scales. Waterproof, Scratch Resistant, Tear Resistant, Washable!

Enter Code Mr100 For 20% Discount

Touch Toggles Perfect
Plan your controls to be the best!

- Your own design comes to life
- Color indicators and touch controls
- Plug together - easy wiring
- No programming - lots of options

See our website for a video introduction
Made in the USA

www.berrethillshop.com

Custom Layout Building

Layout Design

By Lance Mindheim

www.shelflayouts.com
301-404-8164

AffordableModelRailroads.com
GETTING YOUR DREAMS ON TRACK

Professional Layout Design & Construction
We Complete Unfinished And In Progress Layouts. Design, Build, Fix And Complete Any Size or Scale!

We Can Build On Your Site or In Our Shop

MR@AffordableModelRailroads.com
(800) 216-9202

>> Index of Advertisers

We believe that our readers are as important as our advertisers; therefore, we try to handle all reader's complaints promptly and carefully. If, within a reasonable period, you do not receive your merchandise or an adequate reply from an advertiser, please write to us. In your letter detail exactly what you ordered and the amount of money you sent. We will forward your complaint to the advertiser for action. If no action is obtained, we will refuse to accept further advertising from him. Address complaints to: GREAT MODEL RAILROADS Magazine, 21027 Crossroads Circle, P.O. Box 1612, Waukesha, WI 53187.

Affordable Model Railroads.....	97	Rail Scale Models.....	97
Axian Technology.....	7	Railroadbooks.biz.....	97
Berrett Hill Trains.....	97	Rix Products.....	97
Blair Line.....	97	Scale Structures, Ltd.	97
Caboose.....	3	Shelf Layouts Company.....	97
Great Model Railroads Magazine Issues.....	7	Summit USA, LLC.....	97
Model Railroader Books.....	2	The TrainMaster.....	97
Model Scenery & Structure.....	97	Valley Trains N Hobbies.....	97
Nace's Videography LLC.....	3	Woodland Scenics.....	100
NY Central System Hist. Soc., Inc.	7	Yankee Dabbler.....	3

ARKANSAS • Jacksonville

Headquarters for scale hobbies. Models; N-HO-O trains; tools; paint, etc. Discounts & special orders. Open 10-6, closed Sundays and Wednesdays.

RAIL AND SPRUE HOBBIES
1200 John Harden Dr. 501-982-6836

CALIFORNIA • Atascadero

All scales G to Z. Special orders welcome. Midway LA & SF. US 101-US 41, easy access. Open Tue - Sat: 10-5, Sun - Mon: By Appointment. E-mail Anita at: anita@ccctrains.com Web site: www.centralcoasttrains.com

CENTRAL COAST TRAINS
7600 El Camino Real # 3 805-466-1391

CALIFORNIA • Lodi

Z - N - HO - HOn3 - O27 - On30
Locos - Rolling Stock - Digital - Structures
Landscaping Material & more.
www.Rogersrailroadjunction.com
See website for virtual tour.

ROGER'S RAILROAD JUNCTION
105 S. Sacramento St. 209-334-5623

CALIFORNIA • Pasadena

Model rail specialists since 1951.
LGB, Lionel, O, S, On3, HO, HOn3, N, Z.
Complete stock of brass imports, new & used.
Books, tools, structures, detail parts.
Open 7 days. www.thewhistlestop.com

THE ORIGINAL WHISTLE STOP INC
2490 E. Colorado Blvd. 626-796-7791

CALIFORNIA • Roseville (Sacramento)

Exclusively model trains since 1989.
Athearn, Kato, MDC, Lionel, Atlas, LGB,
Märklin, Brass Imports, books, detail parts.
Everyday low prices. Open 7 days.
www.rhobbies.com

RAILROAD HOBBIES
119 Vernon St. 916-782-6067

CALIFORNIA • Santa Clara

100% trains. Discount prices. Super selection.
Monday 9:30am-2:30pm
Tuesday - Saturday 9:30am-6:00pm
Closed Sunday
Dennis Cole E-mail: dcoled4449@att.net

THE TRAIN SHOP
1829 Pruneridge Ave. 95050 408-296-1050

CALIFORNIA • Westminster (Orange Co.)

World Famous
Model/Ty Trains Only
7,000 sq. ft. Super Center
www.arniestrains.com

ARNIE'S MODEL TRAINS
6452 Industry Way 714-893-1015

CALIFORNIA • Yuba City

A full service model train store. Large
inventory, HO, N, O & O27 Tinplate.
Books, videos, collector & gift items.
Repair service. We buy old toy trains.
www.westerndepot.com

THE WESTERN DEPOT
1650 Sierra Ave. #203 530-673-6776

CONNECTICUT • Winsted

A hobby shop for modelers by modelers.
From hard to find to latest & greatest.
Free classes & clinics / multi scales.
Large store of quality products @ fair prices.
Friendly service: www.whitingmills.com

RR MODEL & HOBBY SUPPLY
100 Whiting Street 860-379-3383

CONNECTICUT • Wolcott

Exclusively brass model trains.
Primarily HO Scale. Buy & Consign.
By appointment Mon - Fri 9 - 4
support@thecaboose.com
www.thecaboose.com

THE CABOOSE
5 Mohawk Drive 203-879-9797

DELAWARE • Ocean View

No sales tax at the Delaware seashore.
Lionel new & used . . . also Atlas, Bachmann,
MTH. We buy used trains. Auth. Lionel repairs.
Large inventory of used HO trains.
Open Tues - Sat 11-4:30, Closed Sun & Mon

SEASIDE HOBBIES
15 Daisey Ave. 302-539-1601

FLORIDA • Cape Canaveral

Lionel, American Flyer, MTH
on the internet.
www.traincity.com
www.choochooauctions.com

TRAIN CITY, INC. - JOHN SIEGEL
387 Imperial Blvd., Ste. 2 321-799-4005

FLORIDA • Fort Myers

N, HO, O scale model railroading. Paint,
tools, scenery, accessories & plastic models.
Mon - Sat 10:00am-6:00pm; Closed Sunday
www.victorymodels.com

VICTORY MODELS & TRAINS
12951 Metro Parkway 239-332-0422

FLORIDA • Melbourne

The Space Coast's Model Train Shop.
Z thru G scales. N scale our specialty!
Digitrax, Kato, Lionel & Walther's Dealer.
Atlas, IM, BWL, Piko, LGB & Rokuhan.
Mon-Sat 10am-5pm Email: trftrains@cfl.rr.com

TRF TRAINS & MNT HOBBIES
2715 N. Harbor City Blvd., #10/11 321-241-4997

GEORGIA • Atlanta (Riverdale)

Atlanta's Finest Shop for serious modelers!
Quality items in all scales at fair prices.
Service - Repairs. Over 37 years of quality
service. Close to all Interstate Hwys.
8-min. from Atlanta Airport. Tue - Sat 10-5:30

RIVERDALE STATION
6632 Hwy. 85, Riverdale Plaza 770-991-6085

ILLINOIS • Des Plaines

N, HO, S, O, G Std. & Narrow gauge too.
Lots of scratchbuilding parts and stuff too.
Brass, books & DVDs. Close to O'Hare.
M, T, W, F 10-6; Th 10-8; Sat 9:30-5; Sun 11-5
Web Store: www.desplaineshobbies.com

DES PLAINES HOBBIES
1524 Lee St. (Mannheim Rd.) 847-297-2118

ILLINOIS • Downers Grove

HO and N Scale Model Trains and Accessories
Two Blocks South of Metra Station
at Maple Ave.
www.timberlinetrainshop.com

TIMBERLINE TRAIN SHOP, LTD.
5228 Main St. 630-324-6136

ILLINOIS • Geneseo

Scale Trains, Models & Hobby Supplies
Specializing in Midwest Roads
Visit our website at GRHobbies.com
or call for directions and hours.

GREEN RIVER HOBBIES
119 W. Exchange St. 309-944-2620

ILLINOIS • Marion

Full-Line Hobby Shop.
HO & N scale locomotives, scenery,
plastic models, R/C, tools, paints, and more.
Open Tue - Fri 1:30-6:30pm, Sat 10am-4pm

CHUCK'S DEPOT
1913 W. Rendelman St. P/F 618-993-9179

KANSAS • Overland Park (KC Area)

O, S, HO, N, Z & G Scale
Lionel, MTH, A/F, Märklin, LGB & more!
New, Used & Vintage. Extensive scenery line.
Repair, custom work & layouts.
www.fredtrainshop.com

FRED'S TRAIN SHOP
9322 West 87th St. 913-383-3500

MARYLAND • Annapolis

If we don't have it, we'll get it! LGB,
Woodland Scenics, Walther's Dealer, PIKO,
Lionel, Bachmann, Spectrum.
Mon - Sat 10-6. Full line Kalmbach!
shopstarhobby@yahoo.com

STAR HOBBY
1564 Whitehall Rd. 410-349-4290/4291

MASSACHUSETTS • Malden

America's largest Lionel Dealer. We also carry
a complete line of G scale, O gauge, HO and
N scale model trains. Visit our 3600 sq. ft.
showroom. Website: www.charlesro.com

CHARLES RO SUPPLY CO
662 CROSS ST 781-321-0090

MICHIGAN • Fraser

Full line hobby shop.
Open Mon - Fri 10-8, Sat 10-6, Sun 12-5
www.pdhobbyshop.com

P & D HOBBY SHOP
31280 Groesbeck Hwy. 586-296-6116

MICHIGAN • Traverse City

Let your imagination run wild!
Z to G, Lionel, scenery, tools,
structures, scratchbuilding supplies,
special orders, ships, armor, cars, more...

TRAINS & THINGS HOBBIES
210 East Front St. 231-947-1353

MONTANA • Billings

Model railroading headquarters for the
Northern Rockies. HO, HOn3 & N scale. Kits,
parts, tools, books. Tues-Fri 10-5:30; Sat 10-3.
Closed Sun & Mon. trains28@jimsjunction.com

JIM'S JUNCTION
811-B 16th St. West 406-259-5354

NEBRASKA • Deshler

Largest HO/N scale inventory from Denver to
Chicago. Stop in and say WOW! All major
brands plus books, videos, tools & scenery.
Mon-Fri 9-6, Sat 9-3.
www.springcreekmodeltrains.com

SPRING CREEK MODEL TRAINS, LLC
304 E. Bryson Ave. 402-365-7628

NEVADA • Las Vegas

While in Las Vegas,
check out our train selection.
Close to the Las Vegas strip.
Hours: Mon - Fri 10-7, Sat 10-6, Sun Noon-5.

HOBBYTOWN USA
4590 W. Sahara Ave., #103 702-889-9554

NEW JERSEY • Bellmawr

A complete Train Store. Repairs & Decoders
Installed, N, HO, S, O. DCC Specialists
Authorized Dealer. Digitrax ESU-Loksound,
NCE Soundtraxx, TCS.
www.yankeedabbler.com

YANKEE DABBLER INC
101 W KINGS HWY, 08031 856-312-8084

NEW JERSEY • Piscataway

Serving hobbyists since 1933.
Large selection of HO, N, & O scale
Railroad books - complete repair service
www.themodelrailroadshop.com

MODEL RAILROAD SHOP
290 Vail Ave 732-968-5696

OREGON • Beaverton

Complete full line hobby shop.
Z, N, HO, O, Lionel, and LGB.
Open Mon - Fri 10-8, Sat 10-5, Sun 12-5.

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

OREGON • Portland

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

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

OREGON • Portland

Your complete model railroad store.
Gauges Z through G.
Mon - Fri 10-6, Sat 10-5, Closed Sunday
www.wsor.com

WHISTLE STOP TRAINS
11724 SE DIVISION ST 503-761-1822

PENNSYLVANIA • Blue Ridge Summit

The Exclusive model railroad store.
From N to G, we stock it all.
OPEN 7 days a week.
Hours change seasonally so please call
or see website. www.trainpops.com
trainpopsattic@gmail.com

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

PENNSYLVANIA • Bristol

We carry most major brands and accessories
for N - G gauge. SELL - BUY - REPAIR
Hours change seasonally so please call
or see website. www.trainpops.com
trainpopsattic@gmail.com

TRAINPOPS ATTIC
400 Mill St. 215-788-2014

PENNSYLVANIA • Broomall

Lionel, American Flyer, LGB, Atlas & MTH
HO, N, ON30, Standard, O & S gauges
bought, sold & traded. Auth. service station.
Mon, Wed, Fri 10-9, Tue & Thu 10-7, Sat 10-5
www.nstrains.com

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

PENNSYLVANIA • Montoursville

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

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

PENNSYLVANIA • Strasburg

From trains to diacast to scenery, everything
for the layout builder. Open 7 days a week.
N, HO, O, Lionel, LGB. Buy, sell, trade used
trains. Located adjacent to the
Choo Choo Barn. www.etrainshop.com

STRASBURG TRAIN SHOP
226 Gap Road 717-687-7911

RHODE ISLAND • Warwick

HO trains & acces., detail parts, plastic &
craftsperson kits. Hobby supplies, tools.
Tues - Fri noon-6pm, Sat 10am-5pm
1/2 mile west of airport
E-mail: aahobbies@gmail.com

A.A. HOBBIES, INC.
655 Jefferson Blvd. 401-737-7111

SOUTH CAROLINA • West Columbia

All scales, all major brands of
model railroad equipment.
We buy & sell used Lionel trains.
Open daily 10-6. Closed Sun.

NEW BROOKLAND RR & HOBBY SHOP
405 State Street 803-791-3958

TEXAS • Athens

Specializing in HO, HOn3 & Brass. Blackstone
Tsunami • InterMountain • Decoder installs
Kadee • Digitrax Dealer • Walther's • Coach Yard
-----WE BUY HOn3-----
jack@harrishobbies.com www.harrishobbies.com

HARRIS HOBBIES
9323 County Rd 1127 903-489-2646

TEXAS • Dallas (Addison)

Great discounts on thousands of G to Z scale
items. NCE & Digitrax dealer.
Monday - Saturday 10-6

DISCOUNT MODEL TRAINS
4641 Ratliff Lane 972-931-8135

TEXAS • Houston

HO & N, Lionel trains. Complete line of
plastic kits, military, architectural supplies,
paints and tools. Open Mon-Fri 11am-6pm,
Sat 10am-5pm, Sun 12pm-5pm.
www.gandgmodelshop.com

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

TEXAS • Houston

All trains, all scales. Magazines, Books, Videos, Repairs,
Brass, Consignments. Discount program, will ship.
papabenstrains@gmail.com M,Tu,Th & F 10-6; W 10-7;
Sat 10-5; Closed Sun. Open Sunday's Oct, Nov and Dec.
Major Credit Cards. www.papabens.com

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

TEXAS • San Antonio

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

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

WISCONSIN • Green Bay

Exclusively trains, specializing in DCC, N, G,
& HO. DCC installation and award winning
custom painting and building available.
WWW.ENGINEHOUSESERVICES.COM

ENGINEHOUSE SERVICES, LLC
2737 N. Packerland Dr. 2H 920-490-4839

WISCONSIN • Milwaukee

Proudly Serving Model Railroaders Since 1932.
Everything you need to build a great model
railroad. Operating layout, historical display,
friendly service, we will be happy to see you!
1-800-487-2467 or walthers.com

WALTHERS SHOWROOM
5619 W. Florist Avenue 414-461-1050

WISCONSIN • Waukesha (Pewaukee)

Märklin • Lionel • MTH • AF • LGB • Z to G
• buildings • scenery • detail parts • books
• scratchbuilding supplies • special orders •
NMRA discounts • Mon - Fri 11-8 • Sat 10-5
Sun 12-5. www.hiawathahobbies.com

JETCO'S HIAWATHA HOBBIES
2026 Silvernail Rd. 262-544-4131

CANADA-BC • Vancouver

Large selection of model RR supplies includ-
ing Min. by Eric, Athearn/MDC, Atlas, Peco,
Digitrax, Rapido, SoundTraxx, brass, etc.
Special orders. www.central-hobbies.com
Open 11-6, Friday til 9. Closed Sundays.

CENTRAL HOBBIES
2825 Grandview Hwy. 604-431-0771

CANADA-ON • London

Complete Canadian trains & more N, HO, OO,
G, Athearn, Hornby, Peco, Walther's. Special
orders, Plastic kits, parts, supplies, books.
Mon - Fri 10-6, Sat 9-5.
sales@rrhobby.ca www.rrhobby.ca

BROUGHDALE HOBBY
1444 Glenora Dr 518-434-0600

CANADA-ON • Paris

Full line hobby shop. Large stock N, HO.
Special orders weekly, all scales.
All accessories, scenery and supplies.
www.parisjunctionhobbies.com

PARIS JUNCTION HOBBIES
300 Grand River St. N. 519-442-5800

GERMANY • KAARST, 41564

Europe's best known address for US
Railroads. We carry N, HO & G scale for all
road names, Atlas to Walther's.
Mon - Fri 10-6:30, Sat 10-2.
Visit us online at www.aat-net.de

ALL AMERICAN TRAINS
Kaarst, 41564 Email: info@aat-net.de

SWITZERLAND • Kilchberg, Zurich

Specializing in American models since 1977.
Huge selection of consignment brass models.
Open Sat 13.00-17.00.
Fax: 011-41-44-715-3660.
Web: www.trainmaster.ch

TRAINMASTER BY WERNER MEER
3 Hochweidstrasse 011-41-44-715-3666

Model MAGAZINE
Railroader



Start your next layout on the right track!

Subscribe to *Model Railroader* today!

Go to

<http://subscribe.trains.com/help>

A sense of purpose

By Steven Otte ■ Photo by Tom Klimoski



WHAT'S THE PURPOSE of your model railroad?

I'm not talking about why you built a layout, but about the purpose of the railroad itself. Is it an urban industrial line, designed to switch industries? A bridge line, meant to transfer trains from one railroad to another? Or is it a section of main line, built to let you watch trains go by? All of these are equally prototypical. But which is most important to you has implications for the design of your layout.

In the introduction to this issue on page 6, I said that being designed for prototypical operation is one of the factors that helps to make a model railroad great. But what "prototypical operation" means depends on your railroad's purpose. Take a look at Pat Smith's Cajon Pass track plan on page 81. The HO scale railroad has enough yard space, industrial sidings, and staging to support local switching. But the operational focus of the railroad is moving passenger and freight trains up and over the pass from Los Angeles to Barstow and vice-versa, just like the prototype did.

Compare Clark Propst's HO scale Story City branch, shown on page 11. This railroad is all about the locals; there are no through trains on this stub-ended branch. Every car that leaves staging has a destination on the layout. Clark's Minneapolis & St. Louis is dedicated to serving its industries just like the prototype did.

Two different approaches, both prototypical. What's yours? **GMR**

Tom Klimoski's son Ryan operates on Tom's HO scale model railroad. Even a compact layout, like the 9'-2" x 10'-6" Georgia Northeastern, can be designed to operate prototypically.