

Model SPECIAL ISSUE
Railroader

NEW DESIGN IDEAS FOR N, HO, S & O SCALES

Annual 2019

Model Railroad Planning

2019

13 inspiring
all new
planning
stories

Tips on design, construction,
and model railroad operation

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railroading
in a bedroom
and a half** p.10

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Capturing a sense of
time and place is the
concept that drives Ken
Karlewicz's Delaware &
Hudson layout. See p.10.



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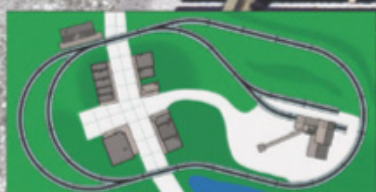
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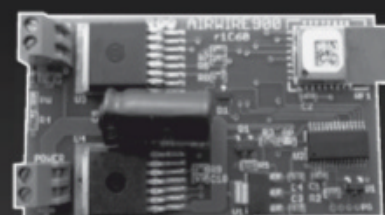
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Model Railroad Planning

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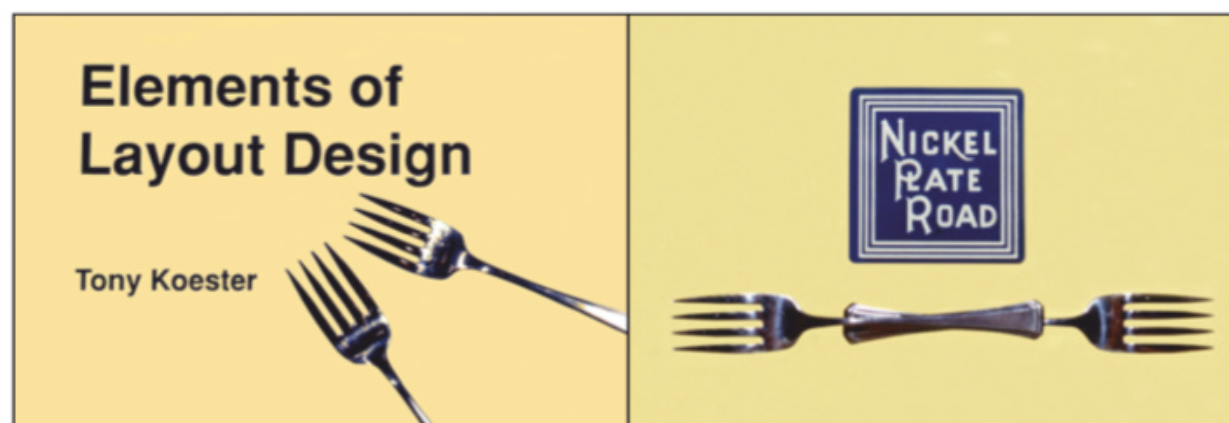
MODEL RAILROAD PLANNING (ISSN 1086-5586) is published annually by Kalmbach Media Co., 21027 Crossroads Circle, P.O. Box 1612, Waukesha, WI 53187-1612.

Single Copy Price: \$9.99 U.S., \$10.99 Canadian, payable in U.S. funds. (Canadian price includes GST.) BN 12271 3209 RT. Expedited delivery available for additional \$2.50 domestic and Canadian, \$6 foreign. ©2019, Kalmbach Media Co. All rights reserved. Printed in USA.



Editorial

All you need to know, in two slides



These two slides from the editor's clinic on layout design show how a pair of forks with the handles overlapping can represent the basic design of almost any model railroad. Modeling a branch? Use only one fork!

Over the years, I've used a pair of slides (above) in some of my clinics to make the point that you can design the basic plan for any model railroad in a few seconds using a common household utensil: a fork. The idea is that a railroad has to come from Somewhere and go to Somewhere Else, with Somewhere and Somewhere Else represented by the tines of the fork – often passive staging or active fiddle yards.

If you're modeling a stub-end short or branch line, you can get by with a single fork, although it, too, should connect with the rail network at a junction with a trunk line. So maybe you better swipe another fork from the kitchen drawer and T it off the first two.

If you want a continuous-run feature, use old forks (or at least don't tell your spouse who gave you this idea), as you'll want to bend them into a U-shape so the tines touch, thus forming a connection.

The handles of the forks represent what our friends in the U.K. call the twisty bits. That's where the idea of Layout Design Elements – models of visually and operationally recognizable segments of prototype railroads – comes to our aid. Simply find some related prototype locations that are appealing and that complement your design goals, and then turn to plagiarism. What worked for the professionals should work for us, too, even if our initial understanding of the purpose for each track is incomplete.

So layout planning is reduced to staging plus LDEs plus staging. It's really not much more complicated than that.

Exploring new horizons (or not)

Brooks Stover's decision to once again model the same prototype after he and his wife decided to build a smaller home with a smaller basement is noteworthy. As he states in his article, "Same railroad in a smaller space" (page 38), he did enough due diligence to determine that he didn't want to downsize the scale as well as the layout. And his growing familiarity with the Buffalo Creek & Gauley allowed him to do an even better job modeling a key town than he had done on the larger layout.

In so doing, he passed up the chance to explore new horizons. In all probability, he probably also dodged a few bullets. Each scale and gauge has a rather steep learning curve, and such tests of determination are perhaps best reserved for those who are in the first two-thirds of their expected lifespan.

That said, see Michael George's commentary, "A multi-deck railroad in O scale!" (page 18), on his switch not only to O scale but to O fine scale, or Proto:48. I've noticed that more than a few veteran HO modelers are exploring or have switched to a larger scale as they seek new challenges or models that are easier on aging eyes and hands. In fact, I recently finished an O scale project railroad for a series in *Model Railroader* (coming in 2020) that is based on a single Hoosier town.

It's an example of knowing what to do while not having a clue as to how to do it. I had thoroughly researched the town back in the early 1970s and

made several visits since, but my knowledge of what is available and from whom in 1/4" scale was sorely lacking.

Fortunately, magazine editors are paid not to know everything but to know who does. Several close friends, and many new ones, came to my aid. That in itself was worth the trials and tribulations of working outside of my comfort zone. False starts cost time and money, but that's part of the process, too. As long as the rewards outweigh the costs, the task is worth the effort.

Brooks took one road to success, and others – including me – are exploring different paths. As long as we all enjoy the journey, I think we've chosen well.

Last runs

Model Railroad Planning contributor John Flann died unexpectedly last March. John provided insights to the wealth of modeling potential to be found in his former home in the U.K. The night before John's passing, he and son Nicholas had discussed his new project, Hintock St. Loe. Nicholas forwarded a snapshot of the layout as John left it.

"Dad was very proud of his published articles," Nicholas said. "Thanks for working with him over the years." We're delighted John shared his knowledge of British railroading with us.

I was also deeply saddened to learn that Bob Lucas, builder of the superbly conceived and crafted HO edition of Ohio's Akron, Canton & Youngstown ("Modeling an Ohio classic," page 30), lost a long battle with cancer in June. I recently had the privilege of visiting with Bob and his close friend and photographer, Chris Lantz, and was impressed with what he'd accomplished in his Akron basement despite spending the colder months in Texas.

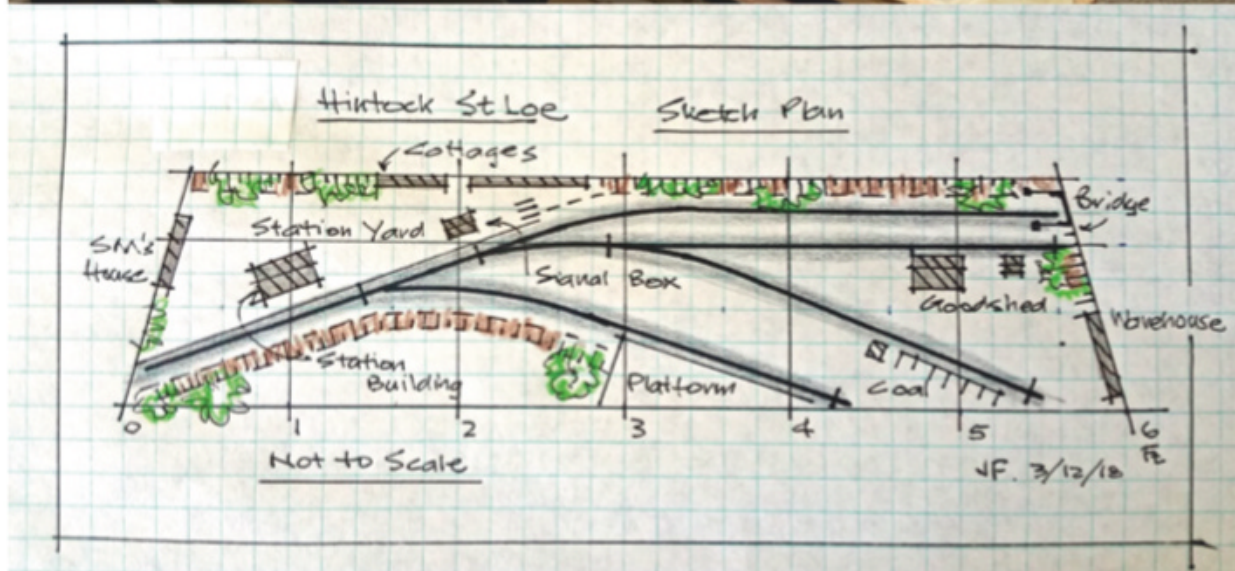
Finer gentlemen I have never met.

As the hobby ages, we'll continue to lose some of those modelers we've come to deeply admire for their pioneering efforts to expand the hobby's horizons. Fortunately, I continue to meet a cadre of younger modelers who are doing equally outstanding work. With their inspiration and guidance, I think we'll do just fine.

Tony



The Dundon Shops scene on Brooks Stover's original scale Buffalo Creek & Gauley suggests why he chose to model the same railroad in the same scale when he downsized. Alas, this area didn't make the cut. Brooks Stover photo



John Flann's latest project, Hintock St. Loe, was photographed by son Nicholas just as he left it. John enjoyed model railroading to his very last day. Nicholas Flann photo

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4. Using track "power" to carry "control" signal
5. Reliance on a system that does not scale

5 tips on model railroad operations

1. De-link locomotive "control" from "power"
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4. Reliable, widely accepted standards i.e. WiFi
5. **KEEP IT SIMPLE**

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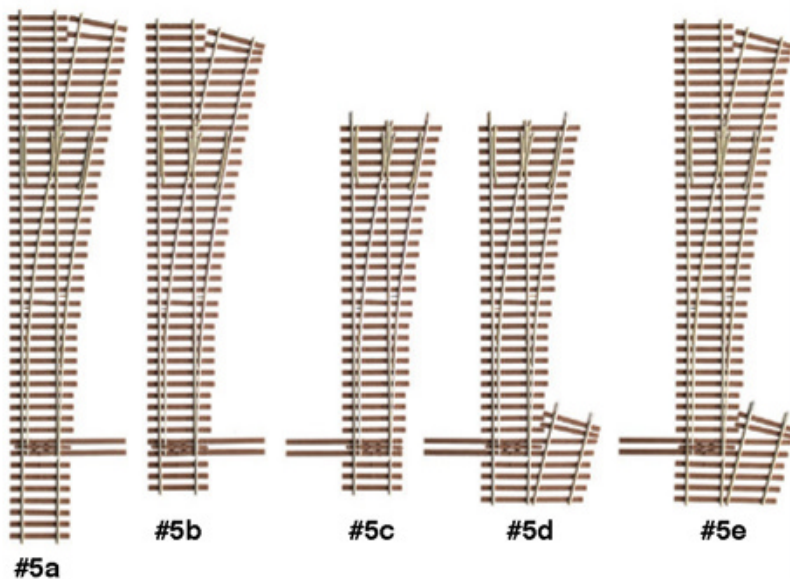
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Modeling a sense of place

Big-time railroading in a bedroom and a half

By Ken Karlewicz//Photos by the author

It's just after 7 a.m. as Ernie Miller walks through Frog Hollow to another shift at the Agway in nearby Central Bridge, N.Y., on Ken Karlewicz's HO scale Delaware & Hudson Second Subdivision. In the background, northbound Train WR-1, led by ex-Reading 7418, meets Train RPPY behind Alco C-424 no. 452.



Decades before I became seriously interested in building a scale model railroad, I spent a number of years pursuing my passion for railfan photography. Over the years, I had come to see photography as a means of self-expression.

In model railroading I've found an equally powerful art form with which to express myself. I've learned that to capture a sense of place in my model scenes or photographs, I need to truly "feel" those scenes or places.

Living in the lower Hudson Valley of New York, much of my rail and photographic explorations have focused on upstate New York and New England. Often the image I was after necessitated a friendly knock on the door of the resident to request permission to shoot a photo from the vantage point of his or her property.

When many years later the model railroading bug bit, I knew exactly what I wanted to do.

If I could go back in time

Perhaps it was the childhood visits to my Uncle Eddie's home in Schenectady, N.Y., that helped foster my affection for the beautiful landscapes of upstate New York. I can still remember the sweet smell of the cornfields from the hammock out back.

I chose to model late summer of 1979 or 1980 between Worcester and Central Bridge, N.Y., on the Albany & Susquehanna Division – the Second Sub – of the Delaware & Hudson (D&H). The idea of heavily weathered Alcos hauling hot symbol freights past beautiful shale outcroppings and through rural upstate New York mill towns was the perfect inspiration needed to set my creativity ablaze.

The variety of patched paint schemes during this era from the Lehigh & Hudson River, Lehigh Valley, and Reading Co., as well as the lightning-striped Alcos, General Electrics, and Electro-Motive Division diesels of the D&H roster, would provide an array of motive power combinations that was sure to keep things interesting.

Although I didn't railfan the Schoharie Valley or see and hear the notorious Alco-powered assaults on Richmondville Hill during this time, I'd come to know the area a bit better when the New York, Susquehanna & Western became the designated operator of the line in the late 1980s. As I became more serious about planning my model railroad, a number of field trips to the region proved helpful in developing a more intimate feel for the railroad and its surroundings.



2 Alco RS-3 no. 4103 arrives at Schoharie Junction with the morning local as a freight led by U23B no. 2313 moves north toward Central Bridge. The branch is a sure bet for seeing RS-3s at 10 mph, and today's two-car Mill Job is no exception.



3 The July 4, 1979, festivities in Cobleskill, N.Y., have yet to get underway, but the real parade is already unfolding: Alco RS-11 nos. 5005 and 5009 make a grand display as they hold on Main 2 for the passing of another Alco consist heading south. Ken shot the backdrop photos in Cobleskill on July 4, 2017.

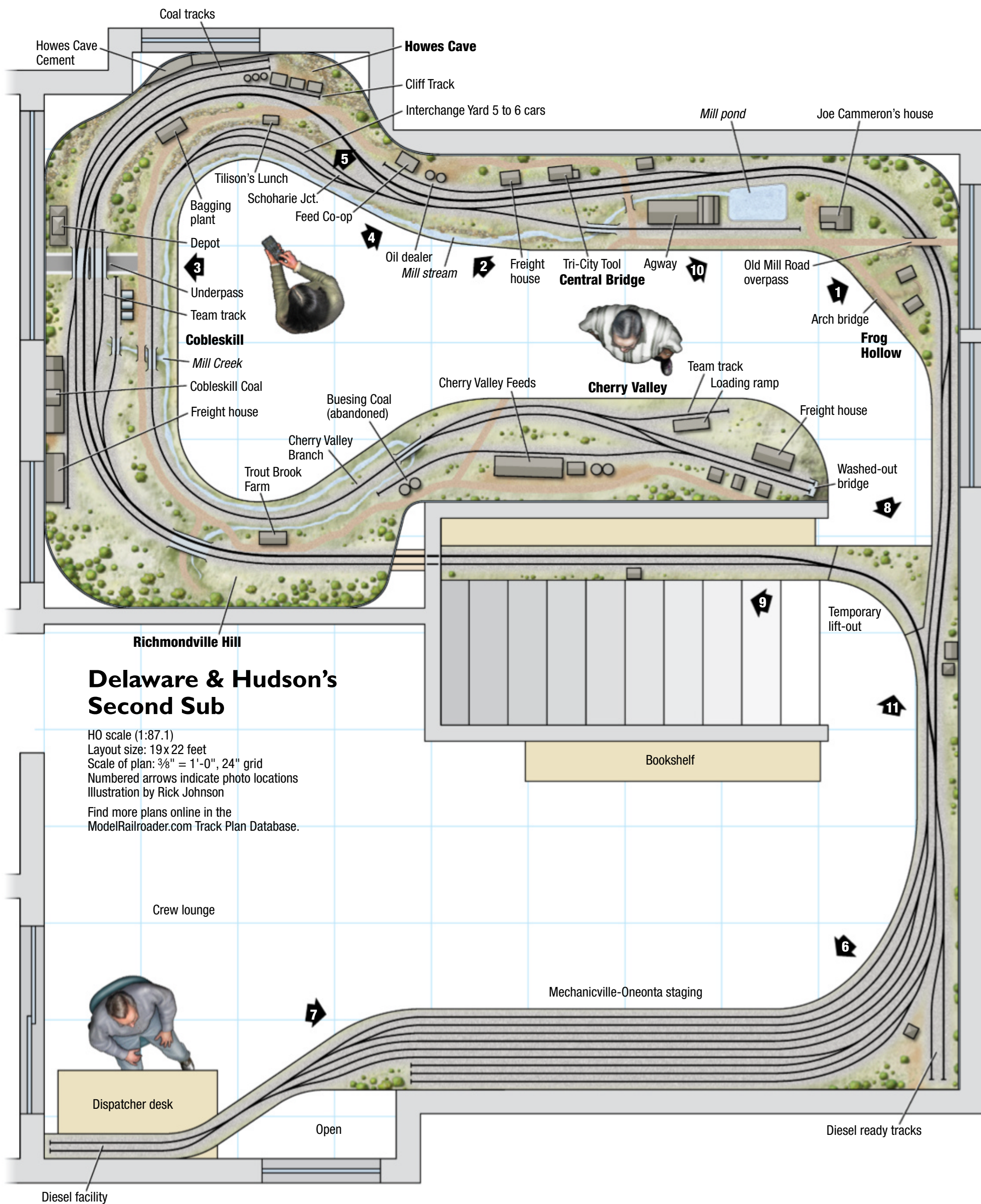
The time machine upstairs

I didn't have a lot of room for a model railroad, or so I thought – just a bedroom and a half upstairs in our modest Cape Cod. However, by carefully managing that resource, I felt I had enough space. The idea wasn't to model the prototype exactly, but to have a little slice of HO landscape that would look and feel like D&H country.

At this stage of my life, I realized that taking 10 to 15 years to build a railroad wasn't an option for me. Moreover, I was eager to enjoy the social and therapeutic benefits of having an actual working railroad. To save time without sacrificing quality, I therefore enlisted the talents of my friend and veteran layout builder Don Buesing to help me get started.

The layout at a glance

Name: Delaware & Hudson
Scale: HO (1:87.1)
Size: 18 x 19 feet
Prototype: Delaware & Hudson
Locale: upstate New York
Era: 1979 or 1980
Style: around-the-walls
Mainline run: 50 feet
Minimum radius: 37" (main), 20" elsewhere
Minimum turnout: no. 5
Maximum grade: 1 percent
Train length: 18 to 20 cars
Benchwork: L-girder cantilevered from wall
Height: 53"
Roadbed: Woodland Scenics Trackbed
Track: codes 55, 70, and 83 flextrack
Scenery: "ground goop" over extruded-foam insulation board
Backdrop: photos of actual locations in upstate New York
Control: NCE DCC



An influential encounter

Let me share with you an encounter I had with Kit Lukas, an 82-year-old client and filmmaker who had been a program director for the Public Broadcasting System in New York. I had professional reasons to be at his home, and we were soon enjoying an involved conversation about art. I then showed him some photos of what I was doing in HO scale, and he was amazed. "This is a piece of art you're making!" he exclaimed. "Could I possibly see it?"

I invited Kit to visit my railroad, and he was intrigued by everything from the scenery and lighting to the NCE throttle I handed to him so he could run the train that was staged and idling in the yard. As we stood near the rail siding of my Agway facility in Central Bridge and we talked about the operating crew, he exclaimed, "I've got to make a film about this!"

Soon I was being interviewed on camera about the art and science of model railroading for the film he now wanted to make. He was soon sharing the idea with several of his friends from the New York metro art community. "They loved it!" he said, adding that "This film is a why-to and not a how-to!"

His style of filmmaking was soft-focus and mostly about people. Wonderful as that was, I felt it wouldn't accurately render the intricate details on the layout, and I shared this with him. "The difference between you and me, Ken," he said, "is that you're a perfectionist and I'm not!"

One thing we did strongly agree on is that model railroading is indeed a most interesting and relevant form of art. – Ken Karlewicz



foam insulation board. The Cobleskill area was covered with 2" foam to allow for the underpass scene.

The main line is Micro Engineering (ME) code 83 flextrack. Passing sidings are code 70, and short spurs have code 55 rail. The Cherry Valley Branch is code 70 with code 55 on the sidings. The small interchange of the Cherry Valley Branch at Schoharie Jct. utilizes ME code 55 flextrack. All staging yard tracks are Atlas code 83 with Peco and curved Walthers turnouts. (The passive staging yard may soon become an active fiddle yard.)

The main has superelevated curves on Woodland Scenics Trackbed fastened to the foam with foam-safe Loctite PL375 construction adhesive. All yard areas and sidings have foam as the roadbed.

Choosing a roster

The locomotive roster consists primarily of Atlas hood units custom painted, detailed, and weathered by Southern Tier Modelworks in Florida and Bob Harpe in Savanna, Ga. The entire roster was equipped with ESU LokSound Digital Command Control decoders installed by Mike Rose of Dartmouth Locomotive Works.

The rolling stock roster includes Tangent, Kadet, ExactRail, Moloco, InterMountain, Rapido, Walthers, and Athearn Genesis offerings with era-appropriate weathering. Fortunately, thanks to these and other companies dedicated to filling the needs of us era-specific modelers, obtaining rolling



5 A trio of Alco C-420s drift downgrade past the yet-to-be-completed Howes Cave Cement Plant in the summer of 1980. Ex-Lehigh & Hudson River no. 401 and ex-Lehigh Valley no. 409 lead no. 408 on a Buffalo-to-Mechanicville freight.

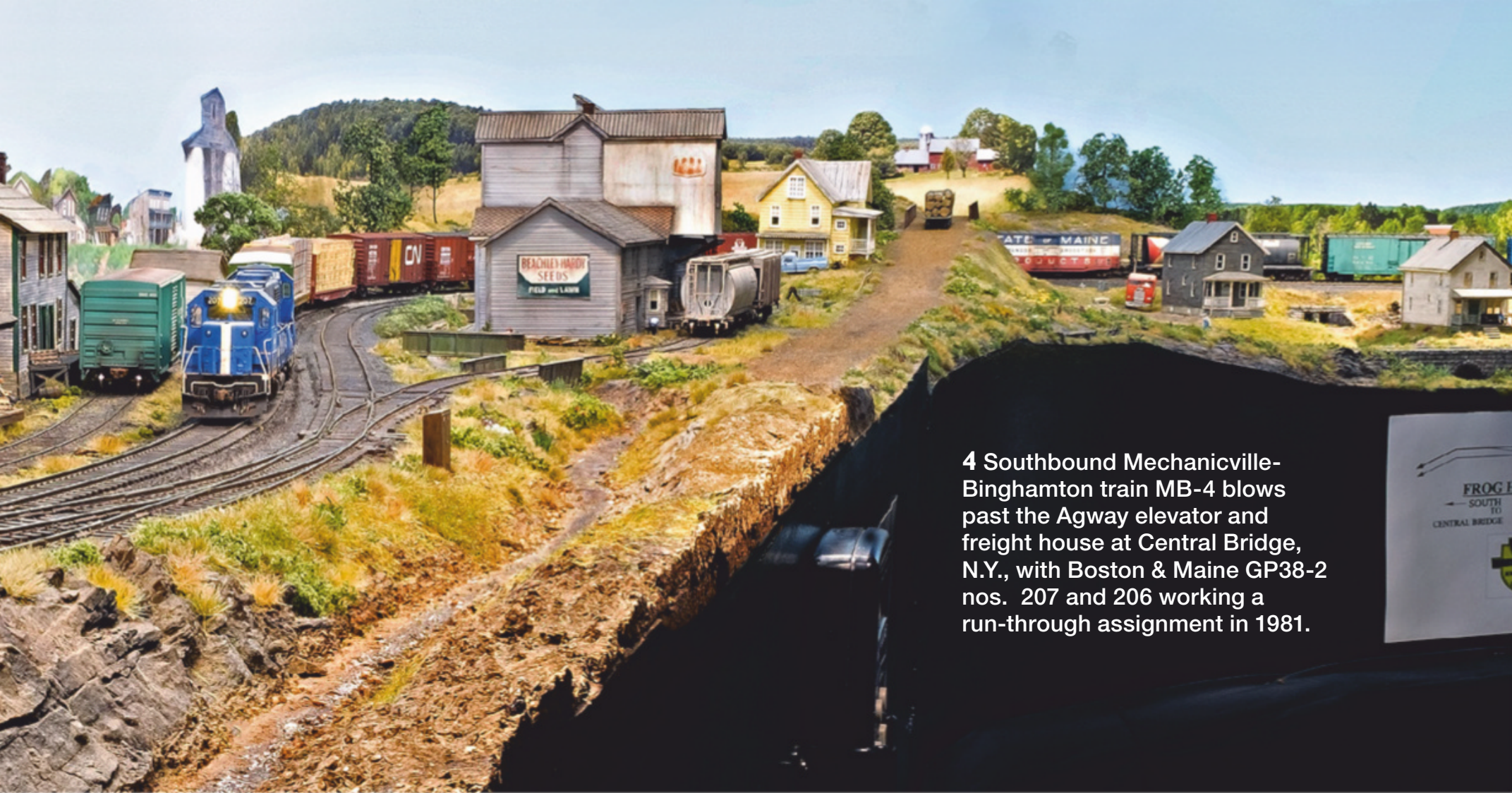
Construction

The HO railroad would occupy a combined space of 18 x 19 feet. Construction would be relatively conventional for a shelf-type layout, with L-girders cantilevered from walls on brackets. Our overall approach to building the railroad, however, was anything but conventional.

We agreed to work two days each week for 10 hours per day. Since he lives three hours north near Saratoga, N.Y., Don would spend the night between work days in the remaining bedroom upstairs. This allowed time for one late-evening and one early-morning brainstorming session.

The layout was up and running with all benchwork and wiring, most of the lighting, and a significant amount of scenery completed within the first year. Between our joint work sessions each week, I'd continue to work at a sustained pace on photo backdrops, weathering structures and rolling stock, scenery, painting track, and hand-painting ties. I quickly learned that the key to sustained progress was to stay motivated, thus maintaining momentum in the layout's development and being inspired by the progress.

We built the benchwork primarily of 1 x 2 and 1 x 3 pine. The subroadbed is 3/4" plywood overlaid with 1" extruded-



6 (top) and 7 (bottom) The morning lineup in the staging yard finds a typical color palette of motive power on hand in June 1981. The backdrop was photographed along I-88 in early morning to eliminate any harsh shadows. Ken felt scenicking the staging yard would make things more interesting for his crew and more appealing to family and visiting friends as well. Trains may enter or exit staging only from one of two tracks at the far end of the yard.



8 (above) and 9 (left) An 11" shelf supported by 8" metal brackets carries trains through Worcester, N.Y. The B&M consist is beginning the climb up Richmondville Hill, located on the other side of the portal in photo 8. The visible hole in the wall will eventually be disguised, and the backdrops are temporary.

Scenery was formed over a foam board base with Mike Confalone's recipe for "goop" used to create and smooth the contours. [Mike got his "ground goop" recipe from Lou Sassi, who last wrote about it in the March 2015 *Model Railroader*. – Ed.] Ground textures are primarily Silflor tufts and weeds supplemented with many natural soil textures, natural items, and old-school ground foam. I took great care to include many varieties of leaf and foliage textures and a variegated color palette that includes a good number of flowering weeds and shrubs along the sidings, hillsides, and yards.

Lighting is a combination of light-emitting diode (LED) tubes as well as LED spots and floods, with many of the latter in clamp-on fixtures suspended behind the valances. This allows light to be blended and angled to match the light in the photo backdrops.

Conquering space limitations

To compensate for the lack of square footage, the distance between scenes was compressed. Coving one corner allowed for a long sweeping curve, elongating the scene near Howes Cave Cement. Curved turnouts were employed in staging yard ladders to allow for greater track capacity in the confined area.

The use of light and shadow helps to create visual "pauses" between scenes,

drawing the eye past transitions. An example is the overpass near Frog Hollow, which separates it from the scene at Cammeron's Crossing.

Photo backdrops help evoke the feeling of "country" I was striving for: putting the viewer into the proper context with the railroad and adding depth to the overall scenes. Photographers often manipulate images in the darkroom or use photo-editing software to guide the viewer to a key area or away from another. Similarly, I've found there to be a much greater sense of realism achievable on my railroads with the creative use of lighting and backdrops.

Operation

I use NCE Digital Command Control with a command station and one auxiliary 5-amp booster. It's divided into four power districts: one for the joint staging yard, one for the Central Bridge area, one for Cobleskill/Richmondville, and one for Scholarie Jct. and down the branch into Cherry Valley Yard. All throttles are wireless.

The single-track main line is point-to-point, with each end having its own side of the staging yard. Four passing sidings that will accommodate trains of up to three units and 20 cars were included to ensure that trains could meet out on the high iron. The scennicked staging yard is located in an adjacent bedroom and represents both Mechanicville to the north and Oneonta to the south.

Road freights leave staging, run over the line, and return to staging, making occasional setouts or pickups at Cobleskill, Central Bridge, or Schoharie Junction. Meets are possible at any one of four locations on the railroad.

stock and motive power correct for the chosen time period wasn't a problem.

Scenery and structures

Most of the layout structures were scratchbuilt by friends Rich Cobb and Rick Conely, with a number of craftsman and Walther kits done by Vic D'Albora, George Marshall, my cousin Al Balchikonis, the late Walter Hession, and me.

The majority of stone abutments and retaining walls are from New England Brownstones (www.nebrownstone.com). Most outcroppings, quarry bluffs, and shale rock cuts were done using Cripplebush Valley's Rubber Rocks (www.cripplebush.net).



I0 Engineman Bob Harpe takes train SU-11 through Cammeron's Crossing in July 1981. Although it's been a while since old Joe Cammeron has been out for a ride in his Ford F-150 pickup, wife Bessie still likes to wheel him out onto the porch to watch the early morning local. Rich Cobb built the house.



II A northbound is in the hole at Frog Hollow (far right), with the Agway at Central Bridge visible as well. The temporary lift-out will be replaced with a scenicked drop-down section.

Two locals handle switching work out of Mechanicville and Oneonta along the main line. Crews currently use switch lists when operating locals or road freights making setouts or pickups. Based on input from the operators, I plan to implement a car-card and waybill system soon.

Embracing the imperfect

As an artist, I embrace the imperfection in things: the tired old Agway elevator and the men who labor there; the smells of grain, creosote, molasses,

and mold melding with the textures of rust, weeds, and peeling paint; the lone covered hopper resting quietly on the siding; and the ground cover arranged in haphazard ways, just as we see it in nature.

All of this adds up to the collective feeling I call "sense of place." All of it is perfectly imperfect, just as it is in the prototypes we attempt to simulate. During this journey, I've learned that if my railroad doesn't look enough like a full-size railroad, then I'm not looking hard enough at its prototype.

Learning points

- Model railroading is truly an art form, and viewing it in that light can often inspire something beyond what we would normally imagine.
- Outsourcing some aspects of our modeling endeavors may free up time to make more progress on the railroad itself.
- Finding space for a model railroad may require some creative compromises.
- An era that embraces motive power from several area railroads allows more of your favorite prototypes to be modeled.
- Big-time railroading need not require large expanses of layout space if scenes to be modeled are chosen judiciously.

In short, my HO scale railroad satisfies a desire to escape the fast pace of life. It's a place where I'm surrounded by a simple, soothing tranquility. **MRP**

Ken Karlewicz owns a home-building maintenance company in Rockland County, N.Y. His work has appeared in Vermont Life, The New York Times, and the book Susquehanna: From Short-lines to Stackpaks. He and his wife, Priscilla, also enjoy travel, live music, and entertaining family and friends.



A MULTI-DECK RAILROAD in O scale!

A move up to a larger scale presented some layout design challenges

By Michael Georgell

Model photos by the author

I became interested in prototype modeling while working in HO scale. I had some success with duplicating structures, bridges, locomotives, and rolling stock, but I lacked a specific time and place. The main line included parts of Tennessee, Georgia, and Florida. The layout was in a room over the garage, and I struggled with dust issues. I spent too much time cleaning track and wheels and not enough time building and operating.

In 1995, I began seriously considering switching to O scale (1:48). The fascination of scale-size couplers that worked like the prototype provided a strong pull. I then began reading about Proto:48 “fine scale,” the 100-percent accurate version of O scale, with correctly gauged rail, proper wheel width and tread contour, and the limited availability of motive power and rolling stock. Yes, the latter was a positive attribute, as I’d fallen into the trap of buying way too much stuff in HO scale because it was so readily available.

The question was whether an acceptable amount of mainline running, towns, bridges, and highly detailed scenes could be compressed into my limited space. O scale curves take a lot of area, and even small structures are huge compared to HO scale buildings. Bridges, which I enjoy modeling, also consume a lot of space.

I Louisville & Nashville 4-6-2 no. 231 crosses the Talona Creek bridge at the head of a southbound freight on Michael George’s O scale Old Line. Also known as the Hook & Eye, it’s now relegated to branchline status.





2 The daily northbound passenger train, No. 4, pauses at the Ellijay, Ga., depot. The stop is just long enough for the workers to unload sacks of mail and for the crew to exchange pleasantries with the agent.



3 The fireman takes a look at the train as Pacific no. 231 rounds a curve to the left while crossing bridge 80, a ballasted-deck timber trestle over Dry Creek. Note the metal rain-and-hot-cinder guards atop the stringers.



4 The multi-deck design of the Hook & Eye line is apparent in this view of the Talona Creek bridge (lower deck) and the water tank at Maxwell. The extra deck effectively doubled the mainline run.

The layout at a glance

Name: Louisville & Nashville's Old Line
Scale: Proto:48 (O fine-scale)
Size: 24 x 32 feet
Prototype: L&N
Locale: Tennessee and Georgia
Era: summer 1948
Style: multi-deck, around-the-walls
Mainline run: 188 feet
Minimum radius: 66"
Minimum turnout: no. 8
Maximum grade: 2 percent
Train length: 12 feet
Benchwork: mostly L-girder
Height: 50" to 64"
Roadbed: Homasote on oriented-strand board splines
Track: handlaid code 125; some code 100 in sidings
Scenery: plaster-soaked towels on cardboard-strip lattice
Backdrop: tempered hardboard
Control: direct-current, P-B-L
Foreground Sound

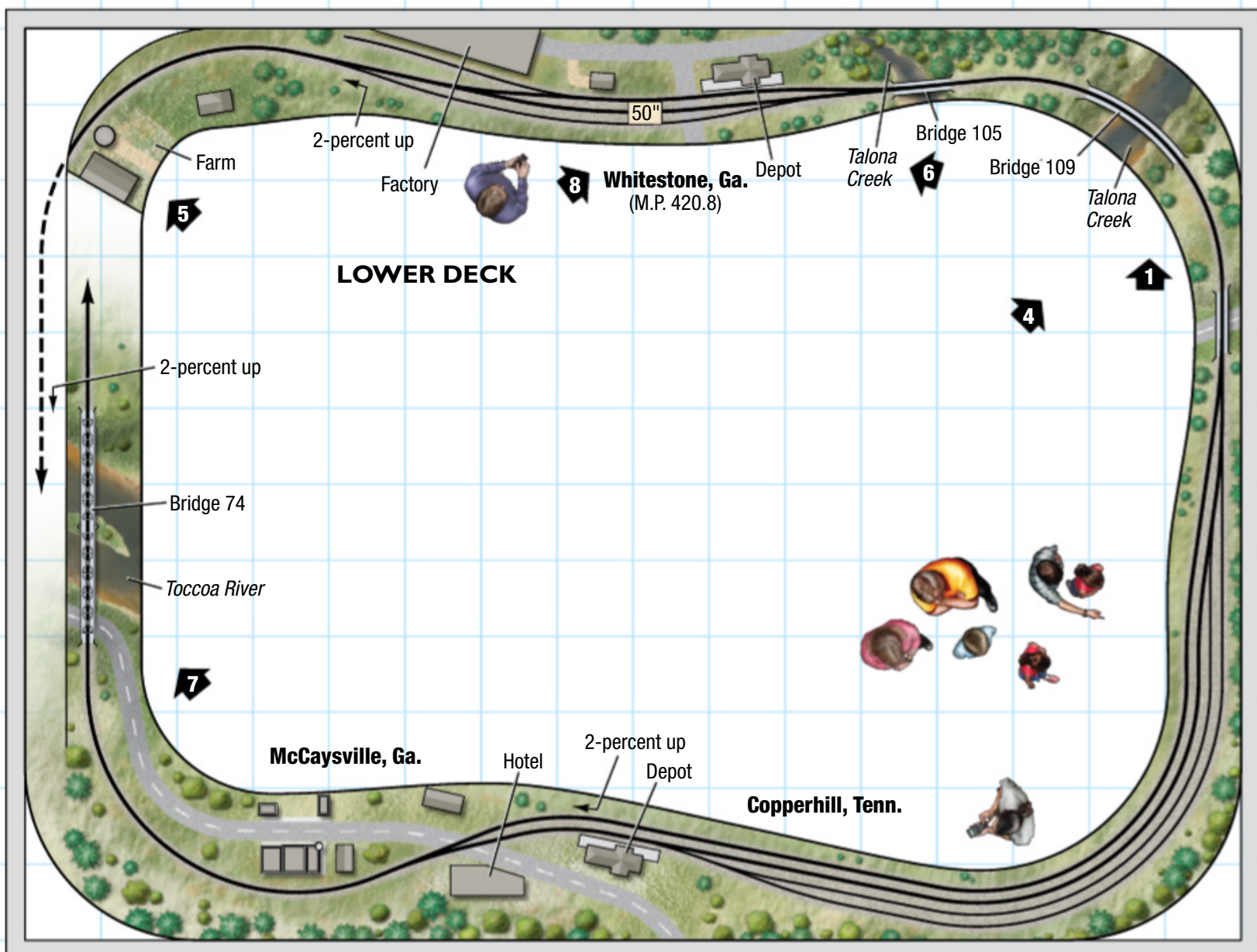
Modeling the Hook & Eye

I modeled a former Louisville & Nashville main line that had been turned into a branch line: the Old Line, or Hook & Eye, between Copperhill, Tenn., and Whitestone, Ga., in the summer of 1948. That time frame allowed daily northbound and southbound local passenger trains and a northbound and southbound freight controlled by timetable and train order (TTTO). My operating sessions are done solo, and this traffic level seemed to be an acceptable balance.

As planning progressed, several requirements surfaced:

- A track plan that follows the prototype as closely as possible
- Accurate buildings, including the distinctive L&N depots, and prototypical town layouts
- Accurate bridges and trestles
- Scenery that's as close to the prototype's appearance as possible
- Accurate rolling stock and locomotives, including full-length passenger cars and locomotives that were permitted only on this branch – scratchbuilt 2-8-0s and 4-6-2s (United States Railroad Administration light Mikados were used between Copperhill and Blue Ridge)
- Prototype-based operation.

My original intent was to model part of the Copperhill, Tenn., yard as an exposed staging yard. I also wanted to model the depot and part of the town, as well as Blue Ridge, Ellijay, and





“Before” and “during” views of Ellijay show the construction methods. The subroadbed is made of three 1½" oriented-strand board splines spaced with OSB blocks every few inches. The 2"-wide Homasote roadbed, which Michael cuts on a table saw, is glued and clamped to the splines. He made the upper deck L-brackets from 1" steel angle stock.

Whitestone, Ga. The available area was 24 x 32 feet over the garage. The steps come into the middle of the room. Workbench space is also in the center.

A double-deck layout would be needed, with limited clearance – never more than 12" – between decks. Would this be sufficient for O scale? A main line of 1.71 scale miles was possible.

It soon became obvious the plan was too ambitious, and Blue Ridge was replaced with a portion of Murphy Junction (a wye and siding). I didn't want the layout to appear too crowded.

With limited vertical clearance, it was apparent the layout would need to become something like a shadowbox, with restricted viewing angles and

scenic features (mainly cuts, as there were no tunnels on this line) to focus attention on highly detailed areas. The detail on 1:48 locomotives and rolling stock is a joy to look at, but it must be complemented by a high level of detail on all scenic features to look realistic.

The scene of highest impact is the crossing of the Toccoa River on two truss bridges. The prototype bridges' length was obtained from a track diagram, and the river's width was supplied by a topographic map. Except for its grade where the full-size bridge is level, the scene is identical to the actual river crossing.

Multi-deck concerns

I didn't want the interference of the upper deck in the Toccoa River scene, so here the backdrop acts as a barrier to the transition from lower to upper deck. The plan was to reduce hidden track so areas with scenery could be maximized. Therefore, this is the only area of the railroad not readily visible.

One downside of a multi-deck O scale railroad is that the upper deck can't have bridges or valleys of any depth. The distance from upper-deck track level to the valley or waterway being bridged is great enough that it severely restricts clearance on the lower deck. The upper deck therefore has low-height trestles. This was disappointing, as I wanted another truss bridge in Ellijay.

There's a place in the Copperhill Yard where there's only 8" between the track and the bottom of the fascia/valance above it. In photographs, these small vertical distances are a negative. But when viewing the layout in person, the eye focuses on the action of the train, not the distance between decks, and the benefits of a long mainline run make operation much more fulfilling.

To keep the depth of the upper-deck benchwork to a minimum, I welded 1" steel angle into L shapes. I screwed the rear of each L into the wall studs; the other leg supports track and scenery. Wood blocks were attached with screws through the L for mounting the backdrop and track. The depth of the upper-deck benchwork varies from 10" to 30". Except for the Copperhill yard, I used spline roadbed on the layout.

Whitestone is the most significant switching area on the layout, not due to the complexity of industries and trackwork but because of the lower deck's elevation. All switches are lined by hand, and couplers are opened by manually pulling the pin.

Track elevation at Whitestone is 50". The deck above it at 64" is the Murphy

Learning points

- Multi-deck railroads are practical in O scale.
- Adding a second deck effectively doubles the mainline run.
- The apparent closeness between decks in large scales can literally be offset by having the lower deck project farther toward the aisle.
- Larger scales offer many enhanced opportunities for fine-scale modeling.
- Multi-decks may make some aspects of construction and maintenance more difficult, but that's true regardless of scale.

Junction siding. With the width of the upper deck generally set at 12", I made most of the lower deck 24" wide. I kept the track close to the front edge, making it accessible for operation.

Most of the upper deck above the Copperhill staging yard is narrow to allow access to the yard below. Except for the town of Ellijay, the upper-deck trackwork is simple and requires minimal maintenance. These narrow areas, some only 8" wide, allow scenery between the fascia and backdrop without that aspect of layout construction becoming a burden.

Ellijay is the highest point where switching is done. The town's 62" elevation makes it difficult to see what's going on. To make switching the town easier, I plan to build a movable 16" x 36" x 8"-high step on spring-loaded casters. It should be large enough to have a confidence-inspiring feel and put one at the proper height.

The most awkward area was the transition between decks beyond the Toccoa River bridge. The upper-deck track, climbing from left to right, is in front of the lower-deck track, which climbs from right to left.

I finally had the fascia serve both decks and put half of a barn in the center. The barn draws the eye away from what is going on between the two decks and serves as a scenic divider for trains entering the hidden track behind the bridge.

Curves and structures

The curve radius in the corners is 66". With viewers being inside the curves, the radii don't appear excessively sharp, especially with super-elevation. Curves not in corners use broad, gentle radii for a realistic appearance. Full-length (77-foot)



5 The transition where one deck ducks under another is always challenging, but the truncated barn at left provides a "bookend" to the lower-deck scene while the house and garden divert the viewer's attention.



6 Both decks of the L&N Hook & Eye branch are visible as a short freight eases into the siding at Whitestone, Ga. Talona Creek bridge 105 is in the foreground.

passenger cars are operated with no issues, although they are weighted to keep them planted firmly on the rails.

All structures except one were scratchbuilt scale models of actual structures, although some weren't located on the Old Line. In Ellijay, the depot, hotel, and Standard Oil facility are exact replicas, as they're still standing and could be photographed and measured. Ellijay has an off-layout crosstie plant, but there's a siding to serve it. Standard Oil receives tank cars, and express cars are left at the depot. Many structures remain to be built for Copperhill, the largest town.

Whitestone was a huge limestone and marble shipping facility, generating many carloads per day. The modeled portion includes a warehouse and office. The John J. Craig Marble Co. really existed, but on a different section of the L&N. The office was relocated to Whitestone.

Bridges set the scene

In addition to the Toccoa River crossing, I scratchbuilt a deck-girder bridge with trestle approaches and a through-girder bridge for the Talona Creek crossings. The through-girder was built of scale thickness styrene. The scene featuring the deck-girder bridge is identical to the prototype except for the curve radius. Piers, abutments, and even rocks on the bank and in the creek match the prototype.

Bridge 95 is a ballasted-deck trestle. I was fortunate to be able to take measurements and photographs before it was burned by arsonists. Bridge 85 is the shortest bridge, a simple beam bridge at Maxwell.

Engine facilities – or not

Maxwell is one of the most interesting scenes. No photographs could be found of the water tank, but the size was known. I modeled it based on

7 Michael especially enjoys building bridges. The through-truss bridge over the Toccoa River was kitbashed from two Atlas bridges. The deck and portals are scratchbuilt.





8 The impending end of steam's long reign takes the form of a 1600 hp Alco RS-3 idling alongside the depot at Whitestone, Ga. A liability of a multi-deck railroad is that the upper deck can interfere with photo angles on a lower deck. However, photo-editing software can help solve that problem.

guesses, but the capacity is correct. The arrangement of track, bridge, and tank was obtained from prototype track diagrams and topographic maps. The tank was no longer in service in 1948, but it was too great an opportunity to miss, as no engine-servicing facilities are modeled.

Many, perhaps most, model railroaders think they must incorporate an engine terminal of some sort into their layout. While interesting, they take considerable space that could be used for scenic features or industries. Our model locomotives really don't need to be serviced or have to be stored inside.

The shift to O scale

All the trackwork is in place and functional. Copperhill and McCaysville lack scenery, but other areas have at least basic hardshell and ground cover. Many trees on the upper deck are 18" high, which seems huge but is only a scale 72 feet high. The big trees help to keep the trains in proportion.

Has the change to O scale been a good one? Track cleaning is a lot easier: I run a boxcar with a tempered hardboard pad underneath around the layout once or twice a year. Locomotive wheel cleaning is never required, as the steam locomotives weigh three to four pounds. Dust doesn't cause any electrical contact issues.

The mass of O scale cars makes them sound realistic when they move over rail joints. Brass cars creak and



9 Railroad and residence share a narrow valley near Blue Ridge as Mike 1510 thunders by. The lady of the house and her chickens don't seem perturbed.

groan a little, just like the prototype. Scale wheels and couplers are satisfying to watch, especially when the pin drops as two couplers meet. For those who handlay track, tie plates, joint bars, and turnout details are available.

There's enough room in steam locomotive models to add belts and pulleys to obtain realistic top speeds. My scratchbuilt locomotives have a top speed of 35 scale mph, which was the maximum speed allowed on the Old Line. Since they're speed matched I can easily doublehead my 4-6-2 and 2-8-0, even though the driver diameters are different. I'll also re-gear Mikado no. 1510, an Overland Models brass import, to the 35 mph top speed.

There's plenty of room in tenders for speakers, or batteries and radio control equipment if one chooses to go "dead rail." I use P-B-L's discontinued Foreground Sound System, which is direct current (DC) with wireless control and high-quality sound.

The double-deck layout has the advantage of a long mainline run, but

it's difficult to take photos on the lower deck without the upper deck being in the shot. The restriction against upper-deck bridge scenery that dips much below track level is frustrating. Building scenery and laying track can be more challenging, but that's true of a multi-deck railroad in any scale.

However, I think the advantages outweigh the disadvantages, and the requirements originally laid out have been met. Building a multi-deck railroad in 1:48 is indeed a practical approach to model railroading. **MRP**

Michael George is an engineering designer for a food manufacturer near Chattanooga, Tenn. This gave him access to 3-D printing equipment, which has been valuable for scratchbuilding locomotives. Michael wrote Southern Railway's Murphy Branch (The College Press, 1996) and Louisville & Nashville's Atlanta Division (Blue Ridge Historics, 2000). Married with two sons and one granddaughter, he also enjoys riding bicycles and restoring old cars.



Three 2,000-hp Alco Century 420s show off two of the Lehigh Valley RR's myriad paint schemes as they accelerate under the road overpass at Maxington, Pa. Ron Papiercavich's layout models the Lehigh Valley from 1968 to 1976.

The LEHIGH VALLEY in N SCALE

A professional railroader models the era when Alco Centuries prevailed

By Ron Papiercavich//Photos by the author

Choosing the Lehigh Valley RR (LV) as a modeling subject came easily for me. I grew up in Hughestown, Pa., which is near the LV's former Coxtown Yard. The Lehigh Valley and Delaware & Hudson (D&H) main lines both ran past my grandparents' home in Avoca, Pa.

I could see both railroads from the picture window in their living room. My interest in railroads was sparked early, as I went right to that window and waited for action with every visit.

My parents also had a fishing cabin along the Susquehanna River, which was only a short walk away from the Lehigh Valley's Vosburg Tunnel near Mehoopany, Pa. From the cabin, I could see trains approaching along the river and have enough time to run down to the tunnel to see them enter.

By the time I was old enough to realize which railroad was which, Conrail Blue had taken over the former LV territory. However, I've always been interested in railroad history and times when things were much busier.

In 2000, I hired out as a conductor on the Reading & Northern RR. This job allowed me to see the Lehigh Valley's Wyoming Division firsthand from Lehigh to Mehoopany. Jump ahead to 2009, and I became an engineer operating trains over the same LV territory. I still work out of Coxtown Yard today.

I was fortunate enough to work with former LV employees before they retired. It was their tales of life on the railroad that really brought the picture of the Lehigh Valley and its operations to life. Mike Bednar, for one, is not only

a retired LV veteran but also a true historian on the subject. He has written numerous books on the railroad and is always willing to share great stories and information. So the Lehigh Valley RR was clearly my first choice.

Choosing a layout theme

I chose the final era of the Lehigh Valley to model: 1968 to 1976. During this time, the D&H and the Central RR of New Jersey (CNJ) had trackage rights over parts of the LV's main. This would add interest to operations. It was also one of the most colorful and interesting times for the diesels that traversed the line. The LV's Sayre Shops seemed to be endlessly creative with their paint schemes during this time, adding even more visual interest to the layout.

I didn't want to model the Lehigh Valley exactly as it was. My goal for the layout was to capture the look and feel of the railroad. My favorite facet of the hobby is scenery. I wanted the artistic freedom to create scenes that took you back to that era without viewers saying, "I know that area, and I see discrepancies."

So you may notice fictional names like Wilkeston and Packer Yard that hint to real locations such as Wilkes-Barre, Easton, and Packerton Yard. There is also a 16-foot Lehigh Gorge area that tries to capture the essence of the beautiful scenery found along the LV.

In contrast, I also want to show some of the grittier areas of the Lehigh Valley in the anthracite region. For instance, there will be culm banks (mine waste piles) found along the Heidelberg breaker scene when that area is complete.

Objectives

When I purchased my home six years ago, I finally had a basement for a model railroad. The possibilities seemed endless considering I model N scale. So now I had to choose what I really wanted out of my layout. As a locomotive engineer, I wanted the option of continuous running. I knew there would be times when I just wanted to relax and watch trains run after moving full-size trains all day.

Moreover, my favorite part of the hobby is building scenery, and what better way to enjoy the fruits of your labor than to railfan your own layout? However, I still wanted this to be a model railroad that had potential for realistic operation.

So I set out to combine the best of both worlds. The double-track main offers continuous running, but there's a 16-foot, five-track, stub-ended staging yard. This allows road trains to have a "beyond the basement" origin and destination.

Though staging is stub-ended, I wanted east- and westbound trains to depart and arrive at the staging yard facing the correct way – no backing in or out. This was accomplished by making the single-track Wilkeston Secondary also a reverse loop.

A westbound train leaving staging takes the Wilkeston Secondary at Mink and exits at Harlet Junction, using the crossovers to enter the westbound main. Now that the train's direction is reversed, it can enter staging after traversing the main line.

Eastbound trains leaving staging use the crossovers at Mink to enter the



2 One of N scale's major attributes is the ability to include vast scenic vistas without creating reach-in problems for operators. This view shows an eastbound freight powered by a trio of General Electric U23Bs in the spectacular scenery of Lehigh Gorge.



3 Another view of the gorge cut by the Lehigh River shows an eastbound freight headed by a pair of "Snowbird" Alco Century 628s passing Ripple Tower.

eastbound main. The train can then enter the Wilkeston Secondary at Harlet Junction to be oriented correctly after exiting at Mink.

Locals will originate at Packer Yard to serve the industries on the Wilkeston Secondary and other local customers, including the freight house, Heidelberg Breaker, and so on. Packer Yard is large enough for road trains to make setouts and pickups as well as have locals or yard jobs classify them as needed for customers. This would create enough traffic for interesting operating sessions in the future.

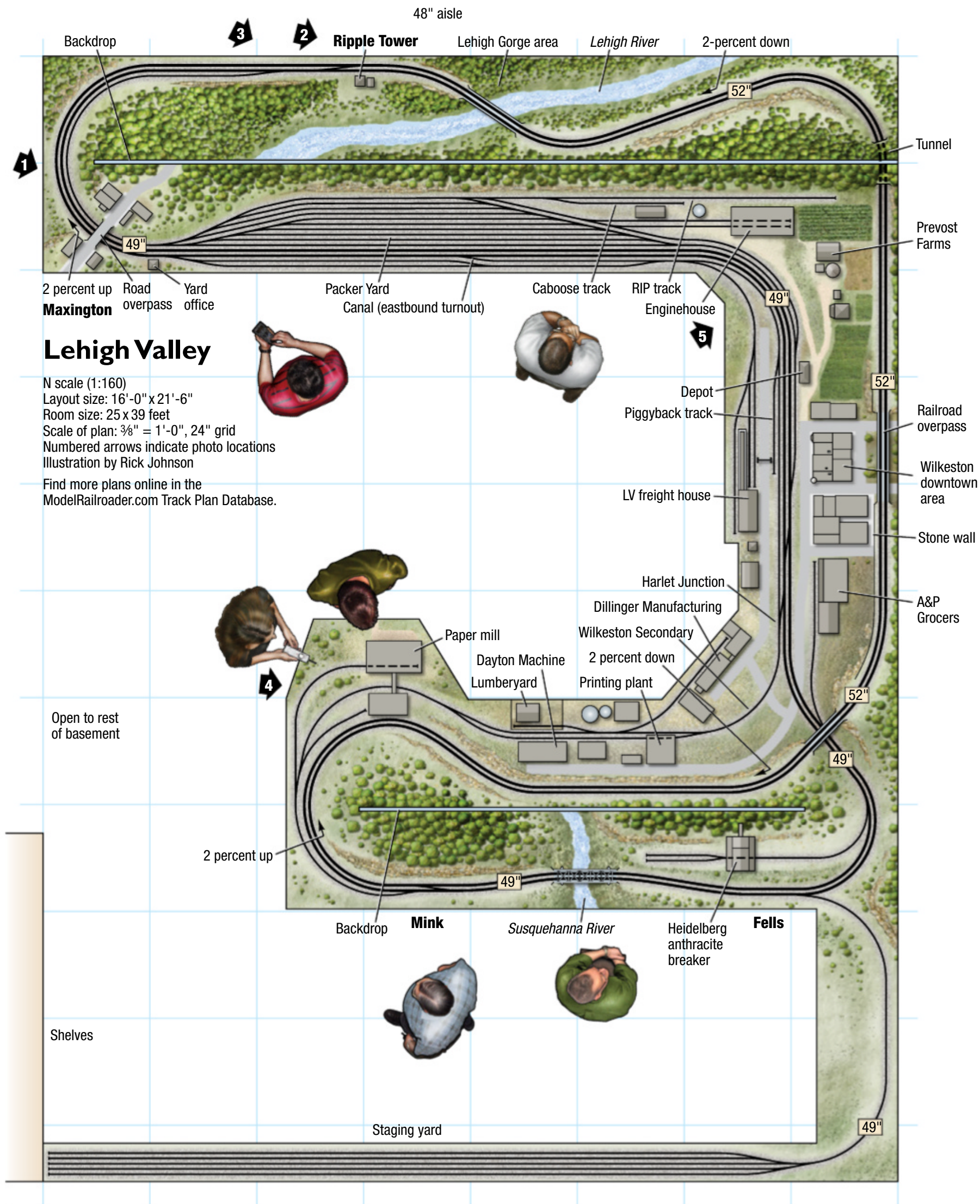
Two of the five staging tracks will be dedicated to the D&H and CNJ trackage-rights trains. One will be dedicated to the LV's priority piggyback train, the *Apollo*. The final two are planned for mixed LV symbol freights

that will be making the setouts and pickups at Packer Yard.

Occasionally, a train will be intentionally underpowered when leaving staging. In this case, a set of power will be dispatched out of the engine terminal at Packer Yard for pusher service up the 2 percent grade. In all, that's enough action to keep a small operating group busy.

Why N scale?

There are four things that I factored in when choosing N scale. First is the train-to-scenery ratio. In 1:160, modeling big mountains in a scene that's only 2 feet deep is perfect for my Lehigh Gorge area. It creates the dramatic impression needed to do justice to an area such as this, yet still allows an easy reach for working on the railroad.



The layout at a glance

Name: Lehigh Valley
Scale: N (1:160)
Size: 16'-0" x 22'-6"
Prototype: Lehigh Valley
Locale: eastern Pennsylvania
Era: 1968 to 1976

Style: walk-in
Mainline run: 90 feet
Minimum radius: 13 3/4" industrial track, 19" main line
Minimum turnout: no. 5 (yards), no. 7 (main)

Maximum grade: 2 percent
Train length: 13 feet
Benchwork: open grid
Height: 49" to 52"
Roadbed: cork on Homasote

Track: Atlas code 55
Scenery: plaster cloth over cardboard lattice covered with Structo-Lite
Backdrop: tempered hardboard
Control: DC cab control

Learning points

- N scale offers major advantages in terms of scenic expanses and train length.
- Today's N scale equipment operates as reliably as its larger-scale counterparts.
- Layout planning is important, but jumping in and getting started can be a valuable learning experience.
- Try to picture a scene as a whole before working on individual aspects.
- Be sure you'll personally enjoy running your railroad when it's finished.

Second is train length. N scale allows long trains to look more realistic when running through the big scenes. The Lehigh Valley ran long trains in the era I model.

Third, N scale equipment runs reliably and looks great compared to the N scale of the past. With the arrival of Atlas code 55 track, I was sold. It looks great, and the powered frogs ended stalling problems. I use no. 7 turnouts on the main and no. 5s for yards and industries.

Last, I already had a lot of N scale equipment, including custom-painted locomotives that involved much time and effort.

Looking ahead

At this point, benchwork, trackwork, and wiring are all complete. Scenery is about halfway done. I'm working from one end of the layout to the other. I find this more productive than jumping around and forgetting details that I promised myself to take care of later.

Going downstairs to work on the layout is my escape from the stresses of life – my own little world. As I progress, however, I realize that my place to get away from it all will eventually be opened up to other modelers for operating sessions. I prepared for this: The aisles are wide, and the center is a big open area. I didn't want visitors and operators to be crammed together and not be able to enjoy the experience.

The railroad is operated using direct-current (DC) cab control. There are two main cabs plus Packer Yard, Wilkeston Secondary, Heidelberg Breaker, and staging cabs. I use Varipulse tethered throttles by Stapleton Electronics. They can be plugged in at various locations on



4 The industrial area at Wilkeston, Pa., is taking shape and offers considerable switching potential for crews working on the Wilkeston Secondary.



5 Some flatter areas near Wilkeston are suitable for agricultural purposes. Prevost Farms sits on a low plateau just west of Wilkeston.

the fascia using telephone jacks for local switching tasks. I chose to use DC rather than Digital Command Control (DCC) due to the overwhelming number of locomotives I already owned and would have to convert.

Being a professional railroader gave me insight into how the blocks should be set up on the layout to emulate operating-rule block limits in use on the prototype. The block controls are operated from the dispatcher's panel during an operating session.

The five interlocking or control points on the layout are Ripple, Canal, Harlet Junction, Mink, and Fells. They're operated from the dispatcher's panel and powered by Tortoise by Circuitron switch motors. Packer Yard's complexity required a control panel for individual track power

selection. Other switches are manually lined by operators in the field as per prototype practices using micro single-pole double-throw (SPDT) slide switches that fit between the turnout head blocks and reverse frog polarity.

I estimate a crew of up to six operators can be comfortably accommodated and kept busy. So even when the scenery is complete, my hope is that the railroad will continue to bring interest and fun for years to come, not only for me but for many others. **MRP**

Ron Papiercavich is a locomotive engineer for the Reading & Northern. He and his fiancée, Emi, reside in Waverly, Pa. Ron enjoys studying the history of Northeastern anthracite railroads. He modeled in HO during his adolescent years; this is his third N scale layout.

Modeling an

An HO tribute to the Akron, Canton & Youngstown

By Bob Lucas

Photos by Chris Lantz except where noted



I Eastbound Akron, Canton & Youngstown freight No. 94 approaches the diamond at Spencer, Ohio, on Bob Lucas' HO scale model railroad.

Ohio classic

My long-lasting interest in the Akron, Canton & Youngstown (AC&Y) can be attributed to visits to grandparents in northeastern Ohio. They lived near the AC&Y in Fairlawn/West Akron. The chime of a Nathan M5 air horn was my incentive to bicycle to trackside.

At the time, the AC&Y's locomotive roster consisted entirely of Fairbanks-Morse (FM) road switchers. Passing trains dispensed the characteristic

blue-gray FM exhaust and a distinct sweet aroma of newly minted tires from Akron's many rubber plants. I determined from train crews and the local section gang where the AC&Y went – 169 miles between East Akron and Delphos. Soon I was able to visit both terminals and much of the railroad in between, and I was hooked.

The summer of my induction into the U.S. Army, I worked for the AC&Y

as a member of the Brittain Yard section gang. It was a great experience for a college grad (with a draft notice). After fulfilling four years' military service and overseas duty in Turkey, I returned to civilian life. Model railroading was still on hold.

Meanwhile, Akron had changed dramatically. The rubber city had descended into a rust belt poster child with few job opportunities. I was





2 Downtown Medina, Ohio, was taking shape as an AC&Y H15-44 headed west past the depot on its way to Delphos. The unfinished overhead crossing represents the Baltimore & Ohio.



3 Here eastbound No. 42, trailed by a wood caboose, crosses a cattle underpass near Huntington, Ohio.



4 Steel caboose no. 63, a product of International Car in nearby Canton, Ohio, trails an eastbound freight through Spencer. The caboose is a kit from Wright Trak Models produced for the AC&Y Historical Society.

dismayed that many landmark AC&Y features – structures and equipment – had vanished. We always believe our favorite railroads will never change, but they do. Fortunately, those AC&Y features were well documented.

Migrating to Houston after military service, I hired on with Ryder System in the Truck Lease Division and married a Texas girl. We purchased a home, and I contemplated my first layout. Texas houses lack basements, so the next best option was part of the garage. The 5 x 10-foot freelanced layout validated lightweight construction techniques as well as my interest in realistic operation. Part of it has been repurposed in my current layout.

Preliminary construction

The first opportunity to build a serious layout came in 1983. I parlayed transportation experience and long-time railroad interest into employment with Canadian Pacific, then CP Rail. We lived in Montreal for nearly two years and then were transferred to Cleveland. Our new house there had a great basement accessible via a staircase with 90-degree turn.

Knowing that relocation was always a possibility, I built lightweight movable sections. The stair constraint was the determining factor. The “standard” section would be 9'-3" long by 28" wide (maximum) by 6" deep, including fascia. Kiln-dried 1 x 2 white pine was

the backbone of L-girder construction with 2 x 2 legs braced with aluminum channel. Roadbed was a sandwich of $\frac{3}{8}$ " plywood and $\frac{1}{2}$ " Homasote.

At the time, foam roadbed wasn't available, so I used cork roadbed. Layers of contoured foam scenery were supported by strips of plywood. A section weighed 50 to 60 pounds, which I could handle without help.

Layout Design Elements

My early attempts to model the AC&Y predate the introduction of the Layout Design Element (LDE) concept in *Model Railroad Planning 1995*. The idea is a series of connected elements that are visually and operationally recognizable as models of actual locations. Additional elements could then be joined together with runs of undefined mainline track to provide some separation.

The first section I modeled was Spencer, Ohio. The community, 42 miles west of Akron, was a busy interchange between the AC&Y and the Nickel Plate Road's (NKP) Wheeling District.

In 1987, I accepted a position with Norfolk Southern. One home in Virginia didn't have a basement. The existing section was reconfigured to fit a bonus room above the garage.

I completed only two more sections in subsequent years, as career responsibilities were quite intense and work relocations were frequent (10 total). The sections featured Medina, Ohio, with its Baltimore & Ohio (B&O) interchange, and Hiles/New London,



where the AC&Y connected with the New York Central's (NYC) Big Four line.

I mention all of these details to encourage those of you who don't now have an ideal spot for a layout or expect to be relocated. By planning ahead, you don't have to lose all of what you have along the way.

The current layout

All three original sections have been incorporated into the current layout, including Spencer, with an extension to boost the passing siding to 18 cars. This layout employs the same light-weight practices, though the sections are longer. I also switched to foam roadbed, which I find quieter and more durable than cork. I use HO scale foam for the main line and N scale for passing sidings, industrial sidetracks, and yards. The appearance mimics the prototype track profile, where the main line had raised limestone ballast and secondary track was laid on a bed of cinders. The effect of different elevations is striking.

For many years, I focused on acquiring freight car and structure models, knowing a space for my dream AC&Y layout would be forthcoming. Eventually I inherited the home where I grew up. It has a large downstairs recreation room with two connecting rooms. A year was spent in room preparation, namely repainting and replacing the old checkered tile floor with durable indoor-outdoor carpet and removing a wet bar.

I didn't prepare scale layout drawings as such, but instead visualized all LDE scenarios. I knew where and how the existing sections would be



5 A Mikado on local freight No. 42 is tucked out of harm's way on the freight house track at Spencer as a pair of Fairbanks-Morse road units hammers over the Nickel Plate Road diamond. The train is on its way to Delphos in the northwestern corner of the Buckeye State.

employed, as I would model the AC&Y end-to-end in a linear fashion.

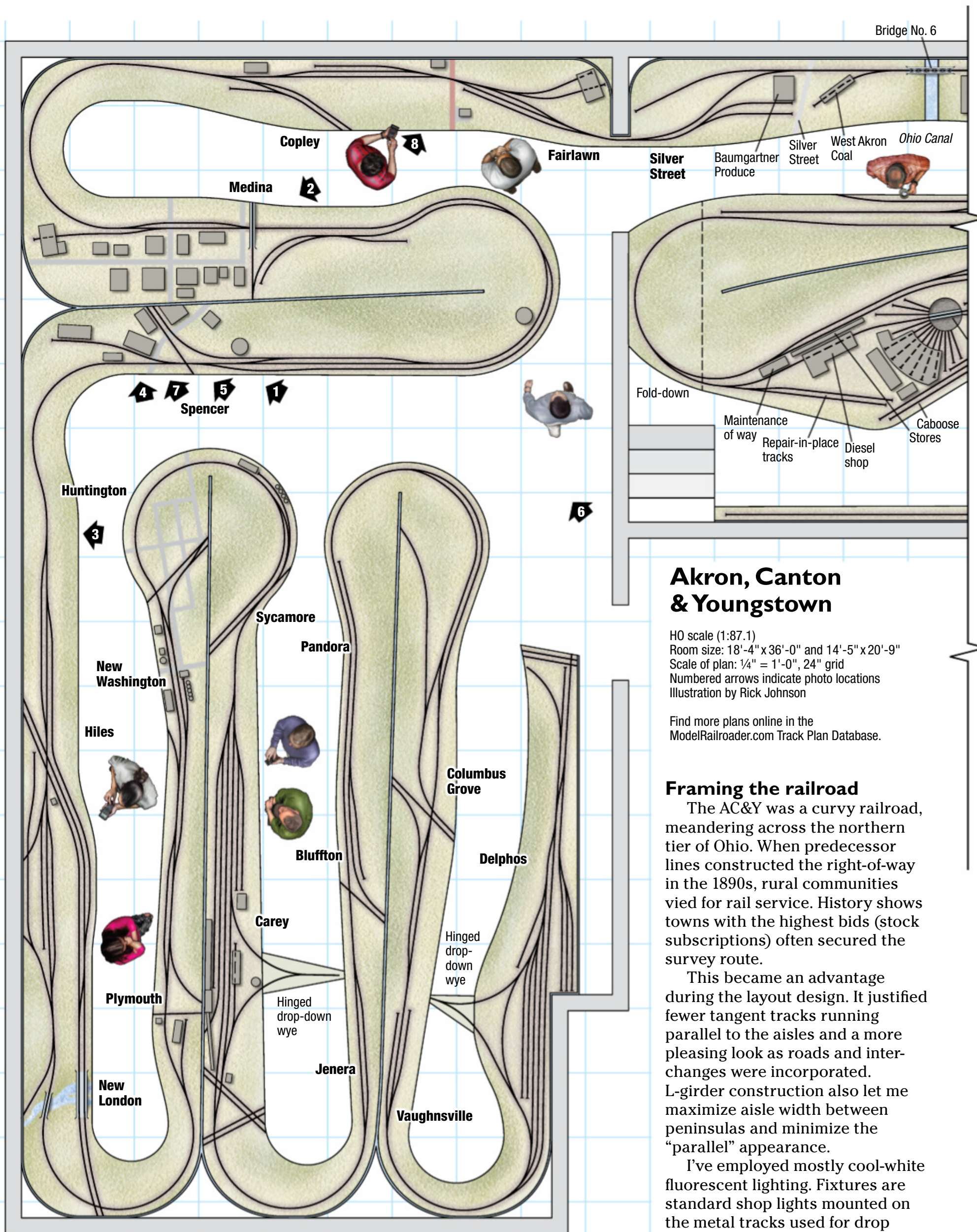
That said, modeling an entire railroad, even in an abridged manner, has been a daunting task. I estimate what represents 40 to 45 percent of the AC&Y's condensed 169 miles is now operational. The total main line will approach 300 feet when completed. Brittain Yard in Akron anchors the eastern end of the layout, Delphos the western end.

The AC&Y had 32 named stations, all of them LDE candidates. I chose to feature 16 stations and 14 of the 21 interchange connections. New London and Carey are intermediate terminals.

Trackwork

I employed Micro Engineering flextrack and Walthers Shinohara and Micro Engineering turnouts. Code 83 is standard for the main line and code 70 for passing sidings, yards, and industrial spurs. I chemically blacken any non-weathered rail with A-West Blacken-It [do this in a well-ventilated area and follow all safety precautions – *Ed.*] and painted the ties light gray and then with various wood stains.

Mainline turnouts are no. 6s with a few no. 5 wyes plus some curved turnouts. The minimum radius is 28" with superelevated track where there are no speed restrictions.



Akron, Canton & Youngstown

H0 scale (1:87.1)
 Room size: 18'-4" x 36'-0" and 14'-5" x 20'-9"
 Scale of plan: 1/4" = 1'-0", 24" grid
 Numbered arrows indicate photo locations
 Illustration by Rick Johnson

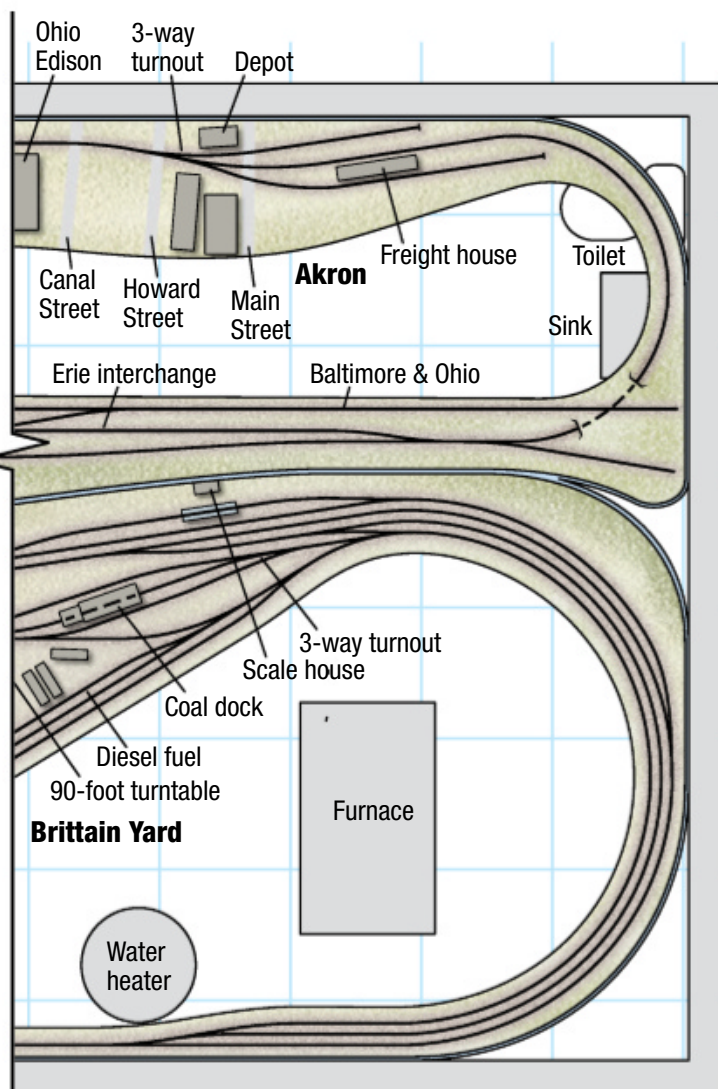
Find more plans online in the
 ModelRailroader.com Track Plan Database.

Framing the railroad

The AC&Y was a curvy railroad, meandering across the northern tier of Ohio. When predecessor lines constructed the right-of-way in the 1890s, rural communities vied for rail service. History shows towns with the highest bids (stock subscriptions) often secured the survey route.

This became an advantage during the layout design. It justified fewer tangent tracks running parallel to the aisles and a more pleasing look as roads and interchanges were incorporated. L-girder construction also let me maximize aisle width between peninsulas and minimize the "parallel" appearance.

I've employed mostly cool-white fluorescent lighting. Fixtures are standard shop lights mounted on the metal tracks used for drop ceilings, which position lights within 24" of the layout. I also recently added single strings of



The layout at a glance

Name: Akron, Canton & Youngstown

Scale: HO (1:87)

Size: 18'-4" x 36'-0" and 14'-5" x 20'-9"

Prototype: AC&Y

Locale: northern Ohio

Era: 1940s through 1960s

Style: walk-in

Mainline run: 290 feet planned (120 feet operational)

Minimum radius: 28"

Minimum turnout: no. 6 (some no. 5 wyes)

Maximum grade: 1 percent

Train length: 9 feet

Track: codes 83 and 70

Benchwork: lightweight L-girder sections

Height: 52"

Roadbed: HO and N foam roadbed over Homasote on plywood

Scenery: foam board

Backdrop: rolled aluminum sheet

Illumination: fluorescent and light-emitting-diode strips

Control: NCE DCC

aluminum sheet stock purchased in rolls that are easily painted with latex paint. Eastern Ohio is hazy and humid in the warmer months, so I used white to cut the intensity of the sky-blue paint. Conversely, western Ohio has many cloudless days with bright blue skies.

In both locales, the horizon is white with darker shades of blue added toward the top. Striated cirrus clouds are common in summertime Ohio. I'm still experimenting with printed backdrop scenes. Some locations feature photos from prototype locations that I had printed in large format at the local drug store.

Choosing an era

I favor modeling a broad era: the mid-1940s though the early 1960s. This captures many of the milestone events in AC&Y's history – the arrival of first FM diesels in January 1948, for example. AC&Y's signature yellow PS-1 boxcars first appeared in early 1962.

This wide period allows train consists to be tailored. I maintain build and reweigh dates of my extensive freight car roster. The last AC&Y steam locomotives were retired in 1955, so a steam-train consist will only handle cars from earlier years.

The AC&Y Historical Society (www.acyhs.org) also has a robust archive that was recently placed with the University of Akron. The organization has traffic and interchange data with routings. For instance, AC&Y originated livestock moving to eastern markets via interchanges with the Pennsylvania RR (PRR) at New Washington and the NYC at New London, Ohio. Having access to this essential information makes operating more fun and historically accurate.

Running trains

The AC&Y was a timetable-and-train-order (TTTO) railroad. I've not held an actual operating session yet, but I do enjoy running trains and

light-emitting diode (LED) strip lights attached to the bottom front of the fixtures. The basement is a finished recreation room, so I didn't want to add permanent fixtures.

Valances are 18" x 84"-long white foam boards hung with oversize paper clips, wire, and C-hooks screwed into the plaster ceiling. The valance not only adds additional brightness to the scene but also muffles any hum from the fluorescents.

A simple backdrop

The backdrop is as simple as the valances. I used 24"-wide white

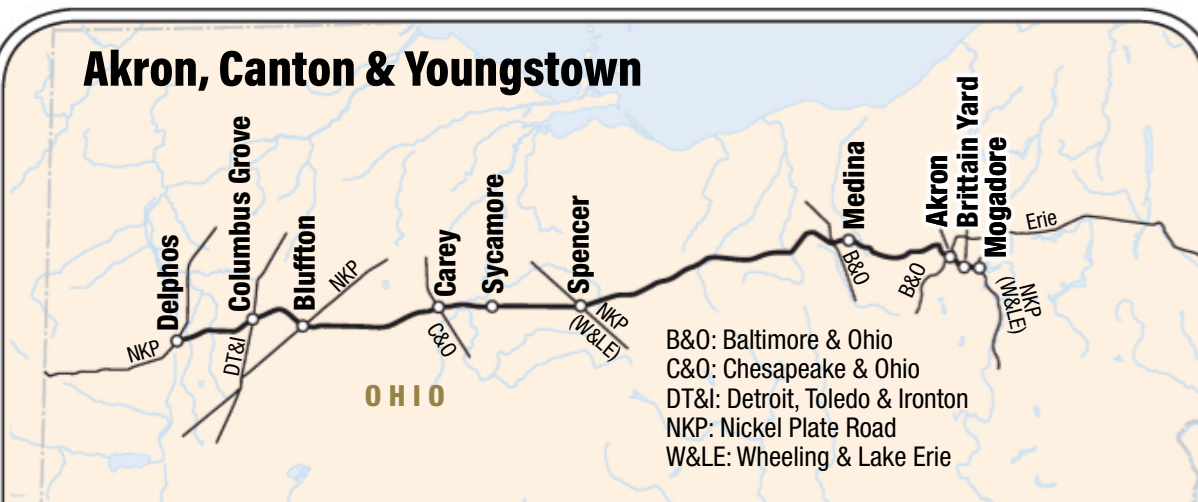


6 An overview of the Spencer, Ohio, area of the layout as it resides in Bob's basement. At right is the entrance door to the Akron and Brittain Yard portion of the railroad. Bob Lucas photo

Learning points

- Frequent relocations need not prevent enjoyment of our hobby.
- Careful planning may allow sections of previous model railroads to become key parts of later layouts.
- Railroad-specific historical societies and online chat groups have eased the research chores.
- There are often commercial models of equipment for smaller railroads.
- There are numerous smaller prototype railroads that make excellent modeling candidates.

Akron, Canton & Youngstown



The full-size AC&Y

Chrome-yellow Alco and Fairbanks-Morse diesels. Handsome Lima Mikados. Connections at 22 points with nine railroads. A right-of-way with lofty bridges and more than a curve a mile. This was the Akron, Canton & Youngstown (AC&Y).

The Akron, Canton & Youngstown was a single-track railroad spanning northern Ohio from Akron to Delphos. The AC&Y was organized by Canton and Akron industrialists in 1907. In 1913, feasibility studies showed the extensions to Canton and Youngstown would be a grave financial mistake. The AC&Y thus became best known for the places it *didn't* go.

The AC&Y's visionary management foresaw westward expansion through acquisition of the Northern Ohio Ry. (NOR). In 1919, negotiations with Lake Erie & Western, its parent New York Central, and the U.S. Railroad Administration (this was during World War I) for control of the NOR took place. Closing occurred the day federal railroad oversight was lifted – March 1, 1920. Overnight, the AC&Y became a 169-mile Class 1 railroad.

In the postwar years, the AC&Y continued roadway improvements and also invested in new freight cars, four ex-NKP Mikes, and six new steel cabooses. New industry was attracted to East Akron and Medina.

In October 1964, the Norfolk & Western absorbed the AC&Y, Nickel Plate Road, the Sandusky line of the Pennsylvania RR, Pittsburgh & West Virginia, and Wabash. While the identities of the other roads vanished after the N&W merger, the AC&Y remained an autonomous entity because the N&W saw the AC&Y as a well-managed railroad that held the large share of the Akron freight market with many loyal customers.

In May 1990, Norfolk Southern announced the sale of rail assets in Eastern Ohio to Wheeling Acquisition as the core of a new regional railroad. While the AC&Y is gone, its right-of-way and proud legacy are still present within the “new and improved” Wheeling & Lake Erie, which operates the remaining 112.7-mile line segment, benefiting from the AC&Y's prudent management. – *Bob Lucas*



A 1964 overview of Brittain Yard in East Akron, Ohio, shows the railroad just prior to the Norfolk & Western merger. Doug Leffler photo



7 A pair of FM diesels return eastbound from the Pennsylvania and Nickel Plate Road interchange with freight No. 90. The diesels are on their way to the AC&Y's Brittain Yard in East Akron, Ohio.

switching industries. This will be enhanced by a pending extension of the layout to Carey, which is already within reach.

Carey would provide a temporary staging yard on the west end until the main line reaches the NKP connection at Delphos. Carey was a crew change point and serviced interchange traffic to and from the Chesapeake & Ohio (C&O) plus National Lime & Stone and Wyandot Dolomite.

The prototype schedule showed timetable meets at several intermediate points (copies of several prototype employee timetables are available at the AC&Y RR Historical Society's website). I have an extended passing track at Spencer, and there will also be 18-car sidings at Plymouth/New Washington, Carey, and Columbus Grove in addition to Delphos and Brittain Yard. Most other locations have shorter runaround tracks. New London, Carey, and Delphos had wyes to turn power.

Once the track is complete from Delphos to Brittain Yard, I envision operating sessions featuring AC&Y's twice-daily road freights plus local turns at Carey and Brittain. AC&Y trains 90 and 95 were mixed trains with timetable mail and railway express stops, but few passengers.



Most of my locomotives are sound-equipped and include Pyle National Gyalites on the FM hood units.

Typically, the AC&Y handled symbol road freights with an FM H20-44 as the lead unit followed by an H15-44 or H16-44, a so-called FM multiple. Single-unit FMs handled extras, local turns, and other assignments.

I model in HO, but motive power for the AC&Y is also available in other scales. Atlas offers the H15-44 and H16-44 in both N and HO painted for the AC&Y. Bachmann has the later high-side H16-44 carbody in HO. A Key Imports brass model is the only source for the H20-44 heavy-duty road switcher in HO.

In the steam era, Class R 2-8-2 light Mikados held road assignments, double-headed on occasion. Class M and O 2-8-0 Consolidations handled lesser trains. Six Class L 0-8-0s plus two Alco diesel switchers handled Brittain Yard chores and local industrial switching in East Akron. Atlas and Bachmann offer the Alco S-2 in N and HO. The latest model from Atlas, an RS-1 in both HO and N, comes factory-painted as AC&Y no. 102.

A few years after the 1964 merger into the Norfolk & Western, the FMs were retired. The AC&Y utilized former NKP Geeps leased from N&W to handle road traffic; Alco S-2s were in charge of the local switching.

Looking back, looking ahead

A 30-year career in highway transportation, rail freight marketing and



8 Fairbanks-Morse H20-44 no. 501 leads H15-44 no. 200 across brick-paved West Market Street in Akron, Ohio, with westbound freight No. 95. The Beloit, Wis.-built diesels featured opposed-piston diesel engines.

sales, strategic planning, and logistics has solidified my choice to model the AC&Y, a little-known Class 1 railroad with a well-documented history. The road features many excellent LDE candidates, including both rural and industrial scenes.

Operation is simple and enjoyable. The services the AC&Y provided are easily modeled. The railroad had a diverse traffic mix and a loyal customer base. No single shipment category or car type was dominant. The railroad was well managed and profitable. About 30 percent of the AC&Y's tonnage was overhead ("bridge") traffic moved between interchange connections with the Detroit, Toledo & Ironton (DT&I); PRR; NYC; B&O; C&O; NKP; and Akron & Barberton Belt. The

locomotive and revenue freight car roster featured new and secondhand equipment with many surprises.

I'm fortunate that I was introduced to the AC&Y in my youth, and I look forward to continuing my journey of modeling Ohio's Road of Service. I hope this article encourages you to give it a closer look. **MRP**

Bob Lucas passed away in June 2018. He retired after a career in surface transportation, including railroad employment and military service. Bob lived in Kingwood, Texas, with his wife, Judy, and near their daughter and two grandchildren. His other interests included travel, railroad and industrial history, and sports. Bob also managed the AC&Y Historical Society magazine.



I Brooks Stover's Buffalo Creek & Gauley model railroad continues in S scale, but even in its new, smaller location, Dundon, W.Va., seen here after only about a year of construction, is truer to the prototype than on Brooks' earlier layout.

Same railroad in a smaller space

The S scale Buffalo Creek & Gauley adapts to its new home

By Brooks Stover//Photos by the author unless noted



Learning points

- A relocation offers new modeling opportunities.
- Downsizing a house doesn't necessarily mean downsizing one's favorite scale or giving up prototype fidelity; the arrangement of the scenery and structures at Dundon is more prototypical than on the original model railroad.
- Taking a fresh look at your favorite prototype may uncover new opportunities.
- Less railroad means more time for each square foot.
- Long operating sessions may prove uncomfortable for older crew members.

the home. I'm forever grateful to my wife for her support and understanding in this regard.

Scale? Prototype?

Since I was starting with a clean slate, I considered all the options – changing scales, changing prototypes, and even doing both simultaneously. I was concerned about fitting a satisfying S layout in the new 12 x 25-foot area. So I bought an HO steam locomotive, several freight cars, some track, and a small structure kit. I assembled, painted, and weathered the items to get a feel for modeling in a smaller scale.

The exercise confirmed my feeling that the smaller models lacked the physical presence I so appreciate about S scale. Moreover, I didn't want to give up the significant advantages modeling in S provides for aging eyes and hands.

I was also concerned about selling used and scratchbuilt S equipment and structures and buying and building new ones in a new scale. These factors, plus the desire to have an operating layout up in a reasonable period of time, led to the decision to build a fourth representation of the BC&G in S.

Lessons learned

I regularly sought feedback from those who operated on my "big" BC&G about what they liked most about the experience, and where they thought changes could be made to improve things. There was unanimity concerning the value of the brightly lit train

The 18.6-mile Buffalo Creek & Gauley (BC&G) has been the subject of my research and modeling for about 40 years (www.buffalocreekandgauley.com). This West Virginia coal-hauling short line, and the sister logging operation of its parent Elk River Coal & Lumber Co. (see "Two railroads, one owner" on page 42) have been the subjects of the three S scale (1:64, or 3/16" per foot) model railroads I've built.

The most recent was a 25 x 44-foot rendition of this interesting railroad. [See "Steam's last days on a West Virginia short line," *Great Model Railroads 2011* – Ed.] That layout was started in 1998 and mainly finished by 2010. At that point, my focus shifted to building locomotives and rolling stock and to hosting operating sessions.

A milestone was reached in April 2016 when the 50th operating session

was held on the BC&G. Over the years, there was never an electrical, electronic, or mechanical problem that prevented operation.

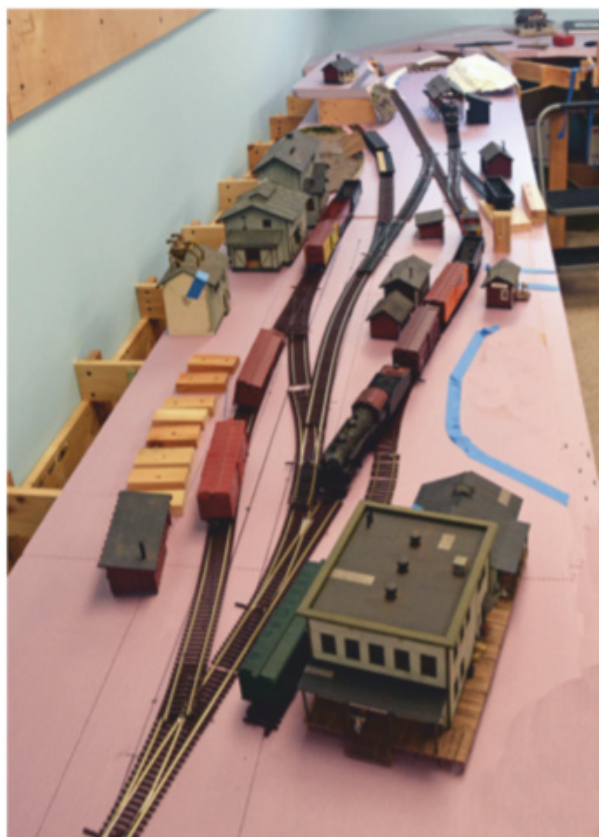
Time to downsize

The railroad was in the basement of the home where we raised our two daughters. Empty nesters for many years, we no longer needed such a large home. My wife, Carol, and I decided it was time to move into a smaller home that was closer to one of our daughters and her family.

We had a new home built to better meet our requirements. This was an important part of the decision for me, because finding an existing smaller home with appropriate space for a new layout, crew lounge, and shop would be challenging. Fortunately, I was able to design these three spaces concurrently with the design of the other parts of



Brooks' objective is to re-create in a smaller footprint the overall ambience and laid-back operating experience of the "big" version of the S scale (1:64) BC&G, seen here.



2 The track arrangement at Swandale was mocked up and refined on a section of 1½" extruded-foam insulation board temporarily supported on risers clamped in place using structures from the old layout and flextrack.

room, with its carpeted floor and finished ceiling, and the overall "furniture" look of the layout.

There were also positive comments about having French doors with glass panes at the entrance to the room that presented the layout as a "piece of art behind glass." The low ratio of track to scenery, the 4-foot or wider aisles, and the absence of duckunders also got high marks. Operators appreciated the comfortable crew lounge adjacent to the layout room, as the social aspects of model railroading are half the fun!

Operating sessions on the big BC&G often lasted 3½ hours or longer. I heard feedback that as operators got older, they were finding it harder to remain on their feet for that long, even on the carpeted floor – something I was experiencing myself. I was comfortable designing a layout that would occupy one or two operating crews for two hours instead of four crews for twice that long. This would be a boutique operating experience.

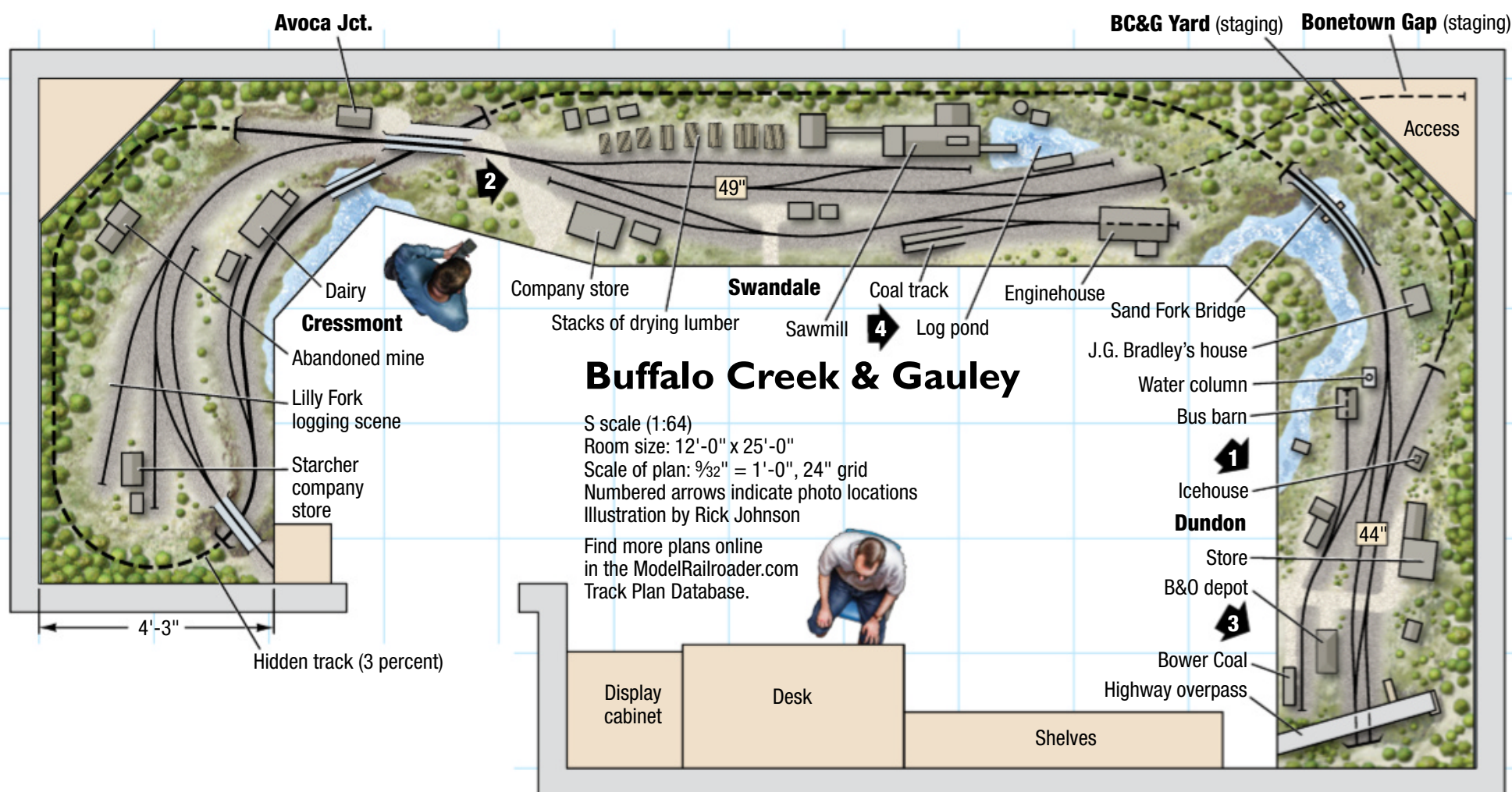
I also planned to be an operator more often on the new layout; the size and complexity of the prior one meant

I normally served as a roving superintendent, not as a crew member.

Other criteria

For their simplicity and reliability, I used manual ground throws on the big layout and planned to do the same on the new one. Lining a switch on an unfamiliar layout is easier to do with ground throws than it is to translate push buttons on a fascia-mounted track diagram to the layout above. However, ground throws mean all turnouts must be within easy reach. The height of the track on the new layout would range between 44" and 49" above the floor. At this height, most operators can comfortably reach in about 30" to access ground throws or do uncoupling.

Amazingly, 14 miles of the original 18 miles of BC&G track are still in place more than 50 years after the railroad closed. In 2007, I got to ride a speeder along the entire length of the railroad and experience the beauty of the Appalachians through which the BC&G meandered. The railroad ran along its namesake Buffalo Creek for much of its



length. From track level, all that can be seen are the ridges on either side.

On the big BC&G layout, I represented this by having mountains rise above eye level nearly everywhere along the walls and down the center of the peninsula. I found I could create the impression of good-sized mountains in shallow spaces.

In the new design, I maintained at least 6" between visible track and the wall to provide space for mountains that would rise to meet the painted sky backdrop giving operators the feeling of standing in the creek valley.

On the speeder ride, I saw first-hand how in many places the BC&G track was precariously perched on a narrow ledge between a rock face and the creek. I wanted to reproduce this by modeling the creek along the front edge of the layout in several places. To provide space for scenery below track level, I maintained a minimum of 6" between the track and the front edge of the layout. This added space also greatly reduces the chances that an errant elbow will derail a train.

Layout room planning

As the planning progressed, I made a decision that would dramatically affect the ultimate layout configuration: I included a desk and some shelving in the layout room so that my BC&G reference material and memorabilia collection would be nearby. My experience is that visitors enjoy seeing the prototype photos that led to the

The layout at a glance

Name: Buffalo Creek & Gauley

Scale: S (1:64)

Size: 12 x 25 feet

Prototype: Buffalo Creek & Gauley

Locale: West Virginia

Era: 1963

Style: shelf

Mainline run: 50 feet

Minimum radius: 21" (hidden), 36" (visible)

Minimum turnout: no. 5

Maximum grade: 3 percent

Train length: 5'-6"

Benchwork: Open grid supporting 1/2" Homasote over 1 1/2" foam subroadbed

Height: 44" to 49"

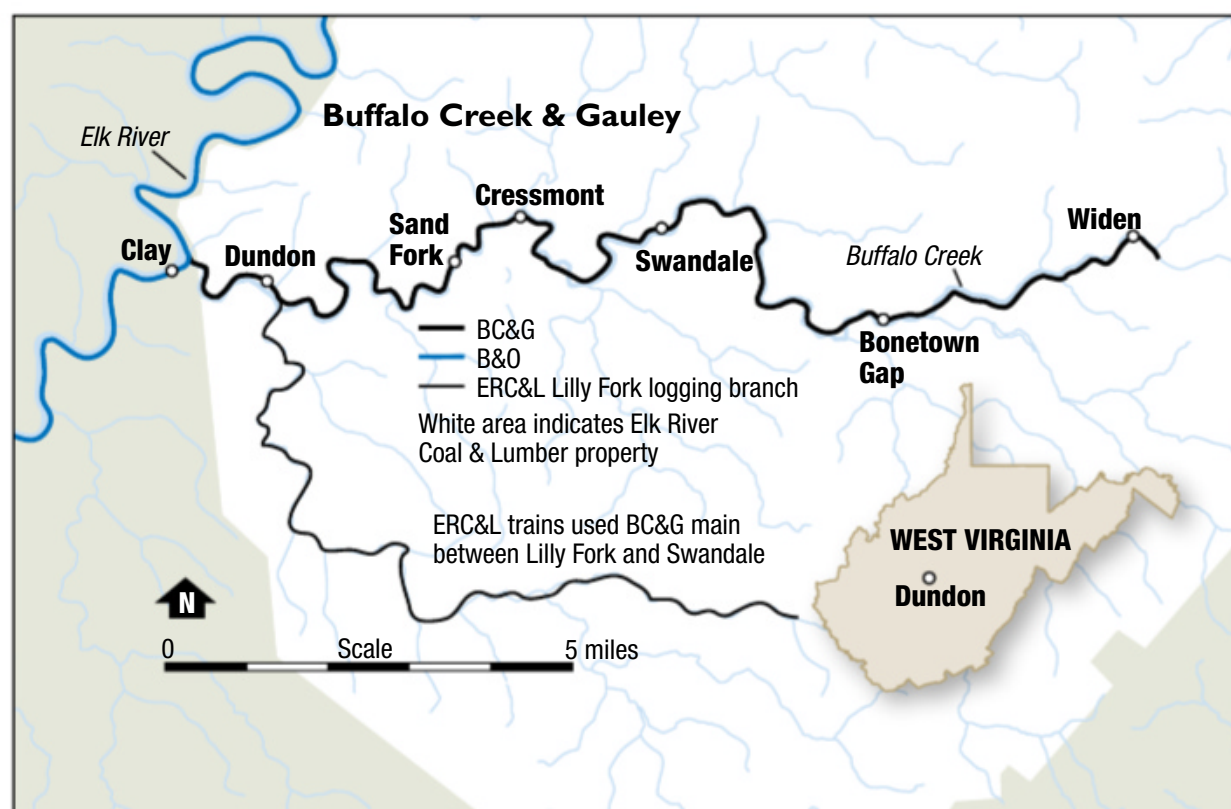
Roadbed: cork

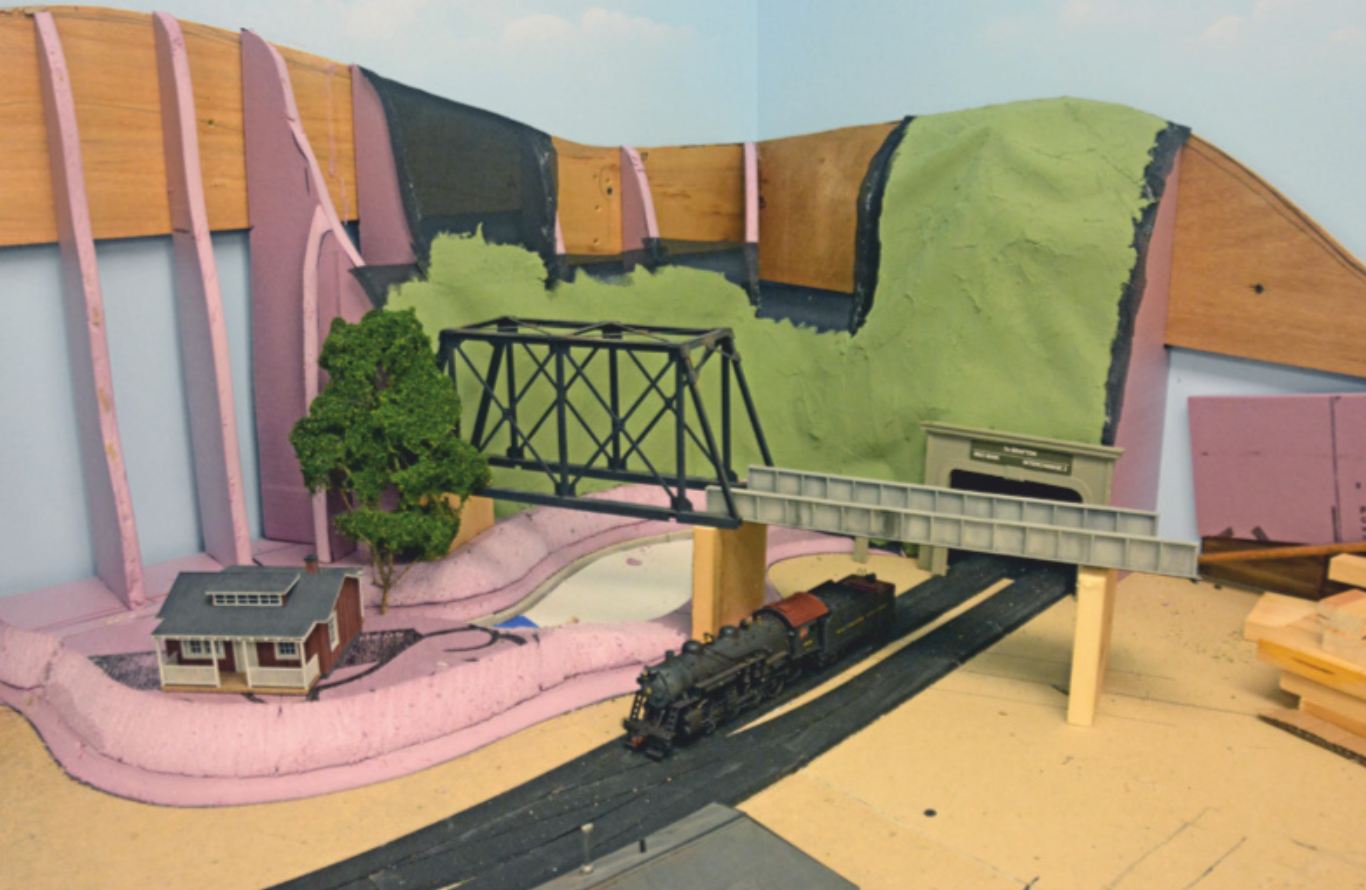
Track: code 138

Scenery: paint on screen over foam profiles

Backdrop: hillsides rising to sky painted on walls

Control: NCE DCC





3 The foam-board landform construction techniques Brooks is employing are apparent in this view of the overhead bridge at Dundon that carried a road over the railroad and Elk River. The plastic screening material is covered with thick Homax texture paint to create a hard shell, a technique suggested by fellow S scale modeler Bob Stelmach.

Two railroads, one owner

The story of the BC&G can't be told without also including the Elk River Coal & Lumber (ERC&L) logging operation. While the BC&G's main task from 1904 to 1963 was hauling coal from the Rich Run Mine at Widen to the Baltimore & Ohio interchange at Dundon, it also carried finished lumber from the sawmill at Swandale to the interchange. The task of getting logs from the woods to the sawmill was handled not by the BC&G's rod engines but by geared engines, and later a small Plymouth diesel lettered for ERC&L.

The ERC&L logging trains shared track with the BC&G between

Swandale and Avoca, where the logging branch headed south. I represented both BC&G and ERC&L operations on my previous layouts and plan to do so on the new one, as the two are integrally entwined.

In the 1950s and '60s, BC&G locomotives carried a diamond logo, and ERC&L engines had a circular insignia. Both railroads, the coal mine and sawmill, and all the residential and commercial structures in the towns served by the railroads were owned by a corporate entity called the Elk River Coal & Lumber Co. – *Brooks Stover*

models on the layout, and I wanted them close at hand. I also needed to spend time preparing my collection of photos for contribution to appropriate libraries and thought it would be nice to be able to do that work in the presence of the trains.

The challenge was to come up with a track plan with satisfying operations in a 12 x 25-foot space shared with some furniture. I researched designing small layouts, including reading Iain Rice's excellent book, *Compact Layout Design* (Kalmbach Books, 2015).

Following the prototype

The prior layout represented the BC&G in 1958. Quite fortuitously for

me, the prototype went through a downsizing of its own in 1963 when the Rich Run coal mine in Widen at the far end of the railroad, by far its biggest source of revenue, closed down. After 1963, BC&G trains ran only 9 miles to Swandale, where the ERC&L operated a big band-saw mill, thus cutting the length of the BC&G in half.

As there was no wye at Swandale, engines couldn't be turned, and so ran tender-first back to the B&O interchange at Dundon. I could design a simple point-to-point plan with runaround tracks at each end. I was concerned about BC&G Consolidations running tender-first half the time, but I concluded that if it was good enough

for the prototype, it would be good enough for me. The logging locomotives were never turned.

When the railroad downsized, the trains were downsized, too. The railroad's 60-car coal trains of the golden years of the '50s were replaced by 6- to 8-car trains of boxcars and bulkhead flats hauling finished lumber. Hoppers also appeared in the consists, as the mountains of wood chips created at the sawmill were now sold instead of burned.

These shorter trains, still powered by 2-8-0 Consolidations but running just three days per week, would be perfect for a downsized version of the BC&G. The logging operation continued with a Climax, a Shay, and eventually a 45-ton Plymouth diesel (see *Narrow Gauge & Shortline Gazette*, September/October 2016).

The shortened BC&G closed for good in 1965, but it was reopened under the ownership of Majestic Mining Co. in the early 1970s to haul coal from a small load-out facility located at picturesquely named Bone Town Gap. Motive power included a 65-ton center-cab Whitcomb appropriately nicknamed "Peanut" because it quickly proved too small to be practical. A second engine was Alco RS-1 9185 leased from the Baltimore & Ohio. I've built models of both these engines (see the January 2017 MR for the Whitcomb story and May 2015 *NMRA Magazine* for the RS-1 story).

I wanted to include these locomotives and some representation of the Majestic Mining coal business in an operating scheme even though they came later than the 1963 timeframe. Lastly, even though the Mack rail bus service ended in 1958, I wanted to include it, as running this signature vehicle is always a favorite assignment for crews.

Planning around operations

With the era selected and the trains I wanted to operate identified, I developed the track plan and an operating scheme to accommodate them simultaneously. This ensured that the locations and lengths of staging, runaround tracks, and sidings would support interesting, prototypical operations (see "Planning for operations" on page 44) on a small layout where every inch counts. I wanted a balance of operating fun, prototypical fidelity, photographic opportunities, and the overall visual impact of the layout in the room.

I developed a track plan in pencil on vellum using templates for turnouts to be sure I wasn't cheating. Having



Deliveryman Charles Stidom's 1949 "shoebox" Ford is parked in front of the company store at Dundon. The B&O depot is at right near the overhead road bridge. John Lanham's house is at left. Judy Baughman collection

designed my big layout this way 20 years ago, I had a good sense of how things on a drawing would look in three dimensions. Because most of the structures on the big layout would be reused, I was able to accurately represent them on the drawing.

Nonetheless, I did considerable tuning of the track plan once construction began and I could see things in 3-D. I frequently mocked up large portions of the layout using foam supported on risers held temporarily in place with clamps. This made it possible to confirm all ground throws could be comfortably reached and desired scenic features included.

The layout runs along three walls of the room. Dundon and the interchange with the Baltimore & Ohio are represented along the wall at the far end of the room. This scene features the company store, team track, Bower coal dealership, and B&O depot and interchange tracks. As there wasn't room to include the BC&G's yard and enginehouse between Dundon and Swandale, these are represented by two hidden staging tracks.

Leaving Dundon, the main line crosses the 142-foot Sand Fork bridge



Brooks took this photo in 2007 on a speeder trip to record the feeling of the railroad snuggling up against towering rock walls.

and disappears. The track reappears at the opposite end of the room, crosses a bridge, and arrives at Cressmont, where there's a short siding serving the small dairy. Beyond Cressmont, the track passes under the logging branch and begins a 3-percent climb before disappearing again. It emerges at Avoca Junction, where the branch to Lilly Fork logging camp joins the main. The track levels out and crosses over itself on another bridge, arriving at Swandale, the end of the railroad.

Swandale, the layout's visual and operational focal point, is in the middle

of the long wall. There's plenty of inbound and outbound traffic comprising both BC&G freight and Elk River Coal & Lumber log trains. There is a myriad of switching opportunities at the log pond, mill dock, wood-chip loader, stacks of drying lumber, company store, enginehouse, and coaling track. Even though this layout is smaller than the prior one, this new rendition of Swandale actually has more car capacity and is a more accurate representation of the prototype in terms of track arrangement and structure locations.



4 The open-grid benchwork and the profile boards that determine that tops of the high ridges that frame the creek-following right-of-way are evident in this early view of Dundon, W.Va.

Planning for operations

I developed the operating scheme for the new layout simultaneously with the development of the track plan. The location and capacities of runaround tracks and sidings were established with specific train movements in mind.

Operations on my previous large BC&G layout used prototype-inspired printed switch lists, and trains ran on a schedule controlled by a fast clock (see “Adding operations to a model railroad,” December 2009 *Model Railroader*).

I plan to use a similar approach on the post-1963 layout. But it won’t

be until the layout is operational that I’ll determine whether trains should run on a fast-clock schedule or simply run in sequence.

I find that having a detailed vision of how the new railroad will operate isn’t only critical in the design stage but also is a strong motivator to getting it built. Seven different locomotives lettered for three railroads can be operated in each session, and all trains are representative of ones that ran on the real BC&G at one time or another during the line’s last years of operation.

– Brooks Stover

Beyond Swandale, the main line disappears into hidden staging that represents the line that originally continued to Widen but now reaches only to the coal operation at Bone Town Gap. This hidden staging is stacked above the BC&G yard, and both are accessible from behind.

This track plan has the represented towns in the correct location relative to each other. Having the track loop over itself means that the east-is-always-to-the-right concept was sacrificed, but it was an easy tradeoff to get a mainline run of nearly 50 feet, a 5" variation in track elevation, and more operational interest. Rather than more track, I opted for a generous space down the

center of the room to create a comfortable environment for operators, for visitors viewing the layout, and for taking photos.

Keeping enthusiasm up

One concern I had about building a compact version of the BC&G was whether the enthusiasm for the project would be high enough to sustain my interest. The new railroad would in many ways not be as impressive as its predecessor, and building at least some of it might feel like redoing what I’d previously built. Would these factors reduce my motivation? I identified several elements that would provide new modeling challenges:

- The new layout uses extruded-foam insulation board instead of plywood, which means learning new construction techniques involving new tools and adhesives. On the big BC&G layout, land contours were formed using cardboard strip grids covered with brown paper and plaster cloth. I’m hoping to experiment with extruded-foam insulation board and other materials. Early phases of construction on the new layout have shown learning to use new materials to be challenging and enjoyable.

- Fox Valley Models has a new line of code 138 S track and DCC-compliant turnouts. This new track has a more realistic appearance than the track I used previously and will in itself provide a new look to the layout.

- The 142-foot Sand Fork bridge originally had a beautiful cut stone center pylon. The bridge was dynamited during a labor dispute in 1952, and for eight years the rails were supported on temporary wooden trestle bents. In 1960, new steel girders were installed that were supported on a rather unattractive poured concrete pylon. I need to decide which of the three versions I want to model. Or should I model it during the repair with one span timber and the other with the steel girder installed? It would be a great way to tell the story.

- The Swandale open-air engine-house was enclosed in the early 1960s, and I want to build a new model accurately representing the structure as it was during my modeled period.



The Sand Fork bridge, with its temporary timber bents, supports Buffalo Creek & Gauley no. 4 as it pulls a National Railway Historical Society fan trip extra in 1955. Doug Andre photo

- Outside of Swandale, there was a unique bridge shared by both the railroad and a dirt road. I would like to include that interesting feature.

- The BC&G's tiny 4-wheeled rail bus "Motor B" was used as a mobile storage shed in the later years. I couldn't see building a powered model of this bus, as it's small even in S scale, but building it as a trailer would make for a unique model.

- I plan to add interior details to more structures and add more interior and exterior lighting as well. On a smaller layout, there should be time for developing such details.

- I'd like to experiment with new techniques for making more realistic foreground trees.

- On the big layout, I used Enviro-Tex for modeling water, and all the water appeared as if it were perfectly

still. I want to experiment with some new products and techniques to model moving water in at least some places on the new layout.

- Finally, I'm planning on adding more weathering to structures and rolling stock and more grass and weeds along the track to represent the lower levels of maintenance of the final years of operation.

In conclusion

It's amazing that a railroad that at its peak was just 18.6 miles long, along with its sister standard gauge logging operation, has provided so many years of model railroading enjoyment. I spent many wonderful hours building, photographing, and sharing the big BC&G with other modelers during operating sessions and through published articles.

I'm thrilled that the prototype went through a downsizing of its own during its final years, as the resulting 9-mile-long railroad looks to be a perfect subject for the new layout. I'm looking forward to the more compact rendition of the Buffalo Creek & Gauley providing many more years of hobby enjoyment for me as well as for those who will see and operate it. What more could I ask of a hobby? **MRP**

Brooks Stover retired as an engineering executive from General Motors. His love of trains started with a childhood American Flyer layout, and he has modeled exclusively in S scale ever since. Brooks earned the NMRA's Master Model Railroader certificate, one of the relative few S gaugers to do so, and co-authored Buffalo Creek & Gauley in Color (Morning Sun).

An hour of operation in 13 feet



Modeling a freelanced Northeastern U.S. short line – in Belgium

By Sébastien Georges//Photos by the author

I've always had a passion for model railroading. I live in Belgium, and I've spent many years modeling European railroads, especially German and Swiss narrow gauge lines.

Some time ago, however, I decided to try a new modeling challenge. I've always been attracted to North American railroads, which are very different from the railroads we see in Europe. The many North American prototype Class 1 railroads, as well as regionals and short lines, offer an inexhaustible source of inspiration, and they open a lot of what are for me unexplored horizons. It was time to discover this new world, so I built my first U.S. switching layout in HO scale.

Choosing what to model

Although New York's Finger Lakes Ry. (FGLK); the New York, Susquehanna & Western (NYSW); and the Mohawk, Adirondack & Northern (MAN) are among my favorite short lines, I decided not to model a specific railroad. Rather, I chose to model a part of a freelanced short line, the Lake Valley & Northern (LVN), which operates in the Northeast near the Canadian border. I'm also a Canadian National (CN) fan, so modeling this setting allows me to interchange with the CN.

On my layout Lakemont is a small town served by the LVN. The track plan is rather simple. There's a main

track, runaround, and sidings. The LVN serves several customers there, including a grain elevator, a packaging factory, a fertilizer plant (represented by an unloading pit with an auger), and a team track with unloading dock.

There are seven car spots on the layout. I have a preference for covered hoppers and boxcars, which influenced the choice of rail-served industries I wanted to model.

Lightweight construction

As I did for my previous layout, I wanted this new one to be sectional, light, and portable, because I do some modeling and scenery work outside to keep dust out of the layout room. The



1 The Lakemont Packaging warehouse, built from medium-density fiberboard (MDF), styrene sheet, and siding material, is still under construction. It's one of several rail-served industries on Sébastien Georges' HO switching layout.

layout is comprised of four sections, each built as a sandwich of pine lumber, plywood, and extruded-foam insulation board panels.

First, I formed a frame out of lumber. On top of this frame, I attached a sheet of thin plywood, on which I glued the extruded-foam insulation board panel to serve as the scenery base. I made the front fascia of the layout section out of medium-density fiberboard (MDF) cut to fit.

When they were finished, I hung the four layout sections on shelf brackets while room preparation got underway.

Track, scenery, and wiring

I used Peco code 83 flextrack and no. 6 turnouts. I glued the track on cork roadbed – 4mm for the main line and 2mm for sidings. Switch points are motorized with servos from ESU (Elektronik Solutions Ulm).

The layout lighting consists of two flexible light-emitting diode (LED)



2 Having just left Lakemont, HATX GP40 416 crosses the Pakanak River running southbound. It's an Atlas model repainted in a CSX scheme. The model was also superdetailed with parts from Details West, Detail Associates, and Cannon & Co. Sébastien weathered the Geep with oils, acrylics, and pigments.



3 The compact HO railroad nestles along two walls. The drawers are used to store the rolling stock, tools, supplies, and books. Note the neutral hues used for the fascia and backdrop.



4 An overview of the south end of the railroad shows the fertilizer-unloading spur, the small yard office, a blocked-off grade crossing, and UStronics, a soldering-tools factory that's not rail-served.

Learning points

- Perhaps out of necessity, modelers who live outside of North America tend to do a better job of designing, building, and enjoying smaller model railroads.
- Prototype-based freelancing can provide just enough latitude to create a realistic model railroad without the need to obtain information on every key facet of a specific prototype.
- A smaller railroad allows more time to detail equipment, structures, and scenic features.
- One-person operating sessions on a small layout can offer more than an hour of enjoyable operating challenges.

strips of different color ranges, including warm white (3600K) and cold white (6000K). The mix of those strips looks close to daylight.

Most of the layout structures are scratchbuilt. The two warehouses are made from MDF, styrene sheet, and siding material. I built the yard office from Northeastern Scale Lumber wood sheets and milled siding. The three grain silos are from a Walthers kit (no. 933-3123). I have used parts of several kits to obtain the desired height.

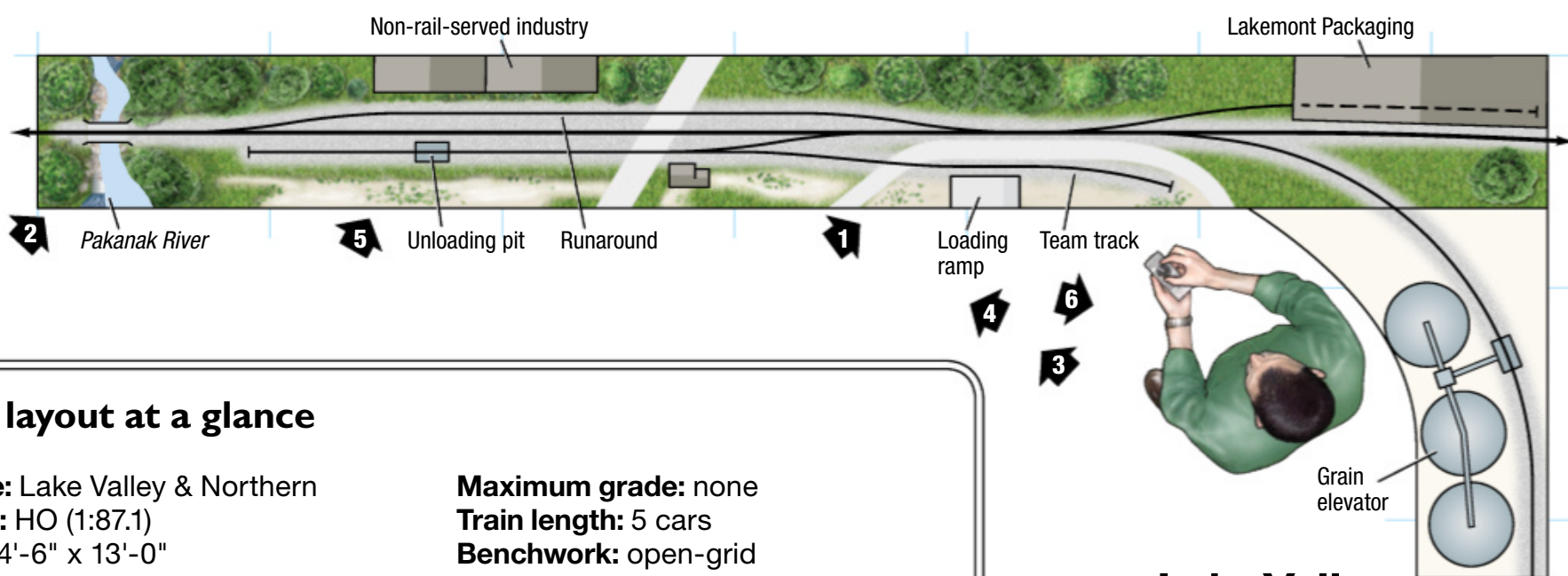
For me, scenery is the most important part of my model railroad. I've divided the layout into two general areas: a rural scene that features the river and runaround track; and a more industrialized scene that includes the large packaging factory and grain elevator complex.

I used a variety of products to model the layout's scenery. The grass

is from Silflor MiniNatur in different sizes and colors. Many of the bushes and trees are made from zeeschuim (Dutch for "seafoam," it's a natural plant product similar to Scenic Express SuperTrees).

I airbrush each tree with a coat of dark green acrylic paint. After that dries, I apply white glue, also with an airbrush, to attach the foliage mix. This mix includes flocking and foliage in various colors and textures from different manufacturers.

The layout is powered by Lenz Digital Command Control (DCC). The wiring is quite simple: RCA connectors at the ends of each section join a pair of bus wires that feed the entire layout with DCC power. All accessories (servos for switches, lighting, etc.) are controlled by ESU SwitchPilot decoders. All my locomotives have ESU LokSound V4.0 sound decoders.



The layout at a glance

Name: Lake Valley & Northern
Scale: HO (1:87.1)
Size: 4'-6" x 13'-0"
Prototype: freelanced
Locale: Northeastern United States along Canadian border
Era: late 1990s
Style: shelf
Mainline run: 13 feet
Minimum radius: 32"
Minimum turnout: no. 6

Maximum grade: none
Train length: 5 cars
Benchwork: open-grid
Height: 46"
Roadbed: cork
Track: code 83
Scenery: extruded-foam insulation board
Backdrop: painted room walls
Control: Lenz DCC

Lake Valley & Northern

HO scale (1:87.1)
 Layout size: 4'-6" x 13'-0"
 Scale of plan: 1/2" = 1'-0", 24" grid
 Numbered arrows indicate photo locations
 Illustration by Rick Johnson and Roen Kelly
 Find more plans online in the
 ModelRailroader.com Track Plan Database.

Operation

My layout is designed for a single operator. Since I have no space for a staging yard, I use the runaround track for this. I try to operate the railroad realistically. This makes the layout seem bigger than it really is.

I use a switch list to determine which cars will be picked up or spotted. A complete session may take more than an hour – not bad at all, considering the layout size!

Living far from what I'm trying to model can add considerable difficulty. Freelancing gives me enough freedom to reproduce my "own world" without an implied obligation to model a specific prototype about which information may be difficult to obtain.

At this writing, the layout is about 60 percent finished. The most complete area includes the runaround. The least complete part is the grain elevator – only the track is laid and the bins assembled. Although the railroad isn't finished, I'm very happy with the results achieved. I really enjoyed the different steps. Much work remains to be done; detailing a layout is a never-ending job. Building the grain elevator will be my next challenge, as well as weathering the rolling stock.

I would like to thank my friend, Jean-Claude Ballieux. We share a lot of information about modeling, and I appreciate his critical comments that help me to improve my modeling. **MRP**

Sébastien Georges and his wife live in Belgium, 19 miles from Brussels. He works as an accountant for an auto dealership.



5 Lake Valley & Northern's "newest" motive power is a well-worn GP10 rebuild from Illinois Central's Paducah, Ky., shops. Locomotive no. 8229 is an InterMountain model with Detail Associates wipers, Cannon & Co. radiator fans, an ESU LokSound decoder, and a "patched out" paint scheme.



6 A lot of work is still needed at the site of the grain complex on the lower leg of the L-shaped layout; only the three bins have been assembled. Sébastien is also adding an auger to unload feeds.

I This overview of the Reading's Linden Street freight station and car float slip in Camden, N.J., looks west toward the Delaware River. Mike Prokop modeled it in HO scale as it appeared in 1959. Almost no selective compression was required.



Marine operations in and around the Philadelphia waterfront weren't as extensive or complex as those in New York City, but they were no less interesting or diverse in their functions and activities. The Baltimore & Ohio, Reading Co., and Pennsylvania RR were the major participants in the Philadelphia and Camden, N.J., waterfront areas.

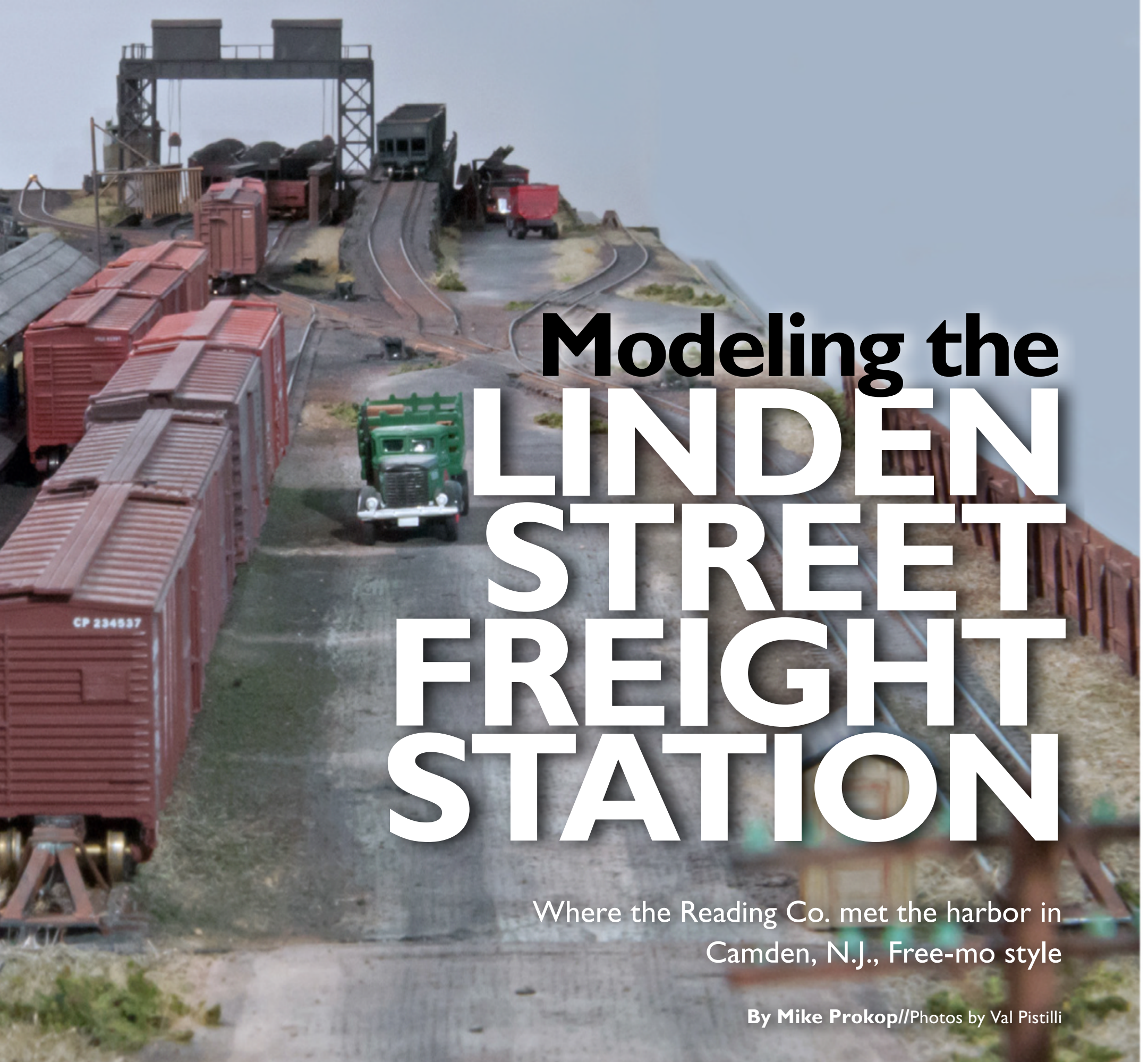
The Reading's Linden Street freight station was located at the end of Linden Street in the shadow of the Ben Franklin

Bridge on the Delaware River in north Camden, N.J. It was the only Reading property retained by the railroad in southern New Jersey after the formation of the Pennsylvania-Reading Seashore Lines in 1933. Constructed by the Philadelphia & Reading RR in 1891, the line resembled and functioned like compact railroad facilities along the New York waterfront that were isolated and served only by car-float operations.

Like its cousins in New York Harbor, Linden Street occupied only a small sliver of land on the Delaware River. Linden Street had a rail connection at its front gate on Delaware Avenue.

Early in its operations, the Reading served various customers in Camden that were close to the Linden Street facility, but after the consolidation and merger of the Pennsylvania and Reading into PRSL, freight was interchanged with the PRSL, which in turn switched Reading's customers outside the gates. Two notable Reading customers were Campbell's Soup and RCA Victor.

Linden Street handled general merchandise and coal. It advertised that freight shipments could originate at Linden Street and be transported all over the Reading system and, through its connections, coast to coast.



Modeling the LINDEN STREET FREIGHT STATION

Where the Reading Co. met the harbor in
Camden, N.J., Free-mo style

By Mike Prokop//Photos by Val Pistilli

Coal was a major traffic source. The Reading received vast amounts of anthracite and bituminous coal for residential and commercial heating as well as industrial power generation. Coal mined in northeastern Pennsylvania was transported southward to Port Richmond, Reading's massive port in northeast Philadelphia, loaded onto car floats, and sent down the Delaware River to Linden Street. Two large coal trestles on the property were the primary means of distribution, particularly to Campbell's Soup's powerhouse.

A two-track Howe truss bridge provided for inbound and outgoing

freight handled by car floats. Two tracks served the freight station platform, and an additional track adjacent to a cobblestone driveway provided for a public delivery siding (team track).

An overhead crane with both 5-ton and 20-ton capacity facilitated rail-to-truck transfer. Linden Street even boasted a small incinerator adjacent to the end of the freight platform for burning and disposing of freight dunnage. A couple of early boxcab diesels were usually assigned duties at Linden Street starting in the 1920s.

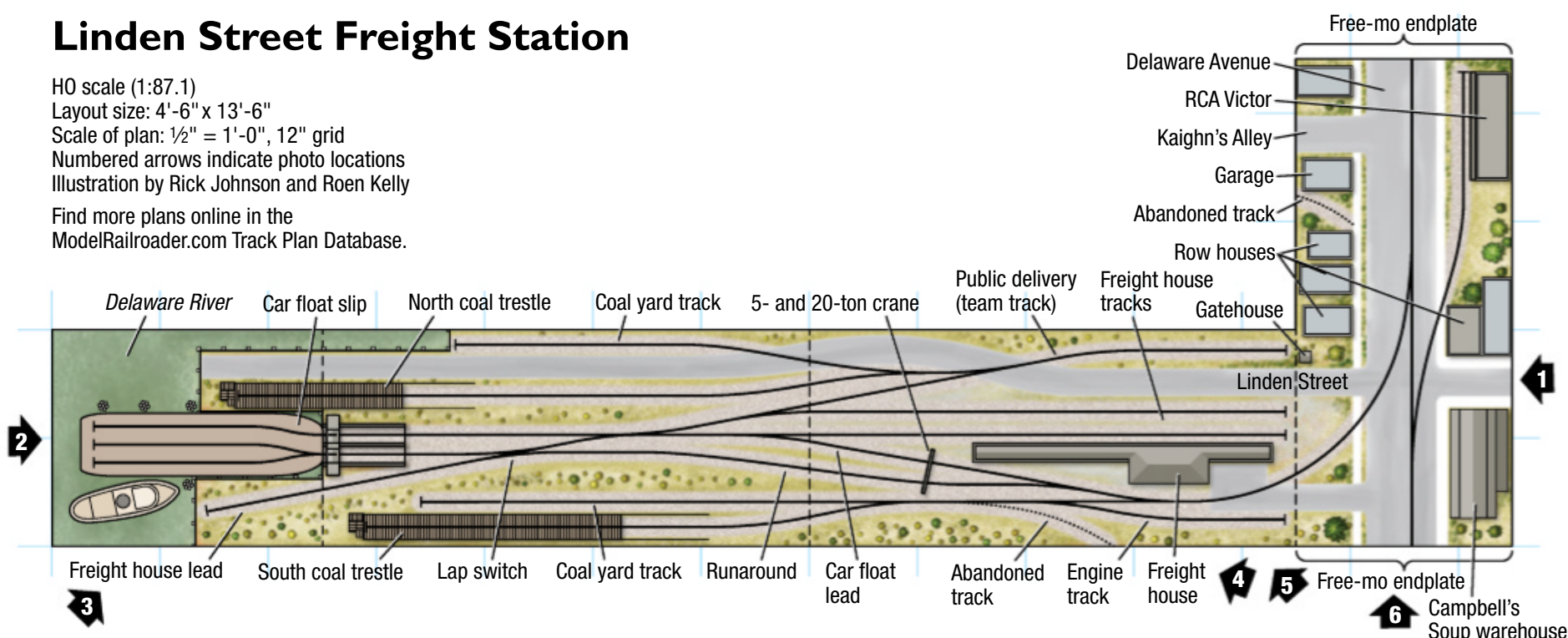
Today, the Linden Street Freight Station site is buried under a minor-league baseball stadium. Any sign of railroading activity in this area has been obliterated.

Inspiration

The New York City area's great waterfront and harbor were always sources of fascination. Trips on the ferries traversing the harbor presented a fantastic sensory impact – the smell of salt water, creosoted piers and pilings, and diesel exhaust of passing boats plus the chirps of sea birds – that still inspires me today. Combine

Linden Street Freight Station

HO scale (1:87.1)
Layout size: 4'-6" x 13'-6"
Scale of plan: 1/2" = 1'-0", 12" grid
Numbered arrows indicate photo locations
Illustration by Rick Johnson and Roen Kelly
Find more plans online in the
ModelRailroader.com Track Plan Database.



The layout at a glance

Name: Linden Street Freight Station
Scale: HO (1:87.1)
Size: 4'-6" x 13'-6"
Prototype: Reading Co.
Locale: Camden, N.J.
Era: 1959
Style: modular
Mainline run: not applicable
Minimum radius: 24"
Minimum turnout: no. 5
Maximum grade: none

Train length: not applicable
Benchwork: plywood and foam board
Height: 50"
Roadbed: foam
Track: code 83
Scenery: lightweight spackling
Backdrop: none
Control: Digitrax Digital Command Control

I desired. My Free-mo modules are the standard 24" wide with three sections measuring 54" in length; the Delaware River section is 30" long.

Compromises

Having the actual track plan as documented by Frank in 1959 would make you think the track planning chores were a piece of cake. But building my Free-mo modules turned out to be a bit challenging.

The first major consideration was the joining of the two main module sections in the middle of the freight yard. With 54"-long module sections, a length that would fit in my vehicle, there were nine tracks coming together at one joint. I didn't want it to cut through any turnout points or frogs, so some turnouts had to be shifted from the prototype plan. This didn't compromise prototypical operation.

Number 6 turnouts were used on the Delaware Avenue module to meet Free-mo standards, but no. 5s worked better for yard tracks and had the right look for confined waterfront tracks. I employed one lap switch in front of the car float bridge to save space and still maintain the prototypical functionality of the yard and car-float operations. Lap switches, which are two turnouts merged into each other, were common in waterfront terminals. I also slightly lengthened the north coal yard track to accommodate a few more cars and added a south coal yard track to enhance operations.

Structures

It's debatable which structure at Linden Street was more important to the railroad in carrying out the basic function of the facility, the main freight building or the car float. With two long

that with railroad infrastructure and operations, and for me the result is both exhilarating and inspirational.

I purchased *West Jersey Rails III* (West Jersey Chapter of the National Railway Historical Society, 2002). The feature that got most of my attention was an article on the Linden Street freight station, written and photographed by Frank Kozempel back in 1959. Frank noted how compact it was, with potentially great modeling opportunities. I was inspired and took the challenge.

Linden Street on Free-mo

Adding Linden Street to my existing HO railroad proved problematic. But at a New Jersey Division National Model Railroad Association (NMRA) meet, Mike MacNamara gave a clinic on Free-mo modular railroading. That was the beginning of the New Jersey Free-mo group. Soon after, I realized the Linden Street project was feasible after all.

This module system is called Free-mo because, other than a few basic rules and specifications to ensure connectivity between modules, builders

are free to design and build anything they like. That meant I could model Linden Street in modular form without compromises, yet still share it with others at train meets and conventions.

In 1959, Frank Kozempel visited the facility, took pictures, and recorded some basic measurements. He also drew a map of Linden Street showing track arrangements, buildings, and structure locations, as well as miscellaneous features. That drawing was the basis for my model of Linden Street in the Free-mo format.

The Linden Street property was about 150 feet wide by 870 feet from the front gate to the river bulkheads. In HO, that's close to 2 feet across by 10 feet long. The standard for a single track Free-mo module is 24" across and as long as you can safely carry and transport.

The only part that would connect to other Free-mo modules and therefore need standard endplates was on the section representing Delaware Avenue at right angles to the freight station tracks. The Linden Street section is considered "between the standard endplates" and could be built any way



2 The view from the Delaware River end of the car float slip and freight terminal shows a barge loaded with coal. There are coal-unloading trestles on both sides of the car float slip.

tracks alongside the freight house, each with a 10-car capacity, this large building needed to be run efficiently to avoid operations grinding to a halt. Photographs from early in the 20th century showed both tracks filled to capacity. The public delivery siding adjacent to these tracks was also maxed out. Overall, Linden Street had a total capacity of 75 cars.

Since I was taking the modules on the road and showing them publicly during the construction phase, I made cardboard mock-ups of the freight house and other structures to give the onlooker a better perspective of what the finished scene would look like.

I later scratchbuilt the freight house using styrene. The challenge was getting the dimensions and look of the building correct, as my research for details on all of the Linden Street structures came up almost a blank. Most of my modeling was done based on the photos in the *West Jersey Rails III* book and other internet sources.



3 Reading's tug *Ogontz* out of Philadelphia has delivered a car float filled with loads of both hard coal from northeast Pennsylvania and soft coal from central Appalachia. The model is a Frenchman River Model Works kit.

I built the north and south coal trestles from basswood to look like the ones in the book, but the photos didn't show enough of the structures for me to fabricate them exactly like the prototype. I made some assumptions

based on looking at many prototype coal trestles of similar design.

The float bridge and surrounding supporting structures were kitbashed. Since the float bridge, which always remained a Howe truss, was one of the



The Free-mo approach

Free-mo was developed with the idea that a set of standards focusing mainly on module endplates would enable faithful modeling of prototype track plans and operations in a modular environment. The length and track configuration of a Free-mo module or modules are up to the modeler.

Free-mo adherents try to build modules with track and scenery that reflect prototype practices as much as possible, thus achieving realistic scenes while creating an environment in which trains can be operated in a realistic fashion.

More information on Free-mo can be found online at www.njfreemo.org and www.free-mo.org. – *Mike Prokop*

4 In this view looking northwest of the Free-mo module, the freight station is on the right, the unloading crane is at center, and the float slip is at left. The house switching lead cuts across in front of the slip.

the mechanical and electrical standards to be compatible. After those requirements are met, however, individual creativity and innovation supports the notion that model railroading is truly an art form. This encompasses not only scenery but also everything from the subroadbed, framework, and overall construction of the module all the way to the floor.

I constructed my modules to fit in my Honda CRV. My goal was to make them as light as possible without sacrificing strength and stability. I built a $\frac{3}{4}$ " plywood frame held together with pocket screws and yellow glue, then added the end plates and intermediate stringers.

I attached $\frac{1}{4}$ " plywood to the sides (fascia) and used 1"-thick extruded-foam insulation board as the subroadbed. This airplane-like monocoque construction is strong and lightweight.

I wanted legs that were inboard and could be easily folded out or in for quick setup or breakdown. I made them from $\frac{3}{4}$ " plywood attached to the module frame with plywood blocks and carriage bolts to form hinges.

If you're considering the construction of some modules, I recommend seeing how others have constructed them. Also check the various Free-mo websites for construction methods and ideas. [See "The Free-mo approach" above. – *Ed.*]

signature structures, it was important to get it right. I was able to obtain laser-cut float bridge parts from Tim Warris, co-founder of FastTracks (www.handlaidtrack.com). He's modeling the Jersey Central's Bronx Terminal and sent me the basic parts he designed and cut on his equipment.

In northeast Philadelphia at the location of the Reading's old Port Richmond complex, the ruins of their quad set of float bridges still exist at the foot of Allegheny Avenue on the Delaware River. A couple of visits to a convenient public park on the adjacent pier produced lots of photos of the truss used there and at Linden Street.

I modeled the overhead hoist structure used to raise and lower the float bridge using the two steel (rather than the prototype's wood) vertical columns and concrete counterweights from a Walther's car float apron kit, which was based on a Reading design.

The tugboat *Ogontz* is a kit from Frenchman River Model Works painted and detailed to match prototype photos. The car float is the Walther's

kit, shortened by 10". I substituted code 83 nickel silver rail on the deck instead of the plastic rail supplied. It's electrically connected to the float bridge through rail joiners, although the switch engine isn't allowed on the car float.

The bulkheads, piers, and pilings are all scratchbuilt using basswood, balsa, and dowels painted with acrylics to resemble a beat-up and weathered wooden sea wall. The few other ancillary structures modeled are the overhead dual-capacity crane, an out-of-the-box Walther's model.

My version of cobblestone streets employed a stamping process using a flat latex mold pressed into ultra-light spackling material. Painted and weathered properly, this method gives a realistic result.

Module construction

When I first interacted with other Free-mo modelers at various shows, the differences in construction ideas and materials were eye-opening. As Free-mo modelers, we all need to meet

Learning points

- What proves problematic for a home layout may be practical in a modular setting.
- Free-mo offers considerable latitude to support prototypically accurate track arrangements.
- Rail-marine operations are always popular modeling themes.

Operations

Operating sessions vary widely depending on the setup and venue. Typically, some formal op sessions are scheduled along with plenty of free-running time. But for me, the most satisfaction comes from interacting with visitors. Since my module is based on a prototype railroad facility, it's rewarding to educate and explain not only the construction of the modules but also the history and operation of Reading's Linden Street Freight House facility on the Camden waterfront.

Demonstrating how the facility actually functioned attracts a crowd. Explaining why certain engine and freight car moves are being made reveals some of the complex actions the full-size railroads actually had to do to safely and efficiently move freight. One of the most frequent comments is about the trains moving slowly. With people used to seeing trains speeding around on other modular layouts, I can understand their surprise.

When a large group of us get together, we often use various waybill and switch-list systems. At National Model Railroad Association conventions, we offer scheduled operating sessions that attendees can sign up for. Operations at Linden Street center around moving loaded and empty cars on and off the car float. If done prototypically following railroad safety rules, spotting loaded hoppers on the trestles and the empties back on the car float can take 30 to 45 minutes or more. Add in freight cars coming through the front gate as interchange, car movements in and out of the freight station platform tracks, and activity on the public delivery track, and you quickly see operations at this little freight yard can be quite complex.

On the road

Modular layout builders are probably going to interact with other module builders. Using modules in your home layout makes them easy to move if relocation beckons, but the camaraderie inherent in modular railroading



5 The truck side of the covered Linden Street freight station platform was crammed in between the platform and the lead to the track that ran in the center of Delaware Avenue.



6 The lead to the freight house curves off to the left from the through track on Delaware Avenue. The siding at right serves the RCA Victor factory, where radios and televisions were made.

is in itself fulfilling. The national Free-mo website (www.free-mo.org) lists more than 150 established groups worldwide, or you can organize and start up your own group, as we did here in New Jersey.

We set up at NMRA meets and conventions as well as other train shows and displays. For the past five years, two of us have displayed our modules at the Bordentown, N.J., Old City Hall holiday train display from Thanksgiving through New Year's. We've exposed scale model railroading to thousands of kids and adults. During the massive Free-mo setup at the Amherst Railway Society Railroad Hobby Show in West Springfield, Mass., each January, we've participated with many other Free-mo groups to form a layout that occupies an area 250 feet long and 30 feet wide.

Involvement in Free-mo has added a different dimension to my model railroading world. Most satisfying has been the enjoyment experienced from

interacting with the public and making new friends. Modeling a specific prototype location as a Layout Design Element (a visually and operationally recognizable scene based on a prototype location) has given me great satisfaction as I investigated the Reading around Camden, N.J. I've also learned much more about all railroad operations and industrial activities throughout Camden, Philadelphia, and southern New Jersey.

To be sure, being out on the road with the Free-mo modules can be challenging. Transportation and setup/breakdown are my least favorite things. But interacting with fellow modelers and the public is extremely rewarding. Next time you see a Free-mo group in action, please say hello. **MRP**

Mike Prokop is a retired manager from the office equipment industry. He and his wife, Margery, live in Hamilton Square, N.J. Mike is the treasurer for the NMRA's New Jersey Division.



Brian Pate's HOn3 Klondike Mines Ry. faithfully depicted the area southeast of Dawson City to Sulphur Springs in Canada's Yukon Territory, including the towering wood trestle at Homestake Gulch. Brian Pate with Carl Sparks photo

Moving a masterwork

Saving Brian Pate's HOn3 Klondike Mines Ry.

By Mark Dance

With apologies to Margaret Mead: Never doubt what a small group of thoughtful, committed model railroaders can accomplish.

Brian Pate is an interesting man. A nuclear scientist with many professional achievements to his name, he is

also an accomplished modeler whose models have won the National Model Railroad Association National Convention's Best of Show Gold Award – twice! Brian's passion is researching and reproducing in miniature the machines and environment of Canada's far north,

specifically the railways, sternwheelers, dredges, and structures used by the miners of the Klondike gold rush.

For more than 30 years, Brian stoked this passion through research, design, and construction of his HOn3 Klondike Mines Ry.: a slight retelling of

a prototype that existed to serve the gold dredging operations around Dawson City circa 1910 by imagining it continued to exist up until 1945. [See *Model Railroad Planning 2007*, MRP 2017, and www3.telus.net/kmr. – Ed.]

My first visit to Brian's KMR occurred in 2008. It was an impressive experience. Operating on the KMR was like operating a museum-quality display on industrial archaeology. The KMR, together with Brian's HO standard gauge Canadian Pacific Ry. (CPR) layout beneath it, was beautiful to look at, educational and inspirational to study, and the anchor of Brian and his wife, Margaret's, many social bonds within the hobby.

I operated infrequently on the Klondike Mines Ry. after that, but as my interest in operations grew, I ran into Brian more often. In the spring of 2015 at an operating session on fellow Canadian Pacific modeler Scott Calvert's layout, we began discussing the plans for the upcoming VanRail operations meet, which Scott and Brian had founded and run more or less biannually since 2002.

Preserving a tribute to the past

At that session, Brian informed us that he and Margaret had made the difficult decision to downsize and sell their home of 50 years following the VanRail meet in September. While those present began grieving the upcoming loss of the KMR, in an offhand remark, Brian noted that the Dawson City Museum and the Klondike Visitor's Association (the KVA) had expressed an interest in putting the KMR on permanent display if the logistical challenges of preserving, shipping, and installing it in Dawson could be overcome.

Parks Canada and the Visitor's Association and museum were familiar with Brian and his KMR owing to Brian's frequent research trips to the area and the donation of his model of Yukon Consolidated Gold's Dredge No. 4, which they displayed in the Visitor's Centre in downtown Dawson City. As well, many of the prototype Klondike Mines locomotives and even structures that Brian had faithfully reproduced on his layout were preserved in Dawson City, so it would be a natural home for the KMR.

Added to this, the tiny population of Dawson City swells during the tourist season. The Visitor's Association building where the KMR would be displayed annually hosts over 30,000 visitors! This seemed like too great an opportunity to pass up.



Brian Pate (left) and David Doiron enjoy the KMR's last operating session before key portions went 2,000 miles north for display in Dawson City.

Challenges

The thought of the KMR being relegated to the scrap heap when a museum had offered to perpetually display it was heartbreaking. But Brian's offhand treatment of the offer was also understandable, as he was occupied with the logistics of their downsizing and would be too busy to help with the effort.

Moreover, the KMR wasn't built to be removed, let alone relocated, as it had been framed into the walls of their home. Nor had Brian made notes or taken photographs of its framing and construction.

The basement 2 x 4 stud walls provided substantively all of the layout's stiffness and strength, leaving the model railroad really just a ribbon of roadbed flanked by thin plaster scenery, a hardboard fascia, and delicate scratchbuilt renditions of dozens and dozens of prototype structures. The fear was that removing the layout from its home would simply result in a mass of twisted rail and loose wires lying amid hundreds of pounds of cracked plaster on the basement floor.

Then there was the small issue of transporting the KMR from Vancouver's temperate climate thousands of miles north to the frigid Klondike, where it would have to be reassembled in a manner suitable for public display. Finally, Brian and Margaret wished to sell their house immediately after VanRail, which likely meant only four or five weeks to complete the extraction of the KMR sections that could be saved, not to mention the demolition and removal of the standard gauge CPR layout that existed below the KMR.

Organizational planning

The task of moving key segments of the railroad was split into many overlapping elements. The largest two were the extraction of the HO_{n3} Klondike Mines Ry. and its installation in the Klondike Visitor's Association building. A call for volunteers went out to the local model railroading community, and I was overwhelmed with offers to help.

Proper selection of people is absolutely critical in projects like this for efficiency, teamwork, and morale. We would need a small core group with sufficient and complementary skills, attitudes, and availability. We could augment this core with additional volunteers on less critical activities that would come up through the job.

At the Vancouver end of the project Brian Dobbin – a KMR regular – would oversee the Lenz DCC and low-voltage power systems. Master carpenter Anthony Craig would oversee carpentry and fabrication. I'd handle scenery, backdrops, and the coordination – as the saying goes, "Those who can't do, manage!" Doodle online scheduling was used to establish work-party days and assignments during that critical five-week window.

On the Dawson City end, Parks Canada assigned experienced project manager Anna Claxton. It can't be overemphasized that there must be stable and enthusiastic involvement and ownership from the "civilian" organizations in a project such as this. It's the non-model-railroaders who will provide the space, labor, and budget to keep the display open and working for the public long after the model railroaders have left town.



The second smallest section, Bear Creek, was over 200 pounds once crated. Here it sits secured to the crate base. The foam insulation was added at the request of the museum to help avoid thermal shock. Mark Dance photo

René's hours of packing were successful, and the structures suffered almost no damage.

Doug Hicks and I did our best to add protection around the delicate elements of the layout that couldn't be removed, such as small Dredge No. 5, trestles, bridges, and switch stands. We then draped the KMR to protect it from the dust of the standard gauge layout's deconstruction.

Over the initial sessions Brian Dobbin labeled, documented, removed, and packed the DCC and low-voltage circuitry while Anthony Craig, Scott Calvert, and Al Lill took reciprocating saws and crowbars to the lower deck and its beautiful trackwork. Watching Sawzalls cutting through the handlaid dual-gauge turnouts in Sicamous yard was especially trying.

Safety concerns

At this point it's worth noting the need for a safety mindset in this type of project. As *de facto* project manager, I was continually aware, and honestly fearful, of the environment within which the volunteers were working. Deconstruction of any nature happens more quickly and chaotically than construction, and there's a tendency to rush. With power tools, 120VAC wiring, broken lumber, flying sawdust, sharp track, loose wires, debris-covered floors, and heavy layout sections, deconstruction creates a risky environment and nothing was worth an injury to someone.

Three suggestions: Ideally, some members of your team should have experience in the construction industry, as they inherently understand the hazards and take appropriate precautions. Second, to the extent that you're dealing with 120VAC wiring, have qualified electrical support deal with it or at least neutralize the risk. Finally, designate someone to be a safety monitor, tasked with tidying up, removing hazards as they appear, assuring goggles, gloves, and other safety gear are used, overseeing any heavy lifts, and generally watching for unsafe practices.

Planning where to cut

Within the first week, we had to decide which portions of the KMR would be saved and how it would be divided into manageable sections. These were critical and irreversible decisions with large implications:

- What parts of the scenicked KMR made sense to save in the context of the museum's objectives for the display and the space available?

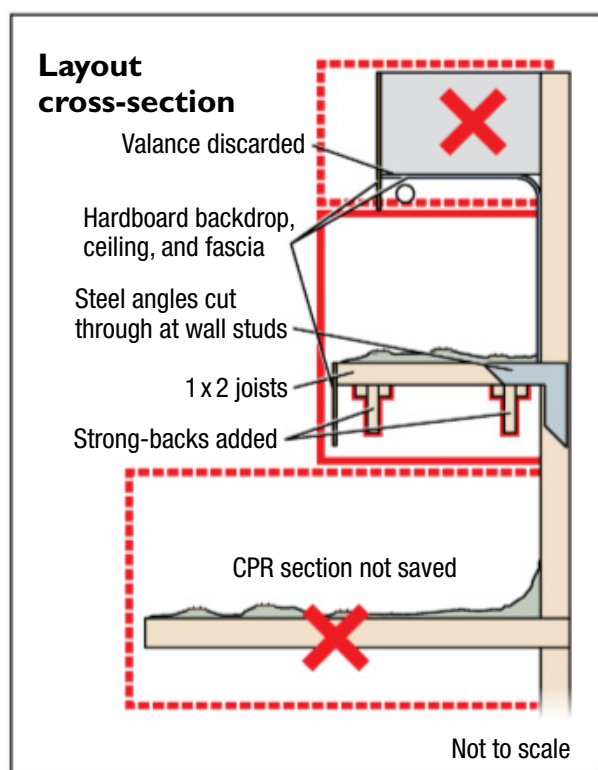


Fig. 1 Disassembly. This cross-section of the original layout shows how it was braced and disassembled for transport to Dawson City.

The project had to fit solidly within the mandates for these organizations. In a small tourist town like Dawson that's heavily supported by governmental and service groups, delicately negotiating responsibilities and mandates and assuring everyone remains onboard was especially critical. For this, the project was and remains heavily reliant on the participation of Alex Sommerville of the Dawson City Museum.

Disassembly

The first step was to pull everyone together physically at Brian's home at the earliest possible time following VanRail. Brian had removed and packed all the rolling stock in large storage tubs and had separated out any equipment and structures promised to others. He answered some brief questions on the layout construction to the best of his recollection, reiterated that there were no drawings and few construction photographs, pointed out the breaker boxes for the 120VAC lighting circuit that ran through the benchwork and valances, and then, with apologies, made his departure to oversee their move.

The group came up with a rough plan to first remove the lower standard gauge deck. We could thus gain working access under the KMR to figure out how to remove it. With access from below, additional framing ("strong-backs") could be added below the KMR before it was cut free from the walls (see **fig. 1** at left).

The sternwheeler *Keno* and all those beautiful structures needed protecting. René Gourley unplugged the ones that could be removed from the layout, marked their location for reinstallation, and carefully packed each structure and detail in bubble wrap, often adding backing boards to protect the most delicate ones, and then placed them into more storage tubs.

Learning points

- Motivation and volunteerism can overcome myriad obstacles.
- Professional skills and tools will be needed.
- Model railroads that accurately depict actual locations may have historical value.
- The height of the layout may need to be adjusted to accommodate public viewing.
- Observing safety concerns such as lifting heavy objects requires careful planning.

• What were the exact dimensions of the Klondike Visitor's Association space that the layout would occupy, and how would the layout sections be arranged in that space?

• What would be the resulting sizes of the crated sections? How would they be handled, loaded and unloaded?

• Would crated and uncrated sections fit through the exits and entrances of both the Pates' home and the basement of Gordie Mitchell's Vancouver area home, where they would be stored and staged before transport to Dawson City?

• How would the sections be shipped to the Yukon, what would it cost, and what are the maximum sizes/weights that could be accommodated? How would we protect against damage in shipping?

• How could we minimize repairs to the track, backdrop, and scenery that would be necessary to rejoin the cut-apart sections?

• And one implication critical to long-term success: How could we involve the Dawson City stakeholders in these decisions to ensure they "owned" the final display?

After careful measurements and discussion, we decided to save the KMR from Dawson City through the yard at Klondike City, and then up Bear and Bonanza creeks (see the track plan at right). This would preserve the historically accurate Dawson City waterfront with its reaction ferry, the docked sternwheeler *Keno*, and many identifiable buildings. It would also save the main yard, so that the KMR equipment could be displayed, and both the dredge construction and Dredge No. 5 operations scenes, which had been accurately modeled from period photographs.

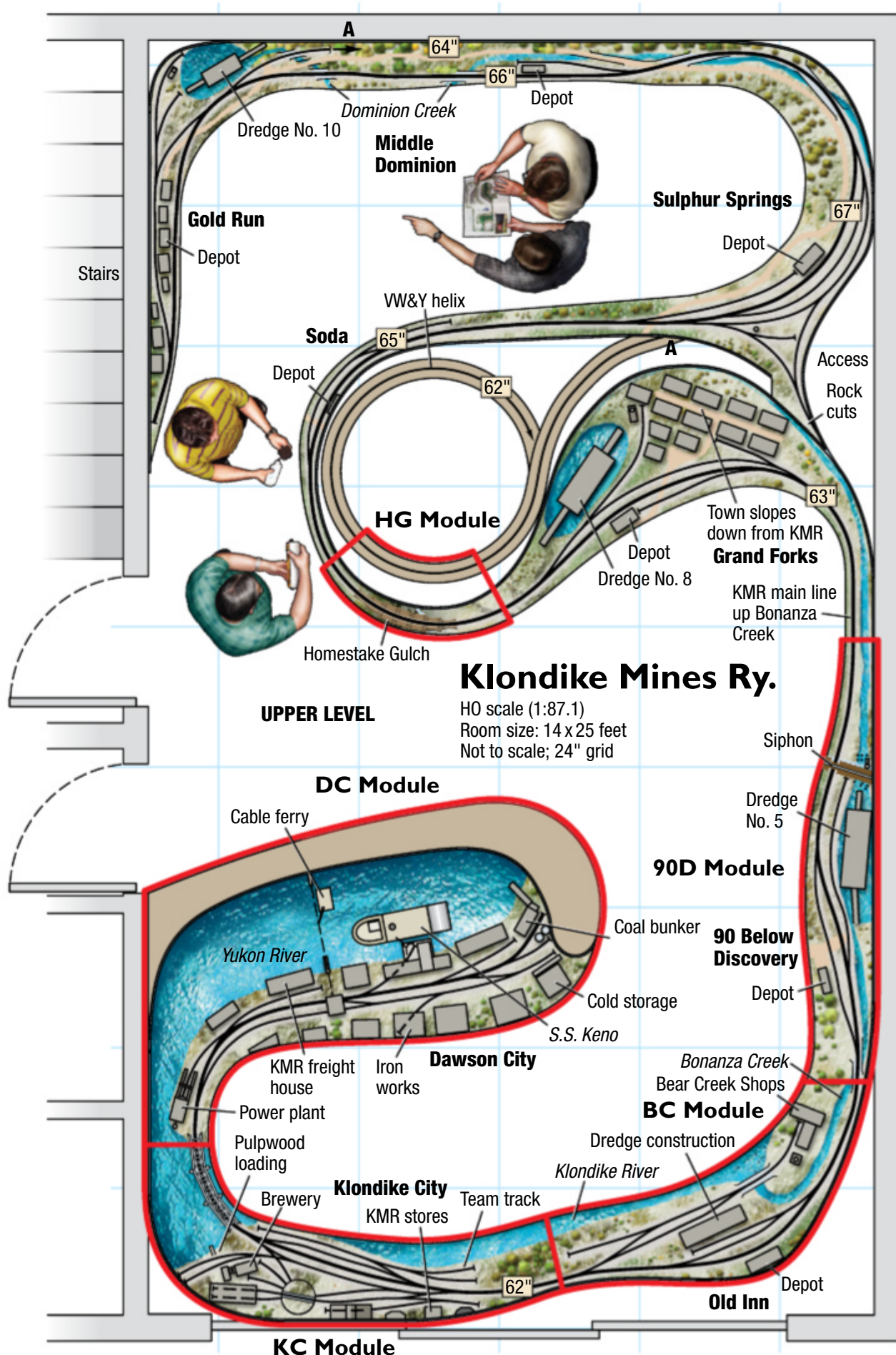
The display would comprise four contiguous sections, the longest 10 feet in length, and would terminate beneath

Comments from the builder

For over two decades, the Klondike Mines Ry. became much more than an interesting prototype and a satisfying modeling project for me. It was also a social focus, where friends came to our house in North Vancouver. Each month, an operating group gathered, first downstairs on the KMR, and then upstairs for Margaret's snacks.

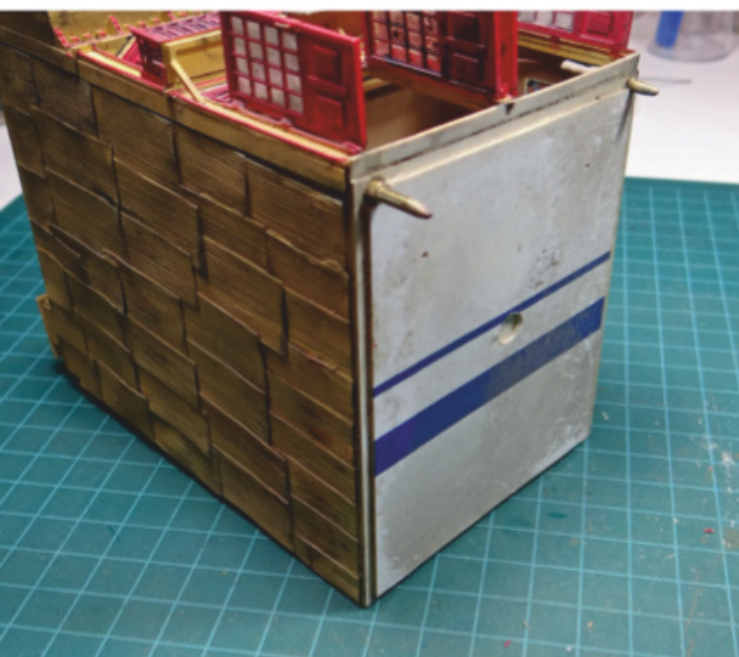
Friends came from across Canada and the United States, and also from overseas. The KMR hosted the biannual VanRail meets and Operations SIG special sessions, among others. But then advancing age and declining health caught up with us, and the time came to downsize.

I've seldom faced tougher decisions, but thanks to our friends, much of the KMR was saved for others to enjoy. This helped to soothe the pain, and we are most grateful to those who made it happen. – *Brian Pate*





Watch your backs! Without use of a forklift, the team resorted to manual labor. Doing final crating inside the van reduced the weight for each lift. At the freight shipper's depot, a forklift could be used to lift the sections from the van. The crated Dawson City section weighed nearly 500 pounds. John Green photo



Brian developed a novel way to plug structures into the layout using tapered brass rods on the bottom of the buildings that mated into brass tubing glued into the layout, and were wired to the low-voltage DC lighting circuit. René Gourley photo

a spindly water flume trestle. With luck, we could automate a train to run from the end of track beneath the water flume to the station at Bear Creek. This offered a run of about 14 feet each way that passed the dredge operation and through a wooden truss bridge but beneficially traversing only three turnouts.

In addition to these sections, the KMR's signature scene at Homestake Gulch trestle would be saved as a

freestanding roll-around display as a partner to Brian's Dredge No. 4 model in the KVA entrance area. Equipping the Homestake display with a rechargeable 10-volt battery would allow a lit and chuffing sound-equipped passenger train to be positioned on the trestle, re-creating another famous period photo of the real KMR.

Once these decisions were behind us, disassembly and removal of the KMR proceeded. After much volunteer effort – not without its drama, including the accidental destruction and then careful rebuilding of the delicate Klondike River pin-connected truss bridge – the layout's extraction occurred on time and without injury to the crew. On a sunny Sunday in October 2015, more volunteers were called in and the sections were moved via a 12-foot rental van to Gordie's basement for staging and crating at a more leisurely pace.

Crating design and shipping

While budget and organizational details were finalized on the Dawson City end, Anthony Craig, Brian Dobbin, and I prepared the sections for shipment. Brian added electrical bulkheads to each section's ends, tested the simplified DCC set up we planned to use mainly for locomotive sound, and rerouted wires. A Train Shuttle from Tam Valley Depot was acquired to add train automation.

Visiting the KMR

Dawson City, Yukon Territory, is a fascinating place to visit. It's a six-hour drive north of Whitehorse, the northern terminus of the White Pass & Yukon's rail/motor coach excursion from Skagway. Holland America also has cruises that offer trips into Dawson City by way of the scenic "Top of the World" Highway.

Dawson City is full of Yukon history and beauty, including the sternwheeler *Keno*, Diamondtooth Gertie's Saloon, abandoned dredges, and the Dawson City Museum's Locomotive Shelter, which houses four of the five surviving KMR steam engines.

Brian's HOn3 Klondike Mines Ry. and his spectacular model of Consolidated Gold's Dredge No. 4 are now resident in the Klondike Visitor's Association Centre located at 1102 Front St. in Dawson City, Yukon Territory, Canada. The Centre is open every day from May 1 through September 30 from 8 a.m. to 8 p.m.

– Mark Dance

Anthony and I focused on some minor repair and the necessary crates.

We compiled lists of the supplies and tools we would need to bring with us, the larger power tools we would need to borrow from Parks Canada, and a day-by-day schedule of our planned installation activities to prove to ourselves it might all be possible.

The museum and KVA wanted to minimize the risk of thermal shock to the sections, especially during a transload at Whitehorse. To this end, a freight-haul service with air ride and insulated trailers was chosen, and the museum requested that we add insulation to the crates. A simple standard design for the five crates was developed, and we had a lumberyard cut all the pieces to size on their industrial table saw and deliver them to Gordie's, where his garage was turned into a crate factory.

On shipping day, we rented a larger van and enlisted yet more volunteers to finish crating and loading the sections. Given the weight of the larger crates, some of the final crating had to be done in the van with the layout sections and crate walls lifted in manually, the crates sealed and labeled, and shock detectors added.

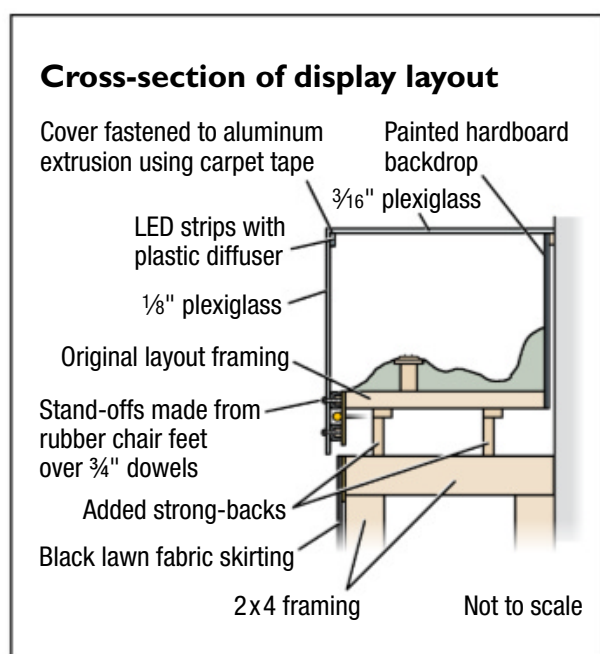


Fig. 2 Display. A cross-section of the KMR display shows the support framing, enclosure, and lighting.

The crates were then driven to the freight depot for unloading by skilled forklift operators. Several trips to the depot were necessary, but the next day the KMR was on its way north. Three days later, the crated layout with structures and rolling stock sat 2,000 miles away in the KVA building, acclimatizing to its new environment.

Installation and finishing

Installation of the KMR occurred in two trips in April and June 2015. During the first trip, Anthony Craig, Brian Dobbin, and I installed the sections. During the longer second trip, Anthony and I “finished” the KMR display by lighting and enclosing it. Things of note in the installation:

The layout sections were mounted, strong-backs and all, on top of a sturdy 2 x 4 frame constructed in advance of our arrival by Parks Canada personnel. We leveled the sections with shims and reconnected the tracks. We dropped the layout height from 64" to 44" to facilitate public viewing. With the drop in height and the location of the layout in the middle of the KVA display area, many new viewing angles were created. Brian’s beautiful model of the sternwheeler *Keno*, previously largely hidden on the Dawson City waterfront, could be viewed from all sides.

The backside of the central Dawson City peninsula, which is the first thing the public sees when encountering the KMR display, was finished with thin mahogany so it could be used to attractively display photos and information panels on the prototype.

One big decision was whether to use plexiglass (acrylic) or Lexan (polycarbonate) for the enclosure. Testing and research led us to choose plexiglass over the Lexan. While



These three photos show the Klondike Mines Ry. installed in the Visitor’s Centre with (top) the dredge at 90 Below Discovery, (middle) Klondike City yard, and (bottom) Dawson City on the left with Bear Creek at right. Note the gray stand-in structures in Dawson City. Chris Healey photos

plexiglass is more brittle and challenging to work with, Lexan does scratch more easily and may turn yellow with age. Neither product was available at stores in Dawson City, so many 4 x 8 sheets of plexiglass in a variety of thicknesses were freighted to the Yukon along with more sheets of thin mahogany plywood to make cutting patterns for the plexiglass.

The enclosure was made with plexiglass front panels that undulate to follow the layout fascia and plexiglass tops with front edges cut to follow the curving front panels. Several top panels were hinged to allow access to the moving train, while the balance were secured to the top edge of the front panels with double-sided tape to help keep curious fingers out.



The scratchbuilt Dredge No. 5 churns up the water in search of gold as a passenger local chugs by. The iconic scene was one of those saved by the team and moved to the Dawson City Museum. Brian Pate photo

Light-emitting diode light strips sit in the upper front corner of the enclosure (**fig. 2** on the previous page).

We chose to leave in place all the hardware on the front fascia – things like turnout pull knobs – to decrease our work. Pairs of standoffs were made to hold the plexiglass front panels clear of this hardware, yet allow the plexiglass to curve with the fascia. The standoffs were made from rubber chair leg tips fitted over $\frac{3}{4}$ "-diameter hardwood dowels that provided the necessary rigidity and pliability to pull the plexiglass up tight to the fascia while reducing crack-inducing stress.

Working with the plexiglass was definitely challenging. Mahogany patterns were first made for any curving panel and used as router guides to cut the plexiglass. All edges were then scraped by hand to smooth them. The protective coating was left on the plexiglass to reduce scratching, and drill bits especially ground for use on plexiglass were employed to reduce the incidence of cracking. Nevertheless, many pieces had to be made and remade two or more times. We were fortunate that the weather

was excellent in May so we could do the work outside, including using compressed air to blow off the plastic chips, as cutting and routing plexiglass generates a lot of mess. Another helpful hint: Antistatic spray for plastic is a lifesaver!

We lit the layout with 12-volt, 4-watt/foot, cool-white LED tapes. The LED strips were laid within aluminum extrusions curved to follow the undulations of the front plexiglass sheets. With the LED strips inside, the extrusions were closed with snap-in plastic diffusers, which greatly reduce the light intensity of the LEDs and also the railhead reflection problems that often accompany LED strip lighting.

Although Brian Pate had built many of the key structures in Dawson City, about 50 percent remained to be constructed. To sit in for the unfinished buildings, Colin Dover and Anthony Craig made stand-in models from solid wood blocks and painted them a neutral gray. They gave the display a finished look.

A skirt of black garden fabric was added below the display to hide the support framing. Pleats were added as

the skirt was stapled to the framing to improve its appearance.

On our last day in Dawson City, we held a maintenance-and-training session for the KVA staff members who are now in charge of explaining the KMR display to the public.

The project concludes

This was an immensely challenging but satisfying project. We hope our experiences will provide inspiration and guidance to others who one day may be contemplating saving other historically significant model railroads.

I'm not sure how many of the team of volunteers would have signed up if we knew what would eventually be involved. But I remain impressed by the energy, creativity, craftsmanship, and perseverance everyone displayed throughout this nine-month project.

As a result of their untiring efforts, about 30,000 people per year can enjoy Brian Pate's beautiful Klondike Mines Railway. **MRP**

Mark Dance, who models the Canadian Pacific in N scale, is a regular contributor to MRP.

Enough switching for two layouts

Southern Pacific's Clackamas, Ore., industrial area in HO and N

By Byron Henderson



Southern Pacific GP9 no. 3588 switches the mill at the end of the Lakeview branch in Lakeview, Ore. “Bloody-nose” paint schemes were on the wish list of one of Byron Henderson’s clients. G.J. Bolinsky photo, collection of Keith Ardinger

My client had a simple wish list for his HO track plan: Southern Pacific in the mid-1990s (just before the Union Pacific took over); a straightforward switching layout built on prefab benchwork sections; and stock or modestly kitbashed structure kits. Add a fascinating prototype: an industrial switching area in Clackamas, Ore.

Some quick references to historical topographic maps and Google Earth

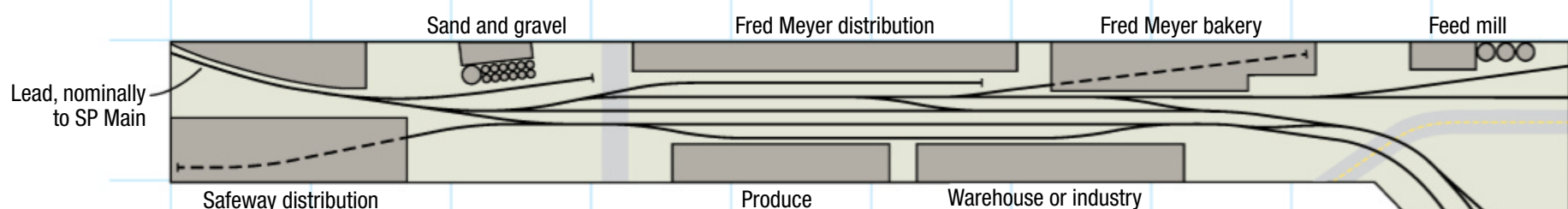
revealed that this area would be an embarrassment of riches to model. Within a roughly one-and-a-half by half-mile area was a great variety of industries, many still receiving rail service today.

A giant distribution center and bakery for the Fred Meyer superstore chain dominates the north side of the compact three-track yard, which is the central element of this area. Competitor Safeway is nearby, along with a

variety of other warehouses and industries. Three that also appeared on a 1994-era aerial photo (via Google Earth) caught my eye for their potential variety in rolling stock: a sand and gravel dealer, a feed mill, and Wymore Transfer that handles a wide variety of commodities. See the map on page 65.

Let's see what fits

Three commercial benchwork sections for an L-shape were on hand



Clackamas Industrial Area

N scale (1:160)

Layout size: 4'x10' x 1'-0"

Scale of plan: $\frac{5}{8}$ " = 1'-0", 12" grid

Illustration by Roen Kelly

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

The N track plan at a glance

Name: Clackamas Industrial Area

Scale: N (1:160)

Size: 4'-0" x 10'-0" x 1'-0" wide

Prototype: Southern Pacific

Locale: Clackamas, Ore.

Era: late 1990s

Style: shelf

Mainline run: not applicable

Minimum radius: 13½"

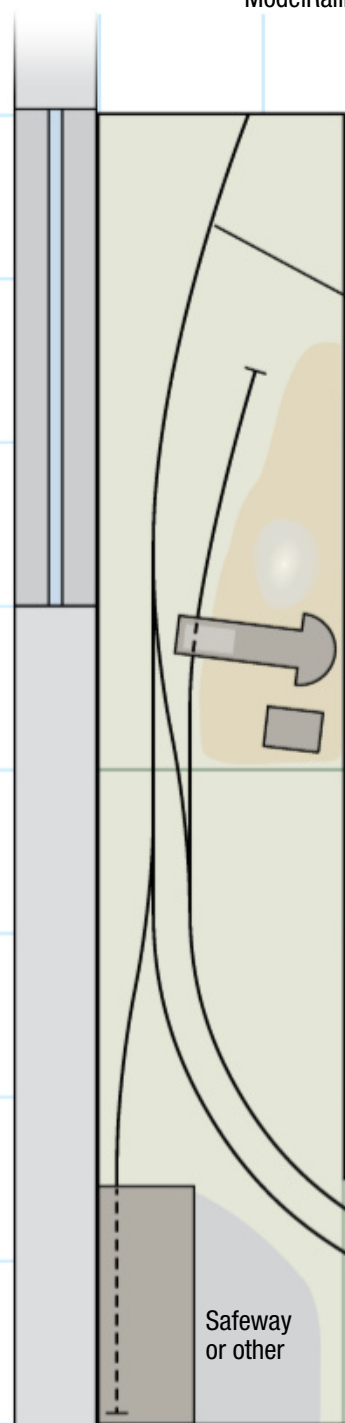
Minimum turnout: no. 5

Maximum grade: none

Train length: 6'-6"

Warehouse or industry

Off-spot and lead Wymore Transfer



Clackamas Industrial Area

HO scale (1:87.1)

Layout size: 8' x 10' x 1'-6"

Scale of plan: $\frac{5}{8}$ " = 1'-0", 12" grid

Illustration by Roen Kelly

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

The HO track plan at a glance

Name: Clackamas Industrial Area

Scale: HO (1:87.1)

Size: 8'-0" x 10'-0" x 1'-6" wide

Prototype: Southern Pacific

Locale: Clackamas, Ore.

Era: mid 1990s

Style: shelf

Mainline run: not applicable

Minimum radius: 22"

Minimum turnout: no. 6

Maximum grade: none

Train length: 7'-6"

Fred Meyer distribution

Fred Meyer bakery

Safeway or other

Off-spot and lead

Feed mill

Wymore Transfer

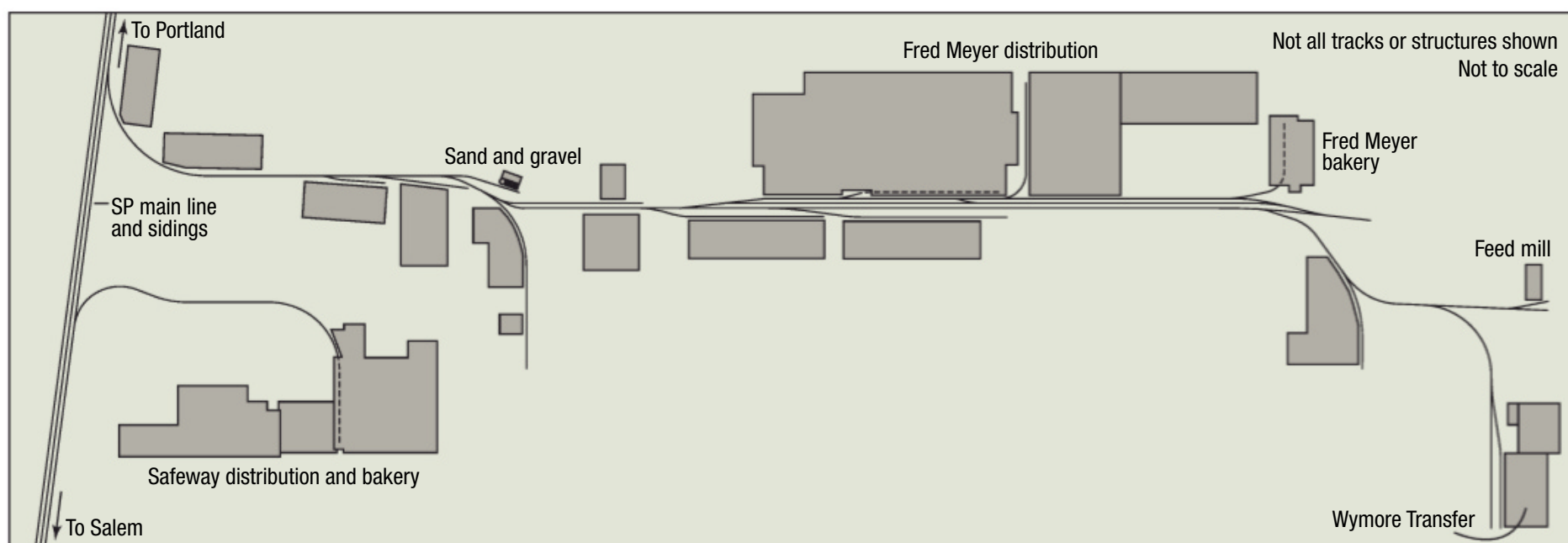
or on order, so I began there. In the mid-1990s, this area was still fairly open, so he wanted some of that feel – as opposed to cramming every square inch of benchwork with structures. It soon became clear that the L-shaped 4 x 10 x 1½-foot-wide shelf was going to be a challenging fit. Fortunately, one additional 4-foot-long section would just fit between the existing sections and the swing of the door, so I happily consumed that available space.

With the layout footprint in place, I started in on the design. My first couple of tries missed the mark. The plans were too dense and would require too much scratchbuilding or heavy kitbashing to customize structures to fit the space. But that approach didn't fit in with the time the client had for modeling. So the client asked if we could make another attempt and try for "interesting but less intensive."

Curved to be longer

The resulting HO plan is quite simplified from the prototype, but it better matched his idea of scope for the space. A central runaround curves around the L to allow more length. It's connected to a longer lead at one end (imagined to be our link to the Southern Pacific main line) and a short lead and off-spot track at the other.

The prototype is designed so all the industrial spurs are in the same



This rough spotting map of the Clackamas, Ore., industrial area was made following a 1994 aerial photo retrieved via Google Earth's historical imagery.

direction, which is certainly efficient. But for operating interest in the model (and a better fit), I oriented the sand-and-gravel industry spur the opposite way.

For operations, I imagine that the train would begin with engines at the end near the feed mill, as if it just arrived from the main line. For more operating potential, one could begin with unblocked cars – that is, not in industry order. This would add to the crew's challenge in organizing their work. (In real life, this local job was probably pre-blocked in a nearby yard.) The end of the session would come when all cars had been delivered or picked up and the engine placed on the other end, as if ready to run back out to the SP main.

The client was happy with this simple and open approach and has already started to build his HO layout. So I thought that my "time in Clackamas" was complete.

And then ...

A few weeks later, I was talking with another prospective client about his N scale layout interests. He was looking for a place to operate a "rainbow" of SP power that would have been seen just after the Union Pacific/SP merger in 1996. Classic "bloody nose," speed lettered, "Kodachrome," and even some UP power might be operated. He had available a 1 x 10-foot shelf for a switching-style layout and was hoping for a prototype basis for the track plan.

I mentioned the earlier HO Clackamas plan as an example of the kind of area we might research – and he quickly decided that we should look no further; Clackamas it was! And so it was back to work, but this time in N scale.

Not a great first act

Even though significantly more prototype elements fit in this relatively larger footprint, the first results were not very appealing to the client. He pointed out, correctly, that confining the layout to the narrow shelf caused it to look a bit generic and not reflective of the real area. And he offered an alternative: If he promised to build a new deck for his spouse, he might be able to liberate another few feet of shelf along the wall.

Well, I hope she gets her deck, because I moved quickly to expand the layout another 3 feet around the corner. In this new space, I was able to represent the curve of the prototype toward Wymore Transfer more effectively and spread things out to give more of the open feeling that was true of the area in the mid-1990s.

Now the industries could expand to give a more realistic appearance. I was also able to capture the interesting structures whose walls are cut off or curved to fit around adjacent tracks. The client encouraged me to add more industries and longer tracks, but I cautioned that the layout was becoming slightly out of balance: There were many more industry spots than would be possible to serve based on the typical train length. But he noted that most industries wouldn't be switched at every session, so we carried on.

As before, I took some liberties with the prototype, moving Safeway's separate spur to an opposite-pointing spur off the central mini-yard and double-ending a single siding to a couple of industries. But we were still able to keep a somewhat open feeling, including a couple of streets that could add to the operating interest. The

Learning points

- Modern references like historical imagery on Google Earth and historical topographic maps help with understanding the feeling of a locale in years past.
- Along with space and financial resources, time available for modeling should inform the track planning approach.
- Even a relatively compact prototype area is much larger than our typical modeling space, so thoughtful compromises are required.
- A linear shelf is space-efficient but may squeeze the uniqueness out of some prototypes; even a bit of space around a corner may help.

wider street at the right of the plan appears to be much busier in real life, so crews might be required to minimize the amount of time they block it – an added challenge to their switching moves.

The same, but different

It was fascinating to design two layouts based on the same prototype and general era, but with different spaces and modeling approaches. It was a great reminder of the creativity employed in matching the layout design to the builder's interests, constraints, and opportunities. **MRP**

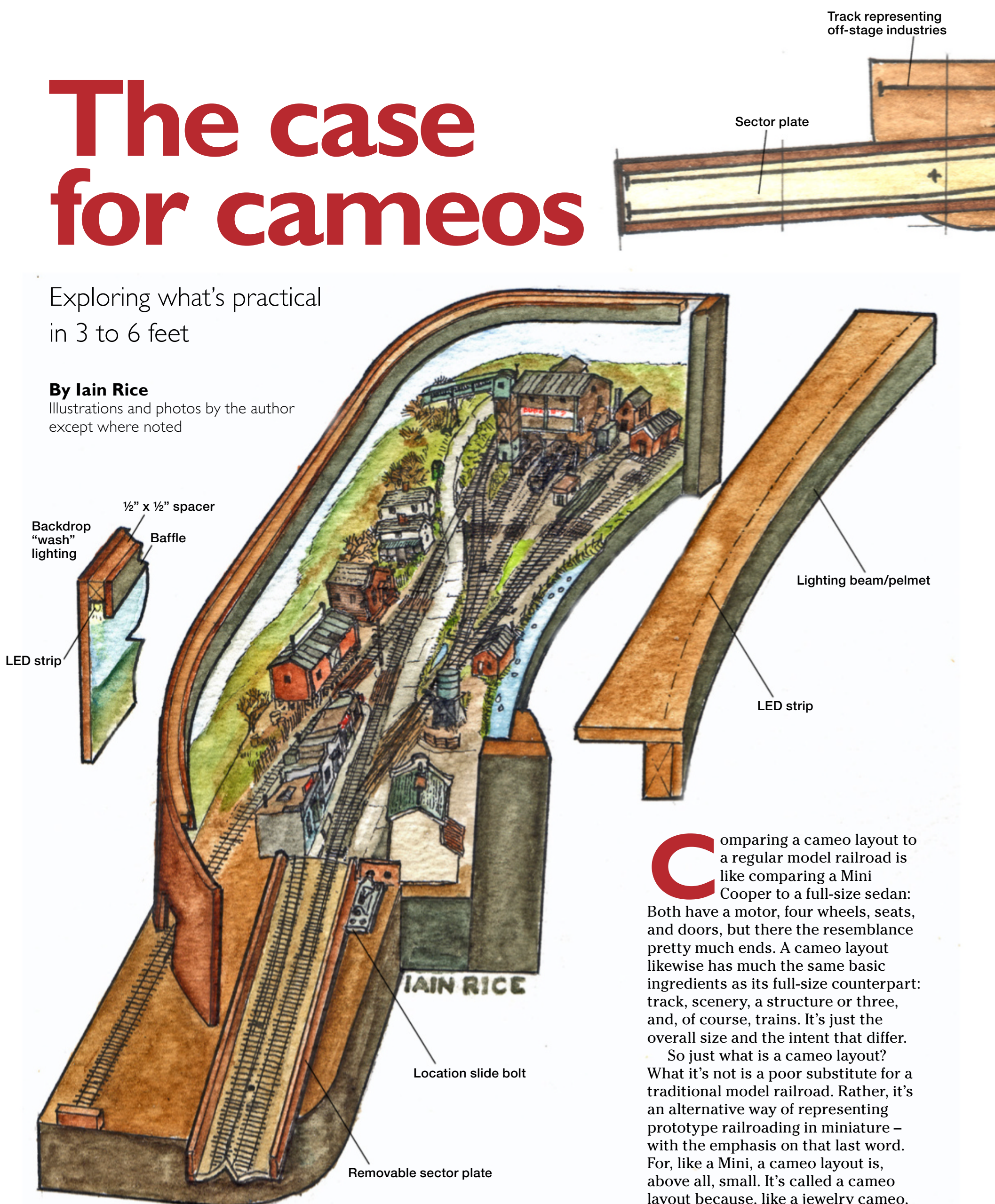
Byron Henderson is a custom model railroad designer (www.layoutvision.com) from San Jose, Calif. He is also editor of the Layout Design SIG's (www.ldsig.org) Layout Design Journal and a regular contributor to MRP.

The case for cameos

Exploring what's practical
in 3 to 6 feet

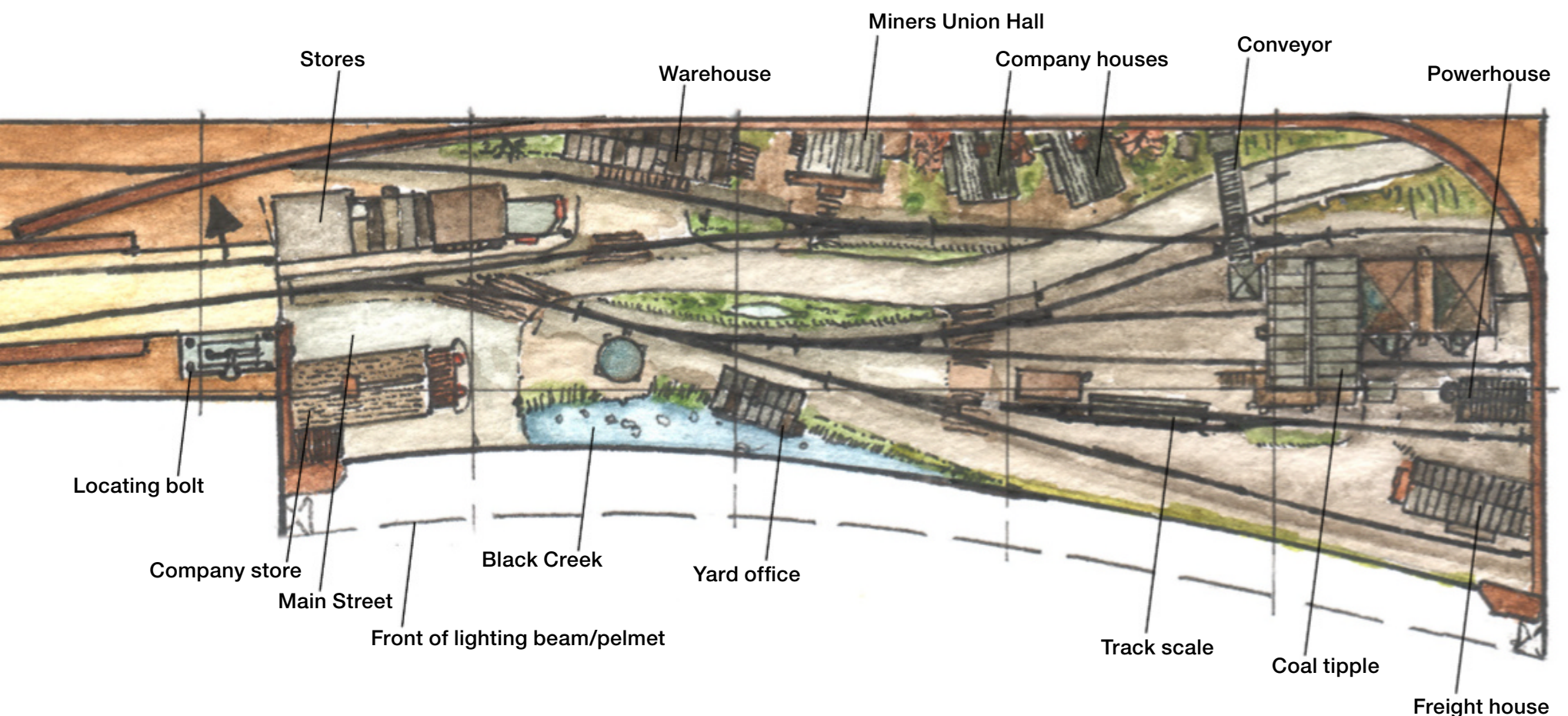
By Iain Rice

Illustrations and photos by the author
except where noted



Comparing a cameo layout to a regular model railroad is like comparing a Mini Cooper to a full-size sedan: Both have a motor, four wheels, seats, and doors, but there the resemblance pretty much ends. A cameo layout likewise has much the same basic ingredients as its full-size counterpart: track, scenery, a structure or three, and, of course, trains. It's just the overall size and the intent that differ.

So just what is a cameo layout? What it's not is a poor substitute for a traditional model railroad. Rather, it's an alternative way of representing prototype railroading in miniature – with the emphasis on that last word. For, like a Mini, a cameo layout is, above all, small. It's called a cameo layout because, like a jewelry cameo, it's small and aesthetically pleasing.



Iain's perspective sketch and track plan for the "Buda" (W.Va.) cameo illustrate the key principles: compact size, self-contained scene, seamless backdrop, limited viewing angles, light-emitting diode lighting, and an offstage removable sector plate. Unlike many exhibition layouts, cameos are operated from the front.

But what does this mean in practical terms? Well, in the context of a recent competition to build small model railroads hosted by Raillex – one of the premier model railroad shows in the United Kingdom – I was faced with creating a brief set of parameters that summed up the qualities of a cameo layout. Here's what I came up with:

- It's small and concise, typically in the range of 3 to 6 feet long for the modeled scene, with added-on fiddle or staging yards as needed.
- It seeks to present its subject matter in as realistic and natural a manner as possible, using a stage-like presentation with a full backdrop and eye-level viewing.
- The model is integrated with a display and support structure – including lighting – designed to set it off to best advantage.
- The modeling is executed to a high standard: small but exquisite, favoring closer-to-scale wheel and track standards and a high level of detail.
- The layout is engineered for realistic, reliable, and refined running and prototypical operation.
- The whole thing should be as self-contained as possible and easy to transport, set up, and store.

The origin of the species

The notion of such small but self-sufficient model railroads goes back a long way in the British model railway hobby and has two main

driving factors. The first is the modest size of typical houses in the U.K., especially those built since the end of World War II, many of which offer limited space in which to build a model railroad. The second is the great popularity of model train shows in Britain, which in turn generates a high demand for layouts that are easy to move and set up and are designed for public display.

Though there are larger exhibition models, the logistical difficulties and high cost of moving, setting up, and staffing them means that most shows can feature only a few such displays. Compact layouts that can be moved in a hatchback or station wagon, need only one or two people to manage them, and are self-contained and well-presented are the supporting acts for the big players. The average British model railway show would be pretty bare without them.

Modularity

So the cameo layout has become a popular way to go railway modeling here in the U.K. and takes the concept of a self-contained miniature to its logical conclusion. In this, it has some features in common with modular (interchangeable) formats like Ntrak. But the cameo concept allows much greater freedom of shape, size, and interfacing. It's designed to function as a stand-alone rather than needing to be hooked up to other modules.

A cameo doesn't embrace any fixed dimensions, track centers, or electrical interface criteria, as modular layouts do. The cameo model has its own dedicated power supply and control system and is designed to be operated in isolation.

Visually, the big difference between a cameo and a module is that the former takes the concept of containment and presentation much further. It usually incorporates a diorama-style format with a wraparound backdrop, top, and bottom fascias and view-blocking wings at either end, all designed to frame the modeled scene and cut out unrealistic anomalies like the edge (or top) of the sky.

Learning points

- Cameos are by definition compact, usually less than 6 feet long.
- Cameos are self-contained and often based on prototype scenes (Layout Design Elements).
- Cameos are designed with public exhibitions in mind.
- Operating them from the front allows direct interaction with viewers at train shows.
- Off-stage "fiddling" allows new consists to be built.
- "Staged" presentation makes for realistic viewing.

POLBROOK GURNEY



“Polbrook Gurney” is a classic British cameo by a master of the art, Chris Nevard. This exquisite yard-long example depicts the pithead of a small colliery in the Mendip Hills of southern England and is thus the British equivalent to “Buda.” For more examples, see www.nevard.com. Chris Nevard photo

All this individuality doesn’t mean that cameos can’t be linked like modules to make a larger model railroad out of a number of smaller ones. They can; the main difference is they don’t have the universal connectivity of modules. Instead, they typically employ custom-built link sections about 12” long to join the cameos rather than the abrupt face-to-face transitions characteristic of modules.

These links have fascias to conceal the trains running between scenes (to lessen visual distraction) and usually take the place of the staging- or fiddle-yard tracks used when the layouts are operating in stand-alone mode. They’re also arranged to take care of any track-alignment and electrical-compatibility problems between adjoining cameos.

This “arms-length” linking does away with one of the chief anomalies of

modular layouts: the discordant note evident when modules of widely different theme and execution are butted one to another without any break, resulting in high summer in Nevada segueing to snowy March in Maine in a fraction of an inch!

Why build a cameo?

There are lots of reasons for trying your hand at a cameo. A cameo isn’t really a substitute for a regular model railroad – although if you’re really pushed for space or time, it’s a lot better than no model railroad at all! Rather, it’s an alternative, a different way of going about modeling many aspects of the prototype. It’s also a chance to explore something new – a different modeling scale, a different prototype subject or era, new scenery materials and modeling techniques, or some newly discovered aspect of prototype railroading.

And when you find yourself bogged down in some wearisome but necessary slog on your grand project down in the basement, a side order of contrasting cameo can be a most welcome relief. Cameos also make ideal projects for those of us who, like me, are getting a bit long in the tooth.

But even if you’re still in your prime, tackling a series of cameos avoids putting all your modeling eggs into one mega-project basket. It gives you the chance to dabble in differing waters in the context of a number of readily attainable layouts that you can flit between as your fancy takes you.

Operating potential

One of the drawbacks of the cameo is that, by its size and nature, it’s not going to have a lot of operational scope. So being able to “substitute players” when you get a little tired of a particular layout is a valuable asset.



Don Leeper positions a structure on “Hepton Wharf,” an early example of cameo construction dating to 1993. The model is illuminated by a “flying” light beam above head height; the black drape above the backdrop hides distractions.

For long periods in my own modeling career, I’ve adopted the ploy of keeping a small stable of different cameo layouts among which to enjoy a change of pace.

There’s a plus side to the modest operational potential of the cameo: While it may not match the scope of a bigger layout, it makes little demand on time and almost none on external resources to run. You don’t need to round up an operating crew to staff it, there’s little to maintain, and getting it running usually goes little beyond plugging in and switching on.

It is, in other words, the ideal tool for a 20-minute switching session as a relaxing unwind at the end of a taxing day in the office or a pleasant accompaniment to a cup of coffee on a Sunday morning. Think of it as tinkling out a few lines of Cole Porter on piano (with one finger) rather than trying to play some complex piece of Chopin.

A comfortable companion

Another – and related – characteristic of the cameo is that it isn’t intrusive. Unlike a conventional home layout, set apart and confined to the

basement, attic, garage, or spare bedroom, a cameo – framed with tasteful and well-finished cabinetry, artful lighting, and pleasing aesthetics – is generally far more acceptable in domestic environments.

If not occupying a place of pride in the front parlor, it can sit happily in a corner of the den, study, or family room, even a reception hall or conservatory. I also know of quite a few cameos tucked into the corners of professional offices, studios, and other work environments.

Exhibiting cameos

You may be wondering how the concept of a small front-operated display like this is received at model train shows, where the tradition has always been for the operators to work behind the layout with the spectators in front. This is obviously a no-go on a layout with a full-height backdrop, an integral part of the cameo concept.

In fact, this isn’t just not a problem, it’s turned out to be a plus. Given that any cameo layout is going to be linked to an offstage fiddle yard, it seems logical and natural for the operator to

stand off to the side of the exhibit, adjacent to the hidden yard, where he or she can see to run trains and carry out any necessary restaging in the fiddle yard. Only if there’s a snag is there a need to step in front of the model briefly to fix things, an intrusion not unknown on rear-operated layouts.

The big pluses of front operation are that you get to see your trains run from their best side, and you enjoy a much better relationship with your audience. Over the quarter century I’ve been doing this, I’ve found that you get far more of a response and are asked a lot more questions when you’re out front than you ever do while skulking behind the backdrop. You can also more effectively police the layout from the finger-pokers when you’re on the same side of the fence as they are.

Subject matter

Cameo modeling often calls for literally thinking outside the box, for looking at the prototype with your eyes wide open to see what you can model rather than getting all despondent about what you can’t. When space is tight, you have to make good use of

LONGWOOD EDGE



every inch, which somewhat naturally favors some subjects above others.

In the less-than-6-foot length of the typical cameo, even the strongest will in the world won't get you very far if the only thing that floats your boat is a Big Boy lugging a mile of freight cars over the Continental Divide or a multi-unit consist of modern six-axle diesels with a hundred-plus auto racks on the drawbar.

I've explored a number of cameo layout possibilities in the pages of *Model Railroad Planning*, *Model Railroader*, and various Kalmbach layout-design books over the years. For the most part, I covered prototype subjects where compact equipment and short trains are the rule: short lines, logging and mining railroads, industrial switching districts, confined waterfronts and harbors, and narrow gauge railroads.

A few other suitable themes I can call to mind include 1860s-era historical railroading, engine terminals, dam-construction or other temporary railroads, interurban/electric freight roads, streetcars, and inner-city street running. But for my case study this time around, I've gone for something just a little more mainstream: Depression-era coal railroading in West Virginia, as we'll explore shortly.

Cameo ploys

Often, making a cameo work entails a little ingenuity. One of the most useful track-planning dodges for cameos is the use of hidden movable tracks – sector plates/tables or plug-in cassettes in the fiddle yard – to substitute for turnouts. Turnouts take up a lot of length on a small layout whether they're visible or hidden in a fiddle yard.

But being able to swap locomotives and cars between tracks by using an unseen cassette or sector plate enables you to have more live tracks running into the modeled scene, which in turn opens up the switching possibilities. This is a technique that I've made considerable use of in many cameos over the years.

In fact, the design of the fiddle yard is often fundamental to the success of a cameo. It has to be in exact proportion to the trackwork in the modeled scene, so any train the scene can handle can be accommodated offstage. It's also important that fiddle yards don't detract visually from the model. Most modelers conceal them with drop-down panels or drapes chosen to match the cameo presentation when they're not in use.

When the layout is working, the fiddle yard – dark or only dimly lit



“Longwood Edge” is a large cameo in the final construction stages. It’s 6'-6" long plus fiddle yards at either end. It depicts the textile industry of West Yorkshire in northern England in 1900-1910. The substructure is built from laminated 4"-thick extruded-polystyrene faced with thin plywood, and the whole layout weighs about 65 pounds. Lighting is by daylight fluorescents.

– recedes visually in comparison to the artfully illuminated model. And if fiddle yards are arranged so that their front edge is set back a few inches from that of the modeled scene and they’re finished in a suitably restrained and complimentary color, they’re unapparent to someone standing in front of the layout. The wings at the sides cut off the direct sight line.

Controlling sight lines is a key to creating a realistic scene. Since you can view a cameo from only one direction, the front, you often need to model only one, two, or at most three sides of most structures, as the rest will be out of view. The limited viewpoint also means the viewer can’t peek

around something to see things that are meant to be hidden, like entrances to the fiddle yard.

One great advantage of the typical 5-to-6-foot cameo with side wings and fascias is that when you’re standing in front of and viewing the model, you don’t have much ability – or, indeed, inclination – to attempt any extreme viewing angles such as looking along the scene rather than across it. Rather, you tend to stand still and square-on and just move your head as needed to scan the scene, which makes well-placed view blocks and other visual tricks like perspective modeling and blending 3-D modeling into the 2-D backdrop far more effective.

Space-saving turnouts

When yard tracks have to be tightly packed in a restricted area, as in this case, the space occupied by each turnout calls for careful consideration. All turnouts aren’t the same, even if they’re the same frog number. There are also other choices than the common nos. 6 and 8. The Buda cameo uses two types of turnouts that offer a decent divergence in a compact space: the no. 5 straight turnout and the no. 4 wye, both offered by Peco in its 83 Line.

Micro Engineering (ME) has recently introduced its Ladder Track system based around a series of code 83 no. 5 turnouts. This offers a “close-coupled” variant – their nos. 5C and 5D combo – designed to pack adjacent turnouts as closely together as possible, with the switch points of one turnout close to the frog of the one preceding.

Both Peco and ME offer free downloadable full-size templates for their track pieces, which are ideal for the mock-up style of planning advocated for Buda.

– *Iain Rice*

Cameo – the flexible concept

As I hope you’re realizing by now, the cameo style of layout, with its staged presentation using the theatrical devices of backdrop, proscenium arch, side wings, and modeling along stage set lines, all carefully lit, offers a range of modeling opportunities that are just not so practicable on a conventional layout.

The cameo presentation draws you in for a much more intimate view than is usual with a normal linear scene. The controlled sight lines and wrap-around backdrop make possible a really natural and realistic depiction of your chosen subject. Such a presentation makes the most of high-quality modeling and fine detail.

If you’re still intrigued by my line of reasoning but would appreciate more background information, you may enjoy my book, *Creating Cameo Layouts*, published in the U.K. by Wild Swan Books in 2016. It’s available in the United States from International Hobbies, 10556 Combie Rd., Auburn, CA 95602 (www.interhobmodels.com).



“Buda” was inspired by the series of documentary photographs of Osage, W.Va., taken in 1938 by legendary Farm Security Administration photographer Marion Post Wolcott, now in the Library of Congress collection. Here Monongahela RR H5 2-8-0 no. 140 heads a coal train from Scott’s Run down Main Street in Osage, where the track is laid on top of the pavement. Marion Post Wolcott photo, Library of Congress collection

Up Black Creek

Welcome to a cameo case study: the evolution of “Buda,” my super-compact take on an Appalachian coal branch. This is an example of an instance where a carefully planned cameo can stand in for a conventional layout several times its size without actually losing anything essential.

Those of you who have a copy of my *Compact Layout Design* book will have made the acquaintance of the Black Creek & Buda, a fictional coal-hauling short line set deep in the backwoods of Monongalia County, W.Va. The layout design in the book used the theme of a rundown and outdated steam-era short line as the basis for an 11 x 14-foot walk-in layout. Among other features this design incorporated a typical coal-country “patch town” based on Osage, W.Va., with the railroad running up the street through the heart of town to serve a rickety wooden coal tipple set among rows of company houses.

As much as I’d love to build a layout like this for myself, there’s no way

I have the space in my 200-year-old stone cottage. For a while, I played around with a cut-down version that took in just the last third of the BC&B design – the run through town to the yard and tipple. But even that was too big for comfort; the staging had to run across an opening window.

But what if I made these two Layout Design Elements, the street track and the tipple, the theme of a cameo on the same site as my Trerice model – 4’-9” long with another 3’-3” of fiddle yard? [Layout Design Elements, or LDEs, are visually and operationally recognizable representations of prototype locations. – *Ed.*] Could I fit a snapshot of Buda on a similar footprint? One way to find out: try a mock-up!

Piano lid design

When designing any small layout, a key factor in the “givens” list is the maximum length of your proposed trains. This is a number that you have to decide right at the outset, not sometime down the design road. In my

experience, the only sure way to accurately establish train length is to assemble the desired consist and measure it or – better still – try it in place in a mock-up that also includes structures and landscape features.

It just so happens that the top of my ancient upright piano measures the same 15” x 4’-9” as the prospective cameo site. I had suitable HO equipment on hand – an old brass 2-8-0 and a selection of older two-bay hoppers and gondolas plus a “shorty” caboose. I used various empty cartons, bottles, jars, and so on to stand in for structures and other elements of the scene.

After a bit of chess playing to move these pieces around, I came up with a workable arrangement. At a later stage, I used Peco track templates to check out the track layout. By some miracle, it all fit!

Operating Buda

Operationally, this layout – like any cameo – is a switching puzzle. It’s also usually a solo occupation, as there isn’t

room for much of a crew in front of a layout scarcely a yard-and-a-half long. Two is about the maximum possible, usually one running the train and the other working in the fiddle yard lining switches and uncoupling cars.

Buda is set out on the premise of a train length of a 2-8-0, four 40-foot cars, and a short caboose. You may think that four cars is an improbably short coal train, but this type of branch, serving a number of small tipples along its route, was typically worked by dropping empty cars on the way up the branch and collecting the loads on the way back down.

And in this Depression-era scenario, many smaller mines would be working only at partial capacity, with few loads out each day. Therefore, at the end of the branch, which is what we're modeling, the train was at its shortest; by the time it got back to the junction, it might be several times as long.

The most interesting thing about this cameo version of Buda, however, is that you end up with pretty much the same operating pattern as you do with the conventional-format original: The branch train arrives from staging via the track up Main Street and enters the yard. The engine is then cut off to run around the train and retrieve the caboose to spot it somewhere out of harm's way, probably pausing at the water tank on the way to top off the tender. The loads can then be pulled from under the loading chutes and empties shoved in. That should tie up Main Street nicely.

With the loading tracks under the tipple holding six cars and four from the train, juggling 10 cars into the right spots in such a tiny yard isn't as easy as it may seem. Loaded cars are shoved back over the track scale one at a time for weighing and tied on to the caboose for the return trip.

Every once in a while, life gets even trickier when a boxcar or two of supplies arrives for the warehouse or cars need to be spotted farther down this kick-back spur (which can also be deemed to serve off-stage mines or other industries). Working out the runaround moves needed to spot or pull cars from this spur while still having the tipple to switch should keep even veteran operators on their toes.

Small a cameo layout may be; simple to operate it isn't! **MRP**

Iain Rice is a longtime contributor to Model Railroader and MRP. His books Shelf Layouts for Model Railroads and Compact Layout Design are available at www.KalmbachHobbyStore.com.



The railroad serves as the main thoroughfare between the town and mines and is flanked by the company housing in which the miners lived. Here, a coal miner's daughter brings lamp oil home from the company store. In Osage, many of the miners were of Hungarian origin, hence my choice of the name "Buda" for the layout. Note the ramshackle tipple and the mix of two- and three-bay hoppers and gons. Marion Post Walcott photo, Library of Congress collection



A woman in traditional Hungarian dress, probably the wife of a coal miner, walks the track into town. Everything from housing to railroad was forced elbow to elbow in the narrow valleys. Marion Post Walcott photo, Library of Congress collection

Two layout

This HO scale model railroad is a display at shows and an operating layout at home

By Jim Sacco//Photos by the author



2 New York, New Haven & Hartford Alco HH660 switcher no. 0923 emerges from the tunnel in the downtown portion of Jim's display layout. In the foreground is another Alco product, DL-109 no. 0709. New Haven was the largest owner of this passenger hauler.

ts in one



I This overview of the City Classics display layout shows that the HO scale layout is more than a sales display. Owner Jim Sacco designed the model railroad to allow a mix of through-train and local traffic.



3 Pittsburgh & Lake Erie Alco S-2 no. 8542 negotiates a canyon between tall structures to reach major customers at the end of the industrial spur. The structures at right are Smallman Street Warehouse kits.



4 A pair of P&LE Alco units, both lettered for parent New York Central, are busy today. Having finished its switching chores on the upper level, S-2 no. 8542 makes its way to the lower level, where RS-3 no. 8353 works the small yard.

I don't want to disillusion anyone, but not all of us in the model railroad industry have large, fabulous home layouts. As much as we love the hobby, there are various reasons why some of us don't have model railroads. It's as simple as not having the space or desire to build one. Or we may prefer devoting some of our free time to family or other pursuits that are important to us.

So when I designed a new display layout for our business, I came up with a dual-purpose design that could also serve as a small home layout until the time came to build a larger one.

In the beginning

I used to have a small switching layout that we'd take to train shows to display our City Classics kits. While it served its purpose well, there just wasn't enough room to add new kits, and it got rather boring just watching an engine go back and forth. So one of the requirements of the new layout was that there had to be room to run a complete train in a circuit and also an area for switching.

That was going to be pretty tough to pull off in a small portable layout that couldn't be much wider than 36", since it often sits on folding-leg tables that are 30" wide. In the end, the final size shown on the drawing ended up being 10 feet long by 42" at the widest spots. It narrows in the middle to about 30", which makes it easier to have conversations with those on the other side.

Although two locomotives can run continuously at shows (the upper switching section uses an auto-reverse circuit), most folks seem to be interested in its ability to serve as a small home layout where space is tight. To that end, the lower loop allows a local freight train to drop off cars to be switched for the rail-served industries. The cars can be spotted on the small siding, while other cars can be picked up from the runaround track on the other side near the wall. The switcher can then take the cars to the upper levels for the appropriate customers.

Of course, it's not quite that simple: Only one or two cars can be switched at a time, and some will require the use of the runaround on the lower level.

What seems to catch people's interest is that the switching operates on three different levels and loops under itself at one point. My good friend and micro-layout guru, the late Carl Arendt, used to say that I "designed" a modified version of Chuck Yungkurth's Gum Stump & Snowshoe, a switching layout that appeared in *Model Railroader* back in the 1950s.

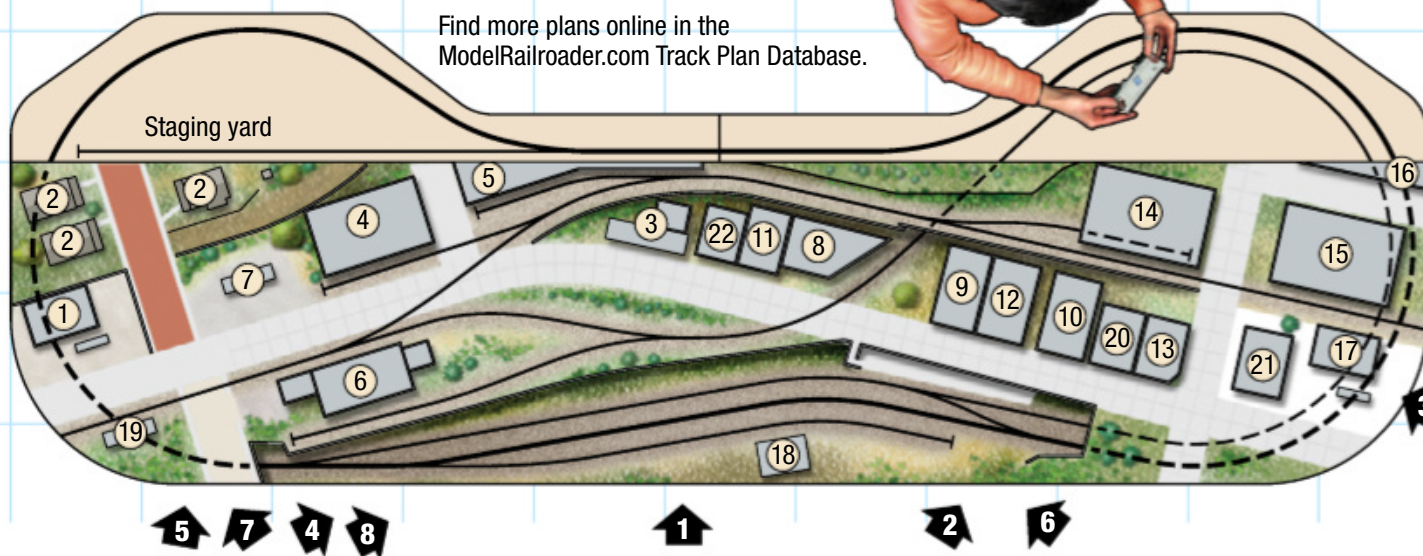
Meeting commercial needs

Another constraint I faced, other than portability, was that all of the structures needed to face the front, since the layout is a commercial display. If I were building this solely for myself, I'd have had greater latitude on how the buildings were placed and been able to use many other great structure kits on the market.

Also, if this were going to be a permanent home layout, I would include a small yard on the back side where trains could be built or staged. And while the rear of my layout doesn't have scenery, you could add a backdrop down the middle and scenic the rear section, too.

City Classics display layout

HO scale (1:87.1)
Layout size: 3'-7" x 10'-10"
Scale of plan: 1/2" = 1'-0", 12" grid
Numbered arrows indicate photo locations
Illustration by Rick Johnson
Find more plans online in the
ModelRailroader.com Track Plan Database.



1. Crafton Avenue Gas Station
 2. Railroad Street Company Houses
 3. Route 22 Diner
 4. Carson Street Rail/Truck Terminal
 5. Carnegie Street Mfg. cut down
 6. Carnegie Street Mfg.
 7. Roberts Road Mobile Home
 8. Baum Boulevard Art Deco (four kits combined)
 9. Penn Avenue (Tile-front kit)
 10. East Ohio Street
 11. Grant Street (Iron-front kit)
 12. Baum Avenue (Art Deco)
 13. West End Market
 14. Smallman Street Warehouse with add-on
 15. Smallman Street Warehouse
 16. Three East Ohio Street kits
 17. Crafton Avenue Gas Station
 18. Carnegie Street Manufacturing (office annex walls)
 19. Roberts Road Mobile Home
 20. Main Street Cafe
 21. South Side Salon
 22. Main Street Cafe (modified)
- Some structures may have been changed.



5 A P&LE Alco S-2 crosses a busy street near Otto's Auto Sales. The train is on a tail track that reaches a number of industries on the upper level.

The layout at a glance

Name: City Classics display layout
Scale: HO (1:87.1)
Size: 3'-7" x 10'-10"
Prototype: freelanced
Locale: Pennsylvania
Era: 1950s
Style: island
Mainline run: 24 feet
Minimum radius: 18"
Minimum turnout: no. 4
Maximum grade: 3.5 percent
Train length: 10 feet
Benchwork: birch plywood grid
Height: 44" to 49"
Roadbed: Vinylbed (now Flexxbed)
Track: Atlas code 83
Scenery: extruded-foam insulation board
Backdrop: none
Control: two-cab DC

When the layout was finished, I ended up with an outer loop that had an 18" radius on both ends. Many people are amazed that it can actually run large six-axle diesels like an Alco DL-109, which is a requirement if you're a New York, New Haven & Hartford fan like I am. However, large engines don't look very good hanging over the edge of tight curves, so to prevent that, I hid both end curves under the city.

I'm also a fan of local Pittsburgh railroads like the Pittsburgh & Lake Erie and Pittsburgh & West Virginia, which is why you see their engines.

Building the framework

Once I had the track plan finished, it was time to start construction of my layout. Since my carpentry skills are rudimentary at best, I asked a friend of

mine, George Nefstead, for a little help. Since George is a master woodworker, I wanted to see whether he could cut a few pieces of wood with kerfs in them so they could flex to make the front curved corners of the layout. He wanted a sketch of what I was trying to accomplish. A while later I received a phone call from George telling me that my layout was done and to come pick it up. He didn't just cut a few pieces of wood. Instead built the whole basic framework for me.

The layout is designed as four sections of open-grid framework made from 1/4" birch plywood. Every joint is tightly glued and gusseted. Wooden dowels keep everything perfectly aligned; the layout is held together with carriage bolts and wing nuts. There's also a series of holes in the

framework for running wires. George built a lightweight, rigid leg system that bolts together and uses metal conduit as cross bracing.

There was one slight problem, though. George lives in Milwaukee and I live in Pittsburgh, so it wasn't a short jaunt to pick up the layout. Instead, we planned a series of hand-offs between friends that would eventually get the layout to me.

Once I had the basic framework, I set about building the rest of the supporting structure. The first thing I did was to cover the open grid with a sheet of 1/2" Gatorfoam, which is lightweight, extremely rigid, and dimensionally stable. Once that was done, I used 1/4" lauan plywood, cut cookie-cutter style, to build all of the upper layers. It took a good bit of



6 The P&LE Alco S-2 threads between buildings that hide the entrance to the upper-level tracks from the rear staging area.

playing around and shimming to get everything at the right heights to ensure smooth grades and enough clearance under certain areas.

Track and switch motors

I used Atlas code 83 track for the layout. Most of the turnouts on the lower loop are no. 6s, while many in the tighter switching areas are no. 4s. I powered the mainline turnouts with Tortoise by Circuitron switch motors operated from a small control panel on the rear of the layout. The sidings use a simple spring turnout made from brass wire that can be flicked with a finger.

For roadbed, this gave me the opportunity to try something different. I used Vinylbed (now called Flexxbed) because I liked the fact that it never dries out, is stable in different temperatures, and its light-gray color looks pretty cool on the unscenicked parts



7 The afternoon calm is briefly interrupted by the air horn on New Haven Alco HH660 switcher no. 0923. The business-to-residential scene provides a nice contrast to the larger structures on the other end of the layout.

Learning points

- A display layout can also have operating potential.
- It may also form the basis for a future home layout.
- Many of today's six-axle diesel locomotives can negotiate relatively sharp curves.
- Expanded PVC (Sintra) sheets are an often overlooked scenery material.
- A staging or fiddle yard could be added behind the scenes, or a central backdrop would allow both sides to be scenicked.

of the layout. I glued both the roadbed and track down using Aleene's Tacky Glue. During the past 10 years, the layout has traveled cross-country in blistering hot to freezing cold weather, and everything is still in place.

Scenery and structures

Once the trackwork was done and working smoothly, I made the streets and sidewalks from 1mm and 2mm thick expanded PVC sheet, which is sold under trade names including Sintra. I prefer it to sheet styrene or plaster for a variety of reasons. In this case, it was for weight and durability, not to mention that I could easily emboss cracks and potholes into the surface. I also used commercial textured plastic sheets to make some of the streets and retaining walls.

Most of the structures were built straight from the package, since that was the main purpose for the layout. I built and painted most of them, but I also had some help from my good friend, Bill Hanley, and my wife, Cyndi, in painting some of them.

The electrical stuff

The layout is designed to run direct-current (DC) engines. It's hard enough to keep trains running reliably at shows, so I wanted to keep the electrical end as simple as possible. I also didn't want to bother equipping my older engines with decoders.

There are two separate isolated sections, which allow me to run two trains. But I also wired it so that the power can be turned off to certain sections. This causes one train to stop behind the visible part of the layout so the switcher has access to the lower level to pick up cars.

While I appreciate the value of highly detailed rolling stock, I primarily run inexpensive models at train



8 Jim's fondness for the New York, New Haven & Hartford is evident as a pair of Atlas Alco RS-11s chugs through town with a freight as a Pittsburgh & West Virginia Baldwin switches the mid level.



George Nefstead built the strong yet lightweight benchwork in two mirror-image halves from thin birch plywood. The "indented" area at the right of the display layout is planned as the site of a future staging yard.

shows, since the equipment takes a beating in transit.

Changing times

After using the layout for several years, I made a few changes. One was totally redoing the upper-left corner, which looked pretty uninteresting when I first built it. Instead, I added a steep brick-paved street, which is quite common in my area. I think the house-lined street added a nice residential touch to the layout.

Initially, I used trees made from natural material, but they weren't durable. Now I have plastic-armature trees that fit into brass tubing sockets hidden in the scenery base. This allows

them to be removed between setups. Many of the taller buildings are also removable so I can slide the layout into large plywood crates.

The layout is more than a decade old and has been to more shows than I can count. Even though packing and setting it up requires a good bit of work, I've enjoyed sharing it with others over the years. I think it shows folks that you can squeeze a lot of operation into a small layout. And when it's no longer on the road, I will still be able to enjoy it as my home layout. **MRP**

Jim Sacco is the owner of City Classics, which offers a popular line of N and HO structure kits and details.

Making a good yard design **better**



Moving provides a great opportunity to improve a railroad

By Paul J. Dolkos

Photos by the author



Steve Williams built a wonderful HO model railroad. It was largely finished when it was featured in *Great Model*

Railroads 2012. But a couple of years later, Steve and his wife moved into a larger home. Preparing for the move, Steve first considered dismantling and simply reassembling the railroad.

But it was likely he would have a larger space and different footprint than the 300 square feet the lower floor of his townhouse provided. So while he planned to stick with the Baltimore & Ohio branchline theme and use the same rolling stock and structures, he would need to create a new track plan. He would not only have the features he liked, but also work to avoid some issues he had with the former railroad.

It's an example of using lessons learned. It also offers an unusual opportunity for us to see a critical review of someone's model railroad, and here we have a chance to review Steve's own postmortem.

One target for some new thinking was the main yard. The design was based on a John Armstrong plan in his book, *Track Planning for Realistic Operation*, page 86 (Kalmbach Books, first edition). The design was solid. But as Steve operated the railroad, a number of improvements came to mind.

It should be said that even in a prototype facility, any yardmaster has a list of items he thinks should be changed. Here are design points Steve is considering for a new yard in his next layout. Some were part of the original design, some not. As you read along, consider whether the same drawbacks may apply to your own plan or layout.

Clearing bottlenecks

The old yard, shown in the accompanying section of his track plan, had all the key features: arrival/departure tracks, classification yard, switching lead, and engine terminal. However, these elements were interconnected at one end, so only a single function could be accomplished at a time; other moves had to wait. For example, the locomotives on through freights were usually changed, but the track from and to the engine terminal connected to the yard lead. The yard switcher had to move out of the way to let a road engine pass.

Steve Williams' curving East Connellsville Yard was beautifully modeled, but regular operations revealed some congestion problems. A yard switcher on the lead frequently blocked road-engine moves, and the narrow aisle limited crew access.



Engine terminals draw a lot of attention and should be out front where equipment can be easily viewed. Access to the engine terminal should be located so there is minimum interference with other yard operations. The open-air garden tracks made for a great display of Steve's steam roster.

This wasn't a busy operation where trains frequently arrived and departed – just two or three trains per actual hour, plus some originating locals. Nevertheless, working at realistically slow yard speeds to classify cars, move equipment into position, check paperwork, file waybills, and so on ate up time. Even with two yard operators, it was easy to feel out of control while handling those assignments.

The solution was to do what the prototype does when overloaded: have everybody wait his turn. "We'll get to you when we can." On a model railroad, operators usually want to be kept reasonably busy, as they're not being paid for their time.

Engine terminals

Steve will therefore try to separate some yard functions. He may move the engine terminal to the other end of the yard, designate a running track for engine movements, or perhaps eliminate some engine changes. Then the hostler could focus better on his assignment because the engine moves would be largely independent of other yard functions.

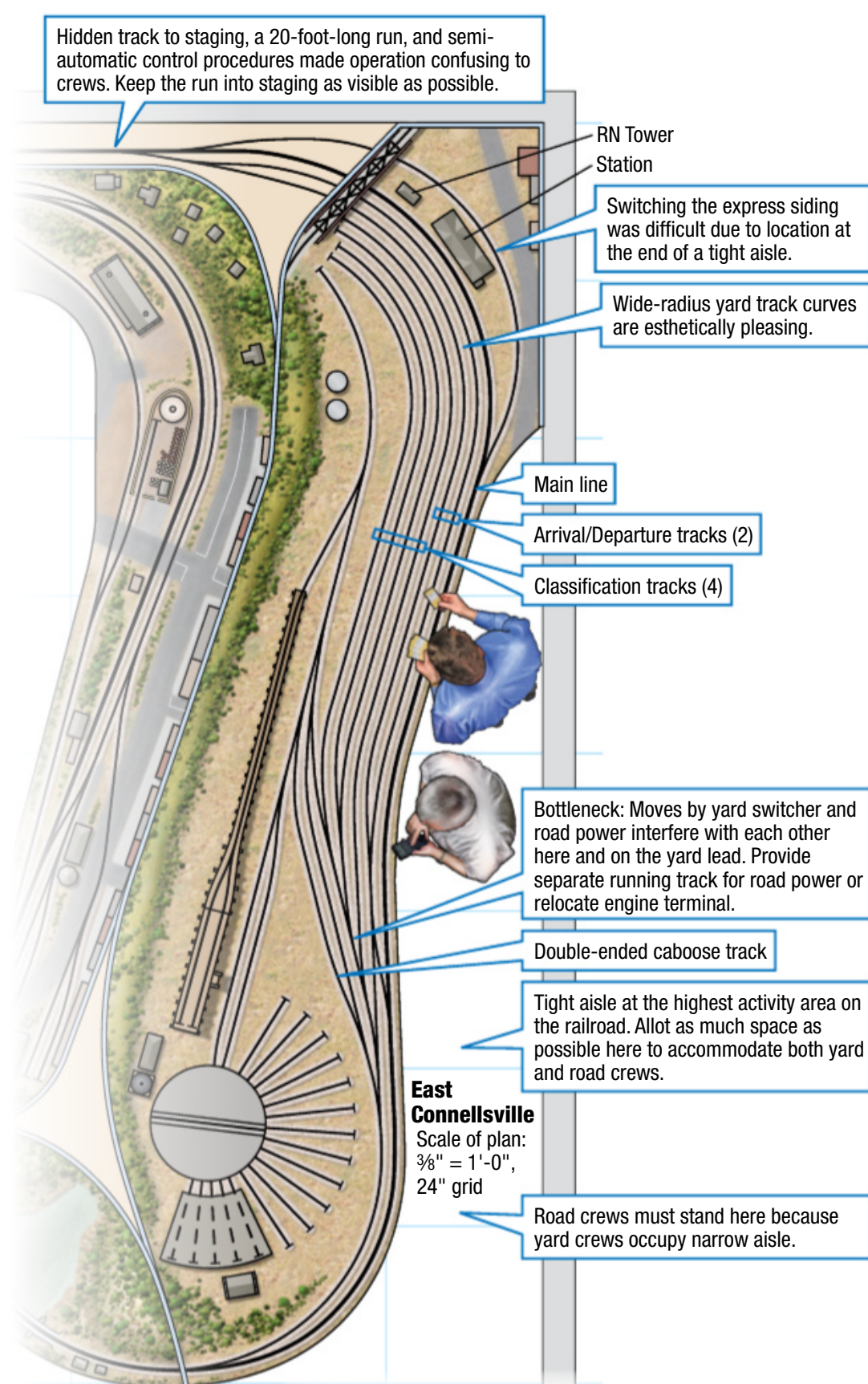
Locating the engine terminal away from the yard throat also provides a showcase for Steve's locomotive roster and a favorite viewing spot for visitors. The open-air garden tracks showed off his extensive B&O steam locomotives. They also made it easy for the hostler to find power for the next assignment.

Arrival/departure tracks

Typically, when a terminating prototype freight train arrives at a yard, the power runs to the service area and the consist sits for a while. Later, a yard clerk will walk the train to check the consist against the paperwork while another yard employee (a car inspector, commonly known as a car knocker) looks for mechanical problems.

After that, the yard office gives the switch crew instructions to classify the cars. In other words, arriving trains aren't worked the moment the wheels stop rolling, even though management would dearly like to speed up the process. So a yard needs a place for a consist to sit for a while.

To accommodate this, one or more tracks need to be designated for arrivals that can be occupied for extended periods and not interfere with other movements in the yard. The same is true for departures. These tracks can be a place where an out-bound consist is stored until a crew is called and power readied. Departure tracks don't have to be next to the





Steve's double-ended caboose track added a splash of color to the otherwise somber tones of the yard. Be sure the yard goat can quickly store inbound or pick up outbound cabooses without tying up the main line or engine lead.

classification tracks. They can be along the main line outside the yard proper.

On a model railroad, provisions for arrivals and departures could be just one or two tracks if the traffic density is relatively low. These tracks should be double-ended so locomotives can be uncoupled or coupled easily on either end of the consist. Steve had two arrival/departure tracks in his old yard that were suitable for this operation.

Adjacent staging

The major yard on a model railroad is often at one end of the railroad, where the track then runs into staging. This was the case at the east end of Steve's railroad; westbound trains ran into staging located at the other end of the layout room. He installed a semi-automatic system where the yard crews pushed a button to align the route for the desired staging track. They then turned up the throttle and the train ran into staging on hidden tracks. After it passed over optical detectors, the track power shut off and the train stopped.

On paper, this seems simple enough. Steve would explain this to crews, but it often didn't quite work.

Because the trains disappeared, one was never quite sure whether they had run all the way into staging. Sometimes trains would stall on the hidden section. Sometimes the light-sensitive detectors didn't respond. And often crews didn't fully understand how the semi-automatic system worked. Just the mystery of these unseen movements created uncertainty.

So on Steve's next railroad, he won't have hidden staging. Instead, one idea is to locate staging adjacent to the main yard where it's fully visible. It would appear to be part of the main yard, thus making it look larger, but would be operationally separate. One could argue that defeats the idea that staging is "beyond the basement." However, it's amazing how an adjacent but operationally separate area can be visually and mentally ignored while working in a foreground area.

Another approach, simpler in concept, is to have crews follow their trains into visible staging in another area. *Model Railroad Planning* editor Tony Koester assigns one crew member to handle all moves in and out of staging, thus not exposing road crews to "behind-the-curtains" areas.

What one chooses to do depends to a great extent on the space available.

Caboose tracks

Before cabooses were being phased out in the late 1980s, there was a specific yard track(s) where they were spotted and serviced between runs. Such a track would be appropriate even in relatively small model railroad yards set in the caboose era. At one time, cabooses were assigned to specific conductors, so more were required. (Away-from-home-terminal crews often slept in their cabooses.) On through

Learning points

- Configure yards so simultaneous operations are possible.
- The widest aisle in the layout room should be in the yard area.
- A caboose track adds a splash of color in a sea of boxcar red as well as an operational nuance.
- A plan is only a beginning. Don't be afraid to make mid-course changes during construction.



Steve recalls that whenever multiple operations such as a road-engine change, making up a train, and/or swapping cabooses occurred within a short span, this area of the yard became a bottleneck.



Yards that are just a sea of parallel tracks are visually boring, so scenic elements are attractive additions. The unusual wharf-style coaling and sanding station makes an effective backdrop.

trains, these would be swapped at division points. Moving cabooses around so they remain on their assigned divisions provides an additional task for yard crews.

Since a given caboose may have to be placed on either end of a consist,

the storage track should be double-ended. This permits the crew to move the caboose so it can be easily coupled onto a train. Moreover, a string of brightly painted cabooses sitting together in a yard is a colorful sight, and the track doesn't take much space.

Yard leads

A mandatory element of a yard of any size and complexity is a lead track that allows one or more cars to be pulled from a classification track to be sorted and placed on other tracks. At a small yard with one or two tracks, the main line can be used as a lead. But if there is other traffic, a separate "pull-back" or drill track is essential.

A common rule of thumb is that the lead length should be as long as the longest classification track or the length of the longest cut of cars being handled. In the pre-radio days, however, cuts were often limited by the engineer's ability to see a crewman on the last car of the cut being worked.

Reverse curves in the yard ladder that blocked the engineer's view often restricted cut length, hence the need for a long lead. Intermediate crewmen on the ground could relay hand or lantern signals, but in a busy yard, this wasn't always practical or safe.

Even full-size railroads may not have the real estate for a long lead. If a long lead is feasible, the assigned switcher may not be able to pull long cuts. So don't despair if a lead is a bit short, as long as the yard crew doesn't have to "double-over" cars on two or more tracks to make up a train too often.



A model of the Connellsville, Pa., passenger station was located at the far end of the yard where the track runs into west-end staging underneath the Pennsylvania RR bridge. Express cars were spotted on or picked up from the station siding, but its location at the end of the aisle made this difficult.

Steve's lead was about two-thirds the length of the longest classification yard track. If necessary, the switcher could occasionally enter the main beyond the lead's end, but still within yard limits, to handle extremely long cuts.

Yard scenery

Yards are largely functional and appeal to railfans and model railroaders because of the presence of multiple trains and frequent activity. A yard isn't normally the scenic highlight of a layout. But we can make our yards more interesting by incorporating some scenic elements.

One is to build the yard on a broad curve like a prototype yard squeezed between a river and mountains. Steve has done this with his East Connellsville Yard. He also included the prototype's large and unusual wharf-style coaling facility, which provides a physical backdrop. And he didn't forget to add small sheds for car knockers and bright-red fire hose stations. So there was more to see in his yard than just rows of tracks.

Aisle space

The grand plans of model railroads tend to encroach on aisle space. But

one area of layouts where aisle space should take precedence over the benchwork footprint is the yard. Yards often require more than one operator, and crews congregate there to pick up trains or terminate runs.

Tony Koester's Frankfort, Ind., yard requires east- and westbound yardmasters (overseen by a general yardmaster) and a roundhouse foreman/hostler. A staging crew handles trains in and out of the yard to and from three divisions. And the Commercial Engine and Swift soybean plant crews also occupy aisle space – all this before a single road crew shows up for duty. Even the 4-foot-wide aisle gets tight in a hurry.

Steve's aisle alongside the yard was only about 24" wide, and two operators were normally assigned there. It was tight, and people movements were restricted. This forced the road crews to stand at one end of the yard even though their train might be entering the yard on the opposite end. The aisle space allocation may have raised concerns in the planning stage, but correcting it would have hampered the other parts of the design. Nevertheless, Steve will give aisle width more thought with his next design.

One solution to accommodating multiple operators in a yard area is to have it accessible on two sides. In some cases, this can be done by creating a dedicated operator's pit across from the main aisle. Where that isn't possible, allotting 4 feet or more of aisle space along the yard eases the congestion.

Summary

While Steve had many successful operating sessions, he learned a lot that will significantly influence his next layout design, which is in the beginning stages. Earlier, I noted that every professional yardmaster, in a moment of candor, would tell you what should be changed in his yard to improve the facility. As in any job in a world of tight budgets and time constraints, these changes or improvements may or may not happen, but the yardmaster continues to move trains in and out of his domain, perhaps with some frustration.

On our model railroads, while we often note similar items that could be improved, we continue operations. And we call it fun. **MRP**

Paul Dolkos is a regular contributor to MRP.



Model railroading doesn't have to become an expensive hobby, but just like almost any hobby or sports activity, it often is. Today's plastic locomotives – such as this Broadway Limited Imports United States Railroad Administration light Mikado that Frank Hodina enhanced with a Proto 2000 tender and added details – equal or surpass many brass imports at a fraction of the price. Jerry Hamsmith photo

7 MORE THINGS NOT TO DO

Other mistakes we've made – and come to regret

By Tony Koester//

Photos by the author except where noted

I Not budgeting time and money

Most modelers I know derive a great deal of pleasure from our hobby. Like me, a large number of their good friends share their interest in scale model railroading. Many of them regularly attend several National Model Railroad Association and prototype modeling conventions each year, and it's like a family reunion. Even the non-modeling halves of these teams have found ways to get together and have a good time.

Like any other expense not included in the annual budget, properly funding one's hobby becomes a problem. Something that provides personal reward and enjoyment deserves a line in the budget. "Vacation fund" covers some expenses, but "hobby fund" is equally deserving of a budget line.



It pays to plan ahead for facets of our hobby, including realistic operation, that may now be of little or no interest. Here, Ron Von Werder hones his timetable and train-order dispatching skills on *Model Railroad Planning* editor Tony Koester's HO scale model railroad.

2 Failing to plan ahead for operation

I used to hear a lot of modelers say that they're "not interested in realistic operation." (That's less common today as the added fun of operation has become better known.) In some cases, I fully understand their lack of interest in adding yet another aspect of our broad-shouldered hobby to their repertoire. Their day jobs add so much pressure to their lives that they see model railroading as simply a passive activity where they crank open the throttle and a cool one and let the trains loop around the layout.

But there comes a time when even they will have less professional pressure or are retired. It would be nice if they'd initially designed their layouts to one day support realistic operation of some sort. As for the other naysayers, what I hear them saying is that they don't know anything about how a railroad goes about earning a living, and they aren't about to admit that to anyone, perhaps even themselves.

I used to say that a well-designed model railroad can last a lifetime. I now tend to doubt that. Even if our railroads meet our needs in every reasonable way, our interests change. I built a freelanced Appalachian coal hauler and really enjoyed building and operating it. But after 25 years, it was clearly time to move on and model a Midwestern granger railroad that offered less spectacular scenery but more challenging operation.

Different as those two railroads were, each offered myriad learning experiences, something that a simple place to run my trains wouldn't have. By planning for realistic operation of one form or another, I gathered the knowledge that allowed me to move on when the time came.

There are indeed times when I miss having a "coal road" in my basement, but I also greatly enjoy modeling a prototype railroad in a specific, narrowly defined time and place. By designing both for operation, I learned a great deal about how two vastly different types of railroads went about their daily toil. And learning new things, after all, is what keeps a hobby vibrant and fresh.



Waiting until you have all the information you'll need to start building your model railroad is an excellent way to waste a ton of time. Tony still doesn't know what downtown Metcalf, Ill., looked like in the 1950s, but he made an educated guess and can refine the scene later.

3 Waiting until you have all the info

This comes under the heading of "analysis paralysis." It's a horrible affliction. It can be cured with the realization that there is absolutely no way that you are ever going to know everything you'd like to know about railroading or model railroading. Just get on with it and improve things as you go along.

This isn't to say to just have at it. You should do a certain amount of due diligence sufficient to establish a beachhead. There's no harm in buying a train set lettered for the What-ever Central and plopping it down on a 4 x 8 sheet of plywood supported by sawhorses.

But while you're enjoying seeing your new trains run, hit the books. Was there a local railroad that might be a good modeling candidate? What about the railroad that ran through your hometown when you were an impressionable kid? Are there other modelers in the area from whom you can learn? Check the National Model Railroad Association's website, www.nmra.org, for a local Division, which will probably introduce you to some modelers who may become lifelong friends.

One day soon the inexpensive train set may prove to be little more than the price of entry to our fascinating hobby. Another railroad, another era, another scale, another gauge, and/or another type of railroading may catch your eye. Be open to the possibilities.

As the blurry picture of the opportunities that lie ahead begins to come into focus, refine your studies. Don't exclude options too quickly, but do narrow them down as your interests become clear. At a relatively early juncture, act on these interests. They may lead you down a blind alley; that's part of the learning process.

There's an equal chance they may show you a promising path to a lifetime of enjoyment. Just don't settle for "book learning." Get out and get under, as Henry Ford once advised. If not today, tomorrow. Every day of inaction is a missed opportunity.



Creature comforts – a room with good lighting (left), a well-equipped workbench and organized workspace (inset), perhaps a stereo, cable TV, or satellite radio – will go a long way toward ensuring regular progress on the railroad. Paul J. Dolkos and Jack Burgess (inset) photos



Tony recommends focusing on the big picture, trying to bring everything up to a level of quality that Allen McClelland aptly dubbed “good enough,” even though the piece-parts standing alone need not be contest winners. Allen McClelland photo

4 Not preparing a working space

When the late Hal Carstens moved *Railroad Model Craftsman* and his other hobby publications out into the beautiful Highlands section of northwestern New Jersey, he literally bought the farm. He got eight acres and a barn, then built a spacious Dutch colonial on a ridge that had a stunning view of the folded and eroded central Appalachians.

Jim Boyd and I were more interested in the barn than the house. The haymow of this former dairy barn was huge and wide open. “All” Hal had to do was have it insulated, heated and air-conditioned, lighted, and so on. And he had to trudge down to the barn on a steamy hot or icy cold night, turn on the air conditioner or heat, wait till the loft was habitable, all the while wasting time and deserting his family. Not gonna happen, we figured.

Wisely, Hal built a somewhat smaller, and more practical, Susquehanna Northern in his ample basement. That space was fully finished, close to family, and comfortable. As a result, the railroad was well along when he died.

Another good friend started building a basement-size model railroad based on a local favorite prototype. The basement was unfinished, dark, dank, cluttered – in other words, not a place you’d really look forward to visiting after a long day at work. So he waited till the boys were grown and gone and commandeered their adjoining main-floor bedrooms for a smaller railroad, one that actually got built.

He learned that lesson well. When they built a new home, again with an ample basement, he built the new model railroad on the main floor in a room off the garage.

And that’s the key: Unless you have a workspace that’s comfortable and readily accessible, you’re unlikely to spend much time there. The more experienced modelers among us suggest equipping your workbench with a good stereo system, a computer, maybe even a TV or satellite radio so you can watch or listen to the big game or “Gunsmoke” while you make progress on the railroad.

5 Counting each and every rivet

If you know enough about prototype railroading to be able to literally or figuratively count the rivets on your models and lament any shortcomings you find, you’re far ahead of the audience I’m addressing here. Getting bogged down in ensuring absolute realism, if indeed there is such a thing, is counterproductive.

Over time, your modeling will become more discerning. As your knowledge grows, you’ll discover that what was good enough yesterday isn’t up to snuff today. But that’s an endless journey; you’ll never know everything you “need” to know.

As you gain knowledge, you can upgrade what you have with better models. That’s part of the process; satisfaction with what you did a decade ago isn’t always or even usually a good thing. Constant improvement in all aspects of the hobby should be a primary objective.

Some talented modelers focus on a few projects that they research to the last detail and then build exquisite models thereof. Proto:48, or O fine-scale modeling, is a good example. But even some P:48 modelers build basement-size layouts that are superbly detailed across the board. See page 18.

Learning points

- Something as important as a hobby in terms of fully enjoying your life deserves to be a line item in the household budget.
- You may not yet be interested in realistic operation, but plan for the time when you may be.
- No one knows “everything” they want to know. Push ahead with what you know now.
- If the railroad space isn’t comfortable, you won’t go in there.
- A railroad that runs well and is interesting to operate will draw operators from a wide area.
- Trains need to come from somewhere and go to somewhere else.



There are indeed remote locations where rounding up a crew is difficult, if not impossible. But most of us will find that there are modelers within a reasonable driving distance who are eager to help build and/or operate our model railroads.

6 Assuming no one will help you

“If you build it, they will come” isn’t always the case, but it’s a reasonable bet. Some of my regular operators, including Layout Design Special Interest Group president Phil Monat (left) and Pat Scopeletti (next to Phil) drive more than an hour each way to my monthly operating sessions.

My schedule has always been busy and erratic enough to make holding regular work sessions difficult. Moreover, managing people was a task I preferred to leave at the office. But many modelers successfully employ large work groups, and the progress on their railroads is substantial.

This is another case of setting high standards and expecting everyone to meet them. Just as the comment that “model railroaders can’t be expected to do thus and so” during an operating session has to be met with a friendly but firm response to the contrary, so does any work that is substandard. Rather than chewing someone out, take time to show him or her how to do it to meet your needs.

But, just as at work, you’re not running a school for wayward carpenters or electricians or artists. Some friends are just not going to be able to contribute in meaningful ways. Your task is to find areas where they can help or take them aside to quietly explain why their services are no longer needed.

You’ll discover the same shortcomings when the railroad is fully operational. Some good friends may simply lack or refuse to develop the skills and knowledge required to operate your railroad realistically. So you might as well get used to the fact that, as at work, not everyone is going to be a good fit. If you don’t deal with that problem, it will soon affect the entire crew, and you’ll start losing the valuable contributors.



Passive staging yards can usually be tucked into areas above or below the scenicked portions of the railroad. This photo shows the west-end staging yard on Tony’s HO railroad. It provides a place for trains to come from and go to, simulating connections to the “rest of the world.”

7 Not including staging or fiddle yards

In *Model Railroad Planning 2015*, I discussed staging and fiddle yards. Here I’ll conclude with the comment that it’s shortsighted not to have at least one. They provide a handy off-stage place to store equipment – car storage isn’t what classification yards are for – and to hold trains that will be needed “on stage” or are leaving the scenicked part of the railroad.

Staging yards come in different varieties. There are passive staging yards, where inbound trains are blocked and stored ahead of time, or active (in real time) fiddle yards. The latter allow the railroad to operate indefinitely and ease or eliminate the need to restage the railroad between operating sessions, as the fiddle-yard operator (“mole”) handles that during the session.

You’ve probably already noted that in his overview of cameo layout design (page 66), noted British track planner Iain Rice shows that there’s a vast rail network beyond what actually is shown to the public. Trains enter and leave from stage left or stage right. So even the smallest of model railroads should ideally be connected to the rest of the rail network to ensure that a variety of rolling stock can realistically enter and leave the modeled area.

Adding staging to an existing railroad usually isn’t an impossible or overly difficult task. Since staged trains should usually not be readily visible, that means otherwise unattractive areas such as in a closet or behind a water heater are quite suitable for staging yards. **MRP**



Doug Tagsold ventured off the beaten path by opting to model a popular Colorado narrow gauge railroad in 1:72 using HO gauge track, mechanisms, boilers, and cars. Doug Tagsold photo

Modeling in 1:72

Thanks to Doug Tagsold! I showed the opening photo of his *Model Railroad Planning 2018* cover story ["Applying lessons learned"] to my wife and said, "Check this out!" She asked, "Where is that?" I said, "That's a model!" Incredible detail. It must be incredible in person!

*Don Weller
South Beach, Ore.*

Mention should be made that the 1:72 scale that Doug Tagsold is using is close to British OO at 1:76, about 5 percent larger.

*Karen Parker
Pickerington, Ohio*

On page 12 of MRP 2018, top right-hand side of the track plan, is a bold line that enters the wall at the back of the Argo smelter. What does this signify?

*John Harmon
Helena, Mont.*

That shows where the standard gauge line leaves the scenicked portion of the otherwise narrow gauge railroad. – Ed.

I'm convinced that model railroaders are an ingenious lot after reading Doug Tagsold's article on how he manipulated the scale of his railroad to make HO trains appear to be narrow gauge. This blew me away!

Great article and issue.

*Steve Ascolese
Staten Island, N.Y.*

Layout height

Congratulations on a great MRP 2018. I especially enjoyed the articles by Doug Tagsold, Neil Schofield, Clark Propst, and Pierre Oliver.

Regarding Paul Dolkos's article, "How high should your railroad be?": I've located the upper deck on my HO Burlington Northern at 54" and lower deck between 25" and 35". Sears roller

automobile-repair chairs with seats 16 inches above the floor are used for operating the lower deck. This allows aisles under other areas of the upper deck that people can navigate while sitting down. It also allows areas for the yardmaster to work out of the busy main aisle to operate the yard at Duluth, Minn.

I totally agree with the editor's comments in Rear Platform ["Why we build model railroads"]. I might add that while we build our layouts to pay tribute to full-size railroads, for some of us the tribute is equally to the professional railroaders who made our layouts possible. Without their input, they would not operate as realistically.

*Dan Holbrook
Aurora, Ill.*

Dan is a retired yardmaster whose model railroad – see "Bringing the railroad home" in MRP 2009 – is an



John Colombo insists on excellent performance from his N scale steam and diesel fleet, which is equipped with LokSound decoders. John Colombo photo

outstanding testimonial to both aspects of model railroading: building accurate models and operating them in an equally realistic manner. – Ed.

N scale DCC

Several readers inquired about what sound decoders John Colombo uses in his Nickel Plate Road steam and diesel power [“Bellevue reborn”]. John’s reply:

“The decoders are all ESU LokSound or ESU LokPilot V.4. For a three-unit diesel set, I generally have sound in the first and last units.

“I can’t tolerate poor operation – stalls, cars bouncing around, etc. Trackwork has to be perfect, wheels kept clean, and weight added where possible. I spend a lot of time tuning engine performance by adjusting the decoder’s BEMF [back-electromotive-force] control parameters and making sure the mechanisms are as smooth as possible.”
– John Colombo

Inspiration

Thank you for the inspiration MRP has given me. A few years ago we built a new house, and I had to dismantle my old layout except for one town based on John Allen’s “Timesaver.” I designed the new house with space for a large new layout, but after giving land grants for storage and a sewing

room for my wife, I had to seek an alternative. One corner of the rec room looked good, so I began planning a smaller railroad for that space. Planning was about all I accomplished.

The articles in MRP 2017 describing the Winston-Salem Southbound Tar Branch project [“Modeling a busy shortline terminal” and “Building the Southbound,” both by David Popp] caught my eye. I read the issue until the pages were dog-eared. Although not set in my preferred 1905 era, I was smitten by the concept. I could build this portable layout now and incorporate it into a larger layout later. I modified the original track plan a bit, but the benchwork is finished and I’m laying track.

The project has also given me an opportunity to try new materials and techniques, and also new technologies like Digital Command Control. Thank you again for the plan and the project. It has not only been entertaining reading, but also inspiring.

*Scott VanLeuwen
Allegan, Mich.*

Thumbs up from Down Under

MRP 2018 has to be one of the best-designed magazines I’ve seen in a long time. The content also looks great. The layouts covered just about any interest anyone can have, and the detail of the coverage is

great. Be hard to top this one next year, mate.

Rob McLearn

Kingaroy, Queensland, Australia

Turning locomotives

MRP 2018 is another excellent effort. I especially enjoyed Clark Propst’s article on his Minneapolis & St. Louis layout [“Modeling an M&StL branch line”]. I do have a couple of questions about Clark’s track plan: How is he going to turn the steam engine at each end of the railroad? And why isn’t there a runaround track in the staging yard?

*Walt Herrick
via email*

The M&StL built a wye east of town before retiring the turntable there. They would turn the entire (short) train on the wye and back into town. I didn’t want to build a wye, so I simply hand-turn any steamer at or near the appropriate location and have only the engine back into town. I plan to build another town beyond Story City that will have a turntable.

I plan to run 12-car trains, so I need as much track length as possible. I plan to stage or “fiddle” four trains from shelving behind/above the staging tracks. After a train makes its run, its cars are moved to shelves, different cars placed on the rails, and maybe engines are changed too. – Clark Propst

Genesis of a town

No drawing required



Clark's "drawing table" is the actual section of his railroad-to-be that he's planning. He prefers working with 3-D components rather than making a scale track plan. Clark Propst photo

I'm not one to draw a to-scale track plan. I need to see how the railroad and its customers will coexist in three dimensions.

The accompanying photo shows one of my slide-out towns – Zearing, Iowa – during the planning process.

("Slide-out" means I can remove that section of the layout to work on it or to replace it with a new section.) I have judiciously situated a few structures from my previous model railroad that I plan to reuse along with some extruded-foam insulation board blocks

cut to represent structures that are yet to be built. There are also copies of several aerial photos of the town, along with a railroad station map and Sanborn fire-insurance map of the town to help with placing and proportioning the structures.

I've located a few sections of track and a turnout or two to make sure there's room for both track and buildings. The freight cars are spotted at the three elevators in town. Two elevators will have the ability to load two cars; the smaller one can load only one. The cars need to be moved after loading, so I need to provide space to move the cars past the loading spout, hence the three cars.

There will be much more deliberating before I'm ready to actually fix the track in place and build all the associated structures. But we have to start somewhere. In my case, that involves working in three rather than two dimensions. – *Clark Propst*

Listen to those who worked there

Selective compression is fine — up to a point

I drew my track plan for the Monsanto plant in Addyston, Ohio, using satellite images and ZTS, or Zone-Track-Spot, maps as guides. These maps were made by railroads to aid their employees in understanding industry tracks and specific car spots for their customers. They're a wealth of information for prototype modelers, and go by different names depending on the railroad. Conrail and Union Pacific called them ZTSs, but other common acronyms are CLIC, SLIC, SPINS, and TIP. Many are available online; I found the Conrail charts at www.multimodalways.org.

Later, I was given a track chart (see the lower image at right) made by a fellow who used to work down there for Penn Central and Conrail. He pointed out that my car-cleaning track was a stub track – at some point, the railroad stubbed that track – but that it had been a through track in my era. Since I'd followed the layout of the prototype

tracks, it was fairly easy to add a second turnout at the other end of that track.

He also pointed out the former location of the track scale, which again was easy to add, as I already had a short section of track between the two turnouts where the scale had been located. He also explained to me what all of the tracks had been used for, and since my tracks followed the prototype's, it was easy for him to identify the tracks.

I had a similar experience with the Seagram's plant that I'm modeling. I had eliminated a crossover that seemed redundant, especially on a compressed layout. But a visitor who worked for the railroad noticed it was missing and told me why it had been there: They needed it to get around tank cars that were often spotted over the other crossover. It was therefore very important for duplicating operations there. – *Randy Seiler*



Checking prototype track diagrams and talking to those who worked the industries on Randy Seiler's railroad uncovered omissions. Randy Seiler photo



This track diagram, made by Conrail conductor Dan Macke, was helpful to Randy as he laid out the track for the ABS plastic pellet manufacturing plant at Addyston, Ohio.

Compressing scale speeds

What's right may not look right



Modeling motion is what scale model railroading is all about. But how fast should that motion actually be? Joe Atkinson photo

Several months ago, I lowered the maximum speed of my locomotive consists to encourage a more realistic operating pace. Later, I tested my locomotives with the Model Speed app for iPhones and found that I had done a really poor job of estimating speed.

It's not what you're thinking – my engines were actually going too slow by prototype standards! Yard locomotives that I intended to limit to 10 mph were actually going 5, and road locomotives that should have maxed out at 25 mph were doing 10.

I then adjusted the decoders up to scale speeds – the prototype equivalent of 10 mph (yard) and 25 (road) as measured by that same app. But that felt much too fast.

Given that, it became clear that true scale speeds were going to have to be similarly compressed to look right on the layout, and that the resulting speeds were now matters of opinion.

Finding what looked right

After much experimentation, 8 mph in the yard and 12 on the road were the speeds that looked right in representing my prototype's 10- and 25-mph speed limits. Those values weren't so fast that the feel of a laid-back regional railroad was lost for the road jobs, but not painfully slow either.

Interestingly, the speeds I eventually selected ended up only slightly faster than those I'd originally used: 3 mph faster in the yard and 2 mph on the road. However, those few miles per hour made a noticeable difference in the look and feel of trains on the

railroad. Crews that had expressed frustration about how slowly my locomotives were moving now report that the new speeds feel just right.

An acquaintance who is a Union Pacific engineer recently visited and wanted to try out the new Proto-Throttle. After he was running for several minutes, I asked him how fast he thought he was going. His answer was 40 mph. His actual scale speed was my maximum, only 12 mph!

Bonuses

I also found some added bonuses from this exercise. First, pacing operations by compressing scale speeds has been a very effective way of growing the layout. The trains are running at what appears to be an accurate speed, but the points I model seem to be farther apart. My medium-size layout now feels huge to me.

Second, the layout's curves now seem significantly broader to me. No matter how much work we put into accurately replicating our prototypes, operating through our necessarily too-tight curves at scale speeds can destroy realism. Compressing speeds reduces the train-set effect and makes the actual curve radii less noticeable.

No matter your prototype, I think you'll find that compressing scale speeds, just as we compress nearly everything else on our layouts, will improve the realism and enjoyment of your operations. Those of you now planning a layout may find you don't need nearly as much space as you may have expected. – Joe Atkinson

Marking your territory

Clearly marked lines help visualization



Lines drawn in silver marker on a black-painted base are easy to see and easy to "erase" with black permanent marker if they need to be moved. Henry Freeman photo

When it came time to lay out the track centerlines on a busy area of my Baltimore & Ohio Chicago Terminal HO railroad, I painted the Homasote subroadbed flat black. I then drew the track centerlines and edges of the streets using a silver-colored Sharpie, which really works great. As needed, I used a black marker as an "eraser."

I laid this out partly to visualize how it would look and partly to be sure I had room for the building that architect Jonathan Jones is building for me. The structure mock-up Jonathan made is to scale, although we'll add two more bays.

The building across the street is the one that will actually be placed there, and there's one more building I'll use after adding to the back to it. The others are just mock-ups from my previous layout just to give a feel for how it will look. – Henry Freeman



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Rear Platform



An interlocking machine salvaged from New York Central's Morgan Tower in Quincy, Ohio, now sees duty at the Coshocton Model Railroad Club in east-central Ohio. The inset shows the tower operator's view.

Using a piece of the past

An interlocking frame is put to work at a model railroad club

By Tony Koester//Photos by Lou Sassi

Many of us have collections of “railroadiana.” That usually takes the form of kerosene lanterns, employee and public timetables, rulebooks, maps, maybe even a conductor’s uniform and cap.

Not that they were trying to one-up the rest of us, but the Coshocton, Ohio, Model Railroad Club has a piece of railroadiana that’s a bit beyond the norm. Put another way, it’s not something you’d pick up at a train show and carry home in a bag: an armstrong-lever interlocking machine!

According to the club’s track builder and treasurer, Richard W. Jones, this interlocking machine was located in

New York Central’s Morgan Tower at Quincy, Ohio.

“When the tower closed in 1984,” Richard recalls, “George Detwiler contacted Conrail and purchased the machine. He and a small group of friends dismantled the machine and placed it in storage in his garage. When our building was constructed a few years later, the machine pieces were moved to Coshocton and reassembled in the club.

“It is fully functional and can control all of the switches and signals inside the plant limits,” Richard adds. “It is connected to the layout electrically. In the pit, there are contact boxes on all

levers that throw switch points, and on levers that tell the relay box how items are set.

“During operating sessions, we can control the interlocked area using the interlocking machine. Alternatively, with the flip of one switch, the area can be controlled from the dispatcher’s panel.”

For more information on the club, visit its Facebook page at www.facebook.com/amrec.rclub. They can also be reached by email at amrecrclub72@gmail.com. Richard notes that they enjoy having visitors; contact him directly at richard.prr.jones@gmail.com. **MRP**

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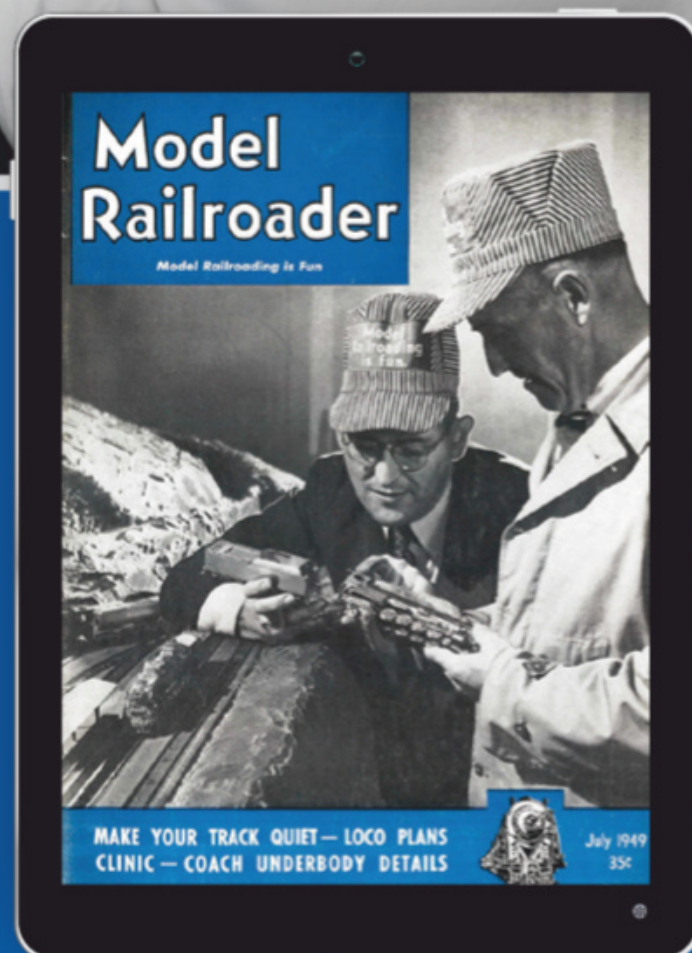


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