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Railroader

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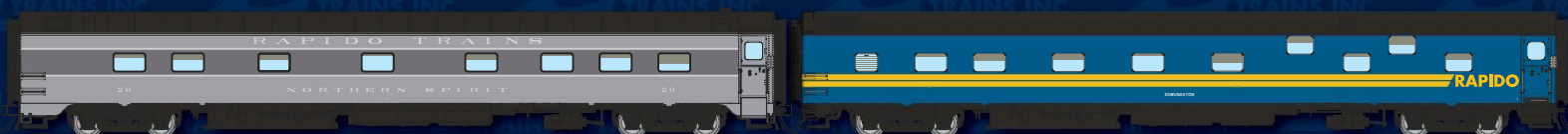
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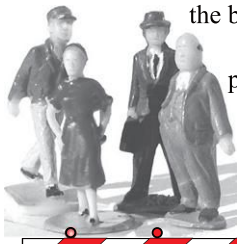
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Model Railroader SPECIAL ISSUE

GREAT Model Railroads 2025

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Built in stages, the HO scale Waynesburg & Washington RR reaches completion

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By Jon Stetz

COVER: An Iowa Interstate freight crosses the Iowa River on James McNab's HO scale layout, The Hills Line. James McNab photo



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Feels like starting over



THOUGH I SWEAR IT'S NOT INTENTIONAL, when I look at the articles we've selected for an issue of *Great Model Railroads*, a theme always seems to emerge. We pick each year's articles based on the quality of the writing, photography, and modeling on display, not to fit a theme. But almost every year, it seems that one presents itself.

Flipping through the pages of *Great Model Railroads* 2025, you might think that this year's theme is autumn. Out of the nine fantastic layouts showcased herein, a third of them — Tom Johnson's Cass County RR (seen on page 16), Chris Broughton's Little River Lumber Co. (page 36), and Jon Stetz's Durango, Rico & Northern (page 80) — feature fall foliage. Two others, Richard Remiarz's Great Northern Willmar Division (page 60) and Kevin Surman's New York & Long Branch (page 70), are also set in the autumn, though the leaves on the model trees haven't started to turn yet.

But that's just a coincidence. There's a theme with deeper meaning in these pages, and that theme is starting over.

We here on the MR staff know what that's like. Look at the masthead at the bottom of this page and you'll see what I'm talking about. This is the first edition of GMR that doesn't bear the big "K" of Kalmbach Media Co. Instead, you'll see the hummingbird icon of Firecrown Media Inc.

At the start of May 2024, Kalmbach sold *Model Railroader*, *Trains*, *FineScale Modeler*, *Astronomy*, *Trains.com*, and several other titles to Firecrown Media, a Chattanooga,

Tenn.-based publisher. We think our portfolio of railroad, space, and hobby publications will fit right in with Firecrown's brands like *Flying, Plane & Pilot*, *Boating*, *Yachting*, *Sport Fishing*, and *FreightWaves*.

This has meant some changes, though. We're leaving our Waukesha, Wis., home and moving to a new set of offices in Brookfield, Wis. Sadly, we had to give up our longtime staff railroad, the HO scale Milwaukee, Racine & Troy.

Dismantling a model railroad is often a reality of life. But such a loss can bring the chance to rebuild. Tom Johnson built his HO scale railroad after leaving his old one behind and retiring to Florida. Bob Grech's HO Western Pacific (page 52) also replaced a previous railroad left behind in a move. So did Richard Remiarz's HO scale GNRR. And James McNab constructed his HO scale Hills Line (page 42) after a sewer line burst claimed his previous layout.

Other layouts have seen big changes, too. Andrew Dodge shifted his layout's locale from Colorado to Maine (page 26). Kevin Surman added a deck to his. And when new basement real estate became available, Rick Crumrine finally got to finish his Waynesburg & Washington (page 8).

Sometimes, change can feel pretty good.

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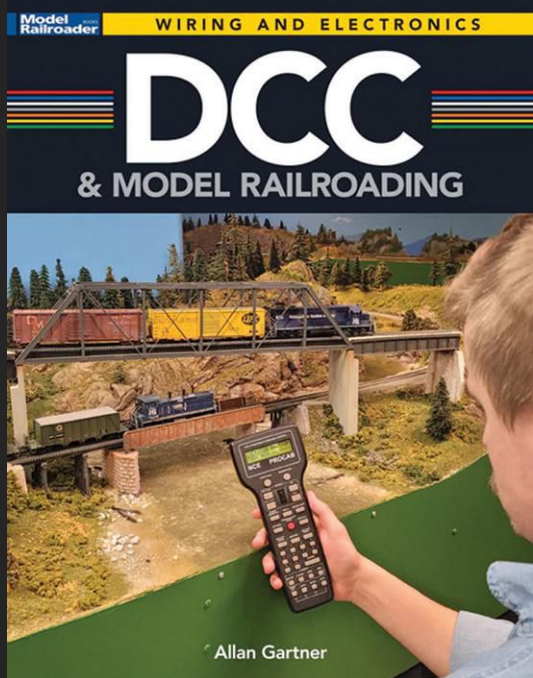
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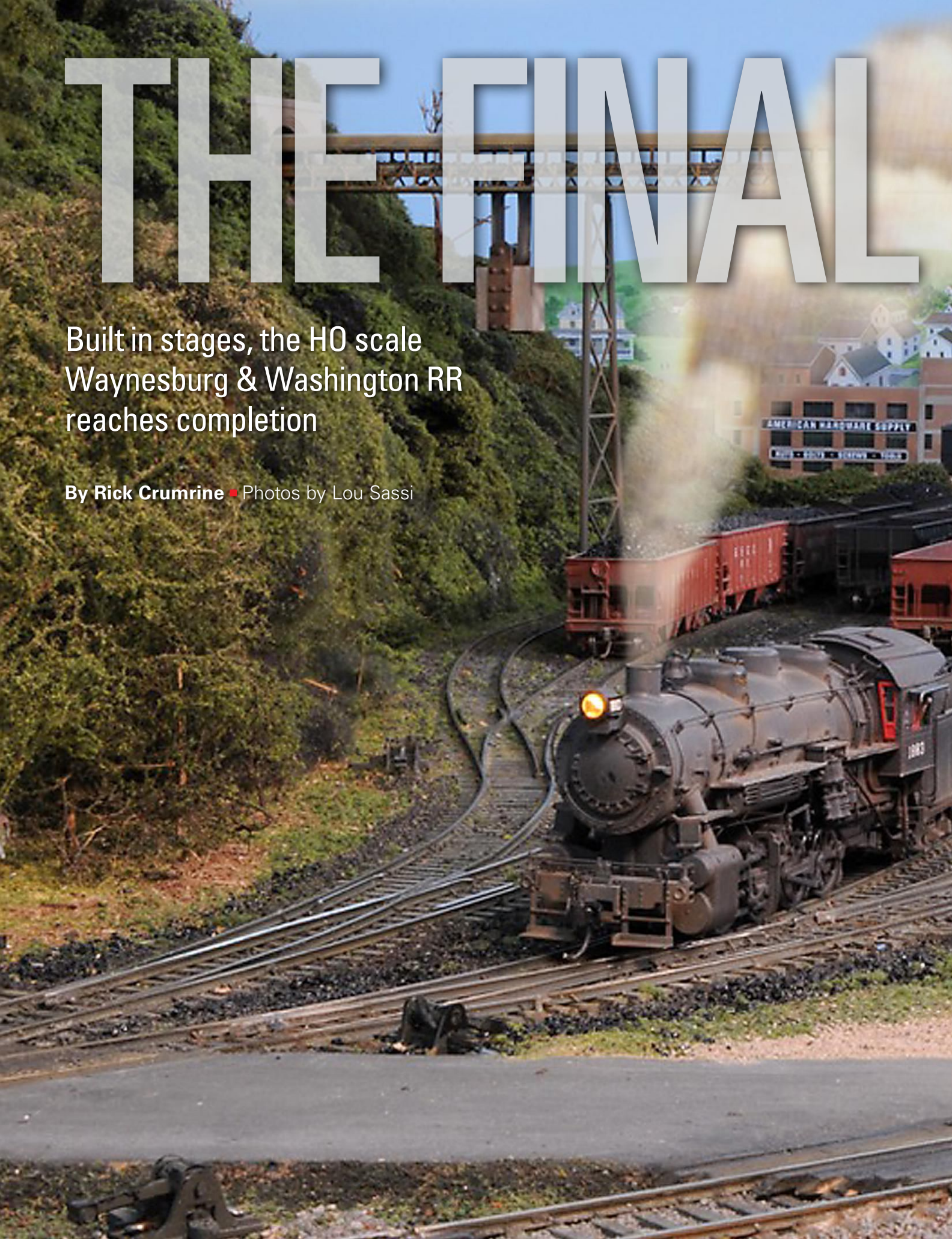


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THE FINAL



Built in stages, the HO scale
Waynesburg & Washington RR
reaches completion

By Rick Crumrine • Photos by Lou Sassi

PHASE



1 Horning Mine Co. switcher 1883 backs into Ruff Creek Mine to pick up some loaded hoppers on Rick Crumrine's HO scale Waynesburg & Washington RR. Rick recently expanded the layout, last featured in the August 2016 *Model Railroader*.



2 This photo shows the third phase expansion of the Waynesburg & Washington. The Pratt truss bridge (a Central Valley model) on the left is on the Horning Mine Branch. At center is the town of Ruff Creek and its coal mine. In the background is Waynesburg.

WE ALL KNOW THE SAYING that model railroads are never finished. My wife and friends laughed when I said my Waynesburg & Washington Railroad was finally done as I'd envisioned it years ago. Oh, well, we'll see.

I chose to model the Waynesburg & Washington RR because my family had influence in starting the "Waynie" (as the locals often called the railroad) and on where the track would run. The prototype ran through my Great-Grandmother Dunn's family property. The railroad built a station there that was named Dunn Station, after the family. It was a combined passenger station, grocery store, and post office.

I don't model the Waynesburg & Washington as the narrow-gauge line that the prototype was. The Pennsylvania RR had drawn up plans for regauging to standard gauge, as well as eliminating some of the sharp curves, so that's how I built my model railroad. Also, I prefer the steam-to-diesel transition era, so in my basement it's 1956.

STEP BY STEP

We purchased this full-size basement with a five-bedroom home on top of it in 1987. It was perfect for our family of two boys (then ages 12 and 9) and twin girls (age 2).

But my plan to fill the basement with a model railroad quickly ran into reality. I soon realized that my children needed room to play. I decided I would build my empire in phases, adding on as the children grew and eventually left home.

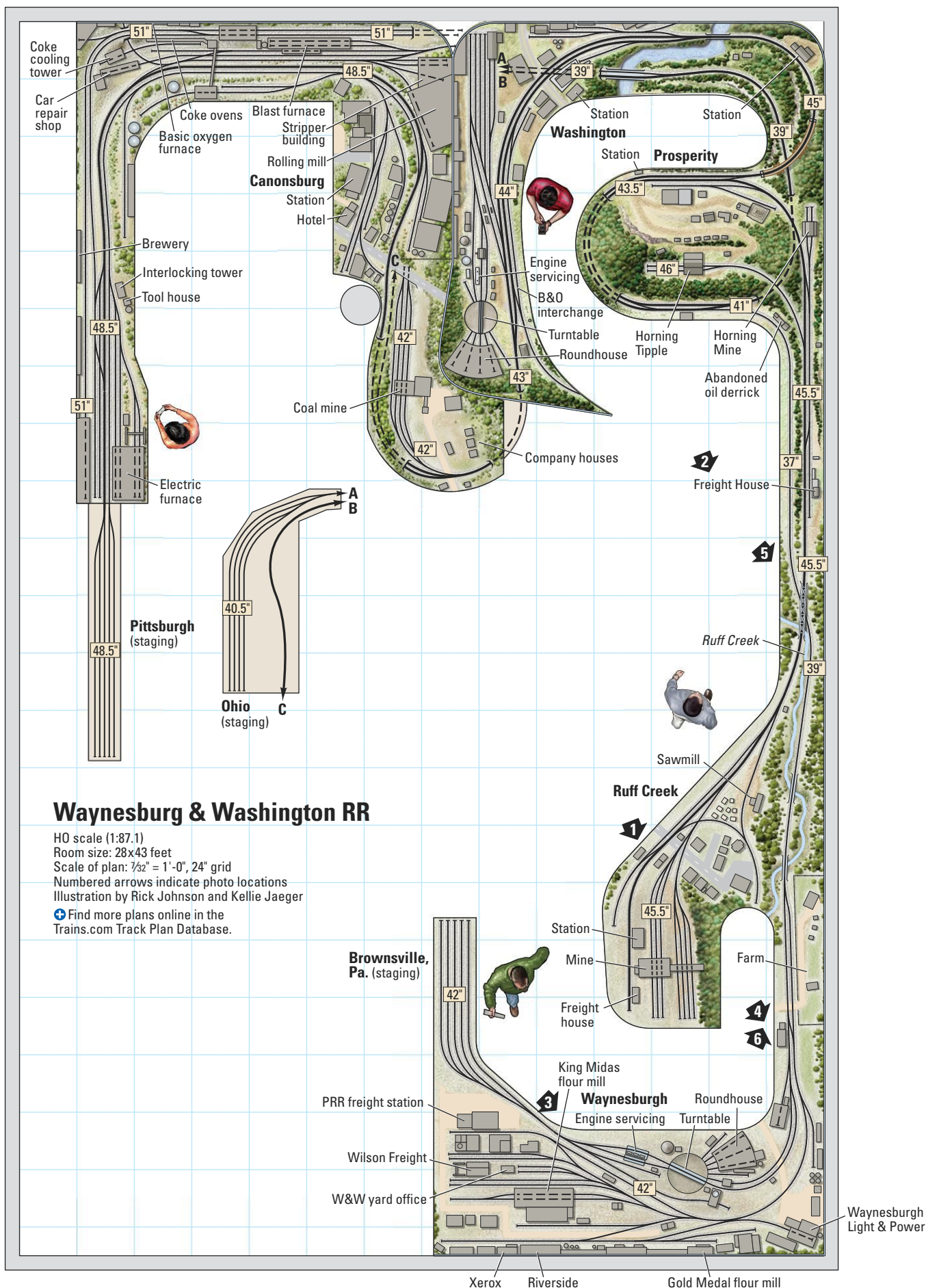
Track planning took about a year of revising and reviewing with friends. I started building Phase 1 in 1988. It took about five years to build. I handlaid all the track and turnouts. The results were well received by all my friends and published in *Great Model Railroads* 2003.

When I was able to negotiate more trackage rights in our basement, Phase 2 was launched. I liked the idea of modeling a steel mill with all its unique equipment. It also justifies a lot of rail traffic.

Phase 2 of the layout runs north of Washington up the Chartiers Branch

THE LAYOUT AT A GLANCE

NAME: Waynesburg & Washington RR
SCALE: HO (1:87.1)
SIZE: 28 x 43 feet
PROTOTYPE: Waynesburg & Washington, Pennsylvania RR
LOCALE: Southwestern Pennsylvania
ERA: 1956
STYLE: walkaround
MAINLINE RUN: 131 feet
MINIMUM RADIUS: 18"
MINIMUM TURNOUT: No. 4
MAXIMUM GRADE: 2.5%
BENCHWORK: L-girder and open grid
HEIGHT: 39" to 47"
ROADBED: Homasote
TRACK: handlaid code 83 (phase 1), flextrack with handlaid turnouts (phases 2 and 3)
SCENERY: hardshell (phases 1 and 2), plaster cloth over cardboard web (phase 3)
BACKDROP: photos and hand-painted 1/8" tempered hardboard
CONTROL: Digitrax DCC





through Canonsburg, where the steel mill is located. It then goes on to Pittsburgh, which is represented by staging. You can read more about this expansion in the August 2016 *Model Railroader*.

FINALLY, WAYNESBURG

My daughter bought a house and wanted the pool table from our basement! I could at last build Waynesburg.

Before drawing up plans, I had to decide what I wanted in Phase 3. I knew I wanted to expand the Horning Coal Branch, which would require a wye for

3 Alco RS3 No. 8591, a Bowser model, enters the turntable to be readied for service. The turntable is a Diamond Scale model Rick kitbashed to resemble a prototype he photographed at the Railroad Museum of Pennsylvania in Strasburg, Pa.

turning locomotives and a coal marshaling yard. And the miners would need some kind of community to live in. I also wanted a long run following a creek or river — not any buildings, just woods and nature.



Most importantly, I had to model Waynesburg. Waynesburg has a small yard by railroad standards, but it's interesting. The company offices and maintenance repair facilities were there. The yard really worked like an industrial park. Beyond Waynesburg, there would be at least five staging tracks.

When the Waynesburg & Washington RR quit operating freight trains, the businessmen of Waynesburg scrambled for a way to get their goods to market. The Monongahela Ry. (MGA), which was just 14 miles away, agreed to lay track to Waynesburg. The MGA laid dual-gauge track to the industries that would be served, but the two railroads didn't interchange freight cars there. But I wanted some interchange traffic, because tying into the Monongahela Ry. justified the prosperity of the region. I would represent the Monongahela Ry. with a staging yard.

PHASE 3 CONSTRUCTION

I was ready. I taped kraft paper on the floor and drew full-size plans on it. I figured out where the benchwork would go. Modifications were made. It would work.

With the help of my 10-person round-robin group, construction went quickly.



4 A pair of Pennsylvania RR Alco RS1s pull a coal train past Rosco's Engine Repair Shop, a Model Tech Studios structure. The locomotives are from Atlas Model Railroad Co.

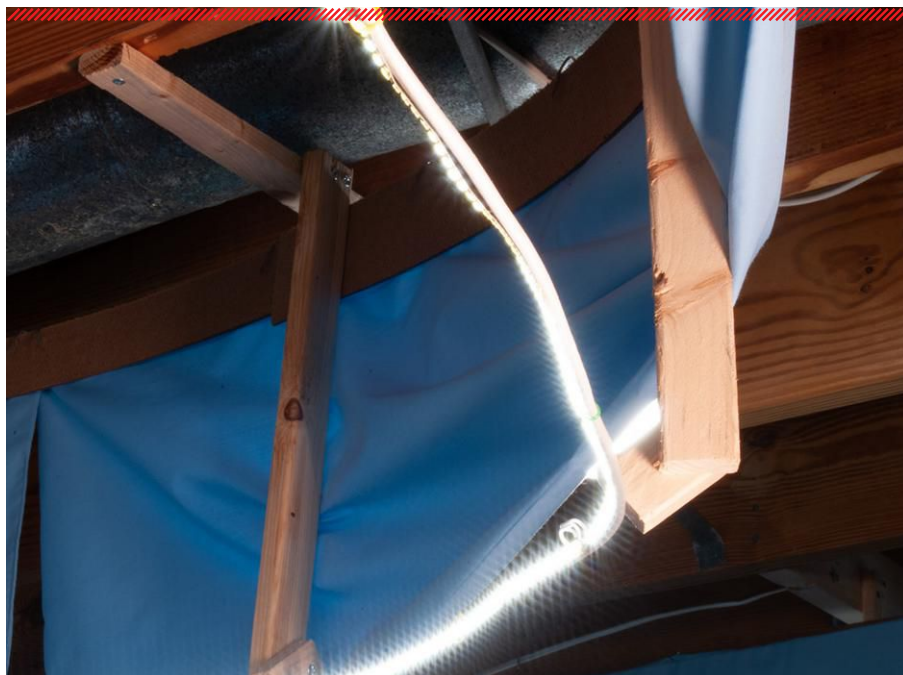
We used L-girder benchwork and splined Homasote for most of the layout and open grid topped with plywood and Homasote for yards.

I used code 83 flextrack on most of the layout and code 70 in the yards. Most of the turnouts were handlaid. There are exceptions, however. Waynesburg Yard is deep — 40 inches, which is too deep for handlaying. I used commercial turnouts for those farthest from the aisle.

I know it's deep, but we've made it work. More remote turnouts are lined using choke cables and push rods mounted on the fascia. I use ground throws everywhere else.

For uncoupling, I installed Kadec uncoupling magnets in the most distant spurs. Everywhere else, the yard crews use picks to uncouple rolling stock.

The staging is open. It's long enough to hold 10 cars with double-headed locomotives and a cabin car. Staging represents Brownsville, Pa., where the Pennsy



Rick used flexible light-emitting-diode strip lighting to illuminate the new section of his layout. It worked so well he used it to replace the fluorescent tube lighting above the older sections.

LED strip lighting

PHASES 1 AND 2 of my layout are illuminated by florescent light fixtures. Before constructing Phase 3, I wanted to see if there was something better.

I found that light-emitting diode (LED) strips are cheaper to purchase and operate. I ordered one strip and experimented with it over my existing layout.

The 16½-foot strip I ordered had 600 LEDs, making it much brighter than other strips I saw that only have 300 LEDs. Their color was 6000k. It wasn't waterproof. (I didn't need a waterproof strip, but non-waterproof strips are generally brighter than waterproof ones.) The strip came with a power supply and dimmer.

The LEDs lit up my layout similar to what the florescent light fixtures were doing, for about a third of the cost. I ordered enough to light Phase 3 of my layout, each strip with its own power supply and dimmer. The reason for this was the layout isn't uniform in height or depth. Separate dimmers would allow me to make the light a uniform brightness throughout.

The LED strip is about ⅜" wide with a self-stick backing. I installed a series of furring strips that extend downward 15" from the ceiling, then attached square blocks to them with single screws so they could pivot. I then attached a wood molding just wide enough to hold the strip to the blocks and adhered the LED strips to the molding. This way I can aim the LED strips to get optimum lighting on the layout and the backdrop.

That worked great for straight runs, but some of the strips would have to bend around curves. I needed a flexible solution. After much thought I tried Romex wiring in place of the wood molding. But after about a week, the self-stick adhesive started to come loose. My son, an electrician, told me that Romex has a waxy coating to make it easier to pull through conduit. That explains it! I reattached the LED strips to the Romex with cyanoacrylate adhesive gel.

I liked the results so much that I replaced the fluorescent lights above the rest of my layout with LED strip lights. My friend John Listermann was so impressed he also installed LED strips over his own layout. — *Rick Crumrine*



interchanged with the Monongahela.

From this staging yard, trains may have destinations anywhere on the layout. There are a couple of exceptions, and those are the Monongahela S-12s. The Monongahela has rights only to Ruff Creek Mine and Waynesburg Yard. Generally, trains going to Brownsville, Pa., are coal drags bound for the many coke plants in the area.

WORKING RUFF CREEK

Ruff Creek is a large coal mine in the town of the same name. This branch ties onto the Horning Coal Branch that I built in Phase 1, where there's a small mine and coal tipple. Ruff Creek features a turning wye as well as a coal marshaling yard.

5 Pennsylvania No. 8022 drags its train of empty hoppers over the Pratt truss bridge toward the Ruff Creek Mine. Meanwhile, on the main below, a pair of Pennsy GP7s leads a coal drag toward Waynesburg. The Electro-Motive Division diesels are Athearn models.

A dedicated switcher works the coal branch. Its job is to spot empty hoppers under the mines and tipple. Full hoppers are brought to the marshaling yard in preparation for shipping out.

When a train of empties arrives in Ruff Creek, the locomotive uncouples and runs around the train. If required, the engineer will turn the locomotive on the wye before coupling to the cabin car.

It will then back onto the leg of the wye by the lumber mill.

The switcher's job is to grab those empty hoppers and spot them in the marshaling yard. The switcher will then pull a cut of full hoppers and bring them out for the waiting road locomotive. The locomotive will couple up, pull forward far enough to clear the wye, back onto the cabin that was left on the sawmill leg of the wye, and head off to the train's next destination.

WAYNESBURG OPERATIONS

Operations are controlled by train orders, car cards, and waybills. Traffic is governed by operating block signals that are controlled by Signals by Spread Sheet software.



6 Pennsy No. 8022 pulls a string of empties past the Hurst family farm. They will pass through Waynesburg on their way to Brownsville, Pa. The locomotive is a Broadway Limited Imports model.

Switching Waynesburg is a fun operation that takes about 3 hours. There are several businesses to spot cars to or pull from. An operator must build trains on the outbound track and sort cars from the inbound track.

One passenger train runs out of Waynesburg Station. My good friend Tom Brueggeman scratchbuilt the Waynesburg station from plans in the book *Three Feet on The Panhandle: A History of the Waynesburg & Washington*

MEET RICK CRUMRINE

RICK CRUMRINE HAS BEEN married 53 years and has four children and six grandchildren, two of whom love trains. He retired from Xerox after 40 years. Rick is on the board of directors for Division 7 of the National Model Railroad Association and is chairman for the division's Fall Train Show. Rick also enjoys mountain biking, tropical fish, and gardening with his wife, Linda.



Railroad by Larry Koehler and Morgan Gayvert (out of print).

Construction of Phase 3 went quickly. There are about 10 of us in our round-robin group that meets every Wednesday. We either operate on someone's layout or help build a model railroad. We

share each other's talents in this hobby and have lots of laughs in the process.

For now, we're enjoying my completed Waynesburg & Washington RR. Will there be a Phase 4? Who knows! My wife and friends are convinced there will be more. **GMR**

INDIANA ON A SHELF



A modeler featured in *Great Model Railroads 2008* returns to his home state for another scenic masterpiece

By **Tom Johnson** ■ Photos by the author

YOU'RE LOOKING AT MY THIRD MODEL RAILROAD, the HO scale Cass County RR. It's a compact, around-the-walls shelf layout representing a small Mid-western short line operating on former Conrail trackage in the early 1980s.

Though my line is freelanced, it was influenced by two prototype short lines I enjoyed railfanning during photo safaris across Indiana. One was Indiana Hi Rail



1 Cass County No. 700, an Electro-Motive Division GP7, pulls into the north side of Logansport, Ind., with a string of empty Farm Bureau Co-op covered hoppers on Tom Johnson's HO scale Cass County RR. The freelanced railroad was inspired by two prototype Indiana short lines.

layout down and built a new shelf layout that was even longer and narrower. That one, the Logansport & Indiana Northern, was published in *Great Model Railroads 2008*. I started building my present layout shortly after my wife and I moved from Indiana to our retirement home in St. Cloud, Fla., in 2018.

I've been a model railroader for almost my whole life. My parents gave me an American Flyer set for Christmas when I was very young. I later bought my own Lionel set with money I saved up doing odd jobs. My Uncle George was into trains, and he later talked me into converting to HO scale. I once again saved my money and bought my first Athearn train set. I started building from there, purchasing more rolling stock and structures.

A COMPACT GRANGER LINE

My Cass County RR's purpose is to serve two grain elevators and a fertilizer facility. There are team track locations to spot boxcars for other purposes. I'm modeling only one small part of the Cass County RR on the north side of Logansport. There is one locomotive assigned to this district.

Since I'm 72 now, I wanted a compact and simple track plan that resembles the prototype, not a spaghetti bowl or anything remotely close to it. I also wanted the shelves to be narrow enough that I could complete scenery in just a few months. I sketched out a track plan and colored it in with colored pencils, then asked my friend Rob Chant to draw it up in a computer program.

Another benefit is that the layout is small enough for one person to easily maintain and clean. Dust is always an issue, even with central air conditioning. I can clean my track in about five minutes and vacuum the scenery in about 10.

Operation is easy for one person. I run at slow speeds, and it takes me about

in the late 1990s. The other was the Fulton County RR in Rochester, Ind., in the 2000s, which operated on some of the same track as Indiana Hi-Rail. Both were smaller short lines with simple operations that served grain elevators.

Logansport, Ind., is another town that inspired me. The Pennsylvania RR built a lot of trackage there from the 1930s through 1960s that later became part of

Penn Central and then Conrail. This made it a perfect choice for short line operation.

I've modeled this area before. My first model railroad, constructed soon after building our small home in the early 1980s, was a narrow shelf layout called the Indiana Northern. It was published in the November 1985 issue of *Railroad Model Craftsman* magazine. I tore that

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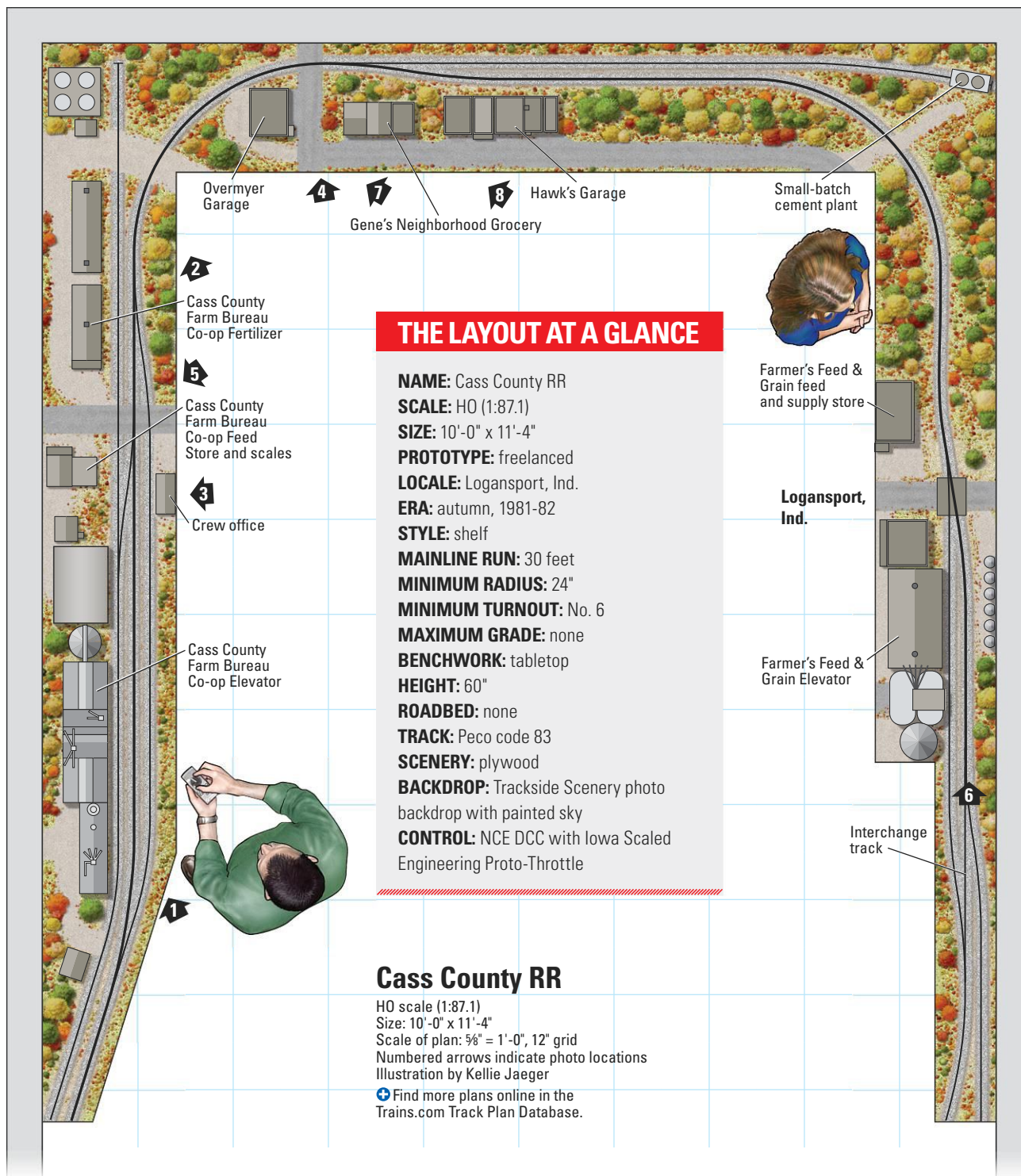
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I know where everything is when reaching in to line switches and uncouple cars. If my engineer is familiar with the Proto Throttle, then he or she can use it. If not, then they use my NCE cab.

THE STRENGTH OF SCENERY

I'm a retired art teacher and lifelong artist, so I approached my layout similar to a painting. I want a layout that is

highly detailed and fun to look at as well as operate.

Because my layout is small with very simple operation, I needed my scenery and details to slow down a visitor who views the model railroad. A person viewing a small spare-bedroom layout like mine might need only 10 minutes to take it all in. With quality scenery and lots of detail, it takes a visitor about an

hour to view it all. I've had visitors look over the railroad three or four times and find something new each time.

Scenery composition comes naturally for me. I'm able to visualize things in detail and place them together. I'm good with color and also enjoy the art of weathering the layout. Everything gets weathered to some degree. Some things have light weathering and others heavy.



My favorite weathering techniques are drybrushing and paint washes, both with oil paints.

For ground cover, I used mostly static grass and static grass mats with added textures on top. I cut the static grass mats into large sizes and shape them to fit the area. I spray the backsides with spray adhesive and place them on the layout. I then sprinkle in some real dirt and brush it into the grass. The spray adhesive is tacky enough to hold the dirt until I finish scenicking the area.

After adding textures such as Scenic Express SuperLeaf scale leaves, bushes from Dutch manufacturer Martin Welberg (martinwelberg.nl), fine turf

and flowers in various colors, and other materials to my static grass and grass mats, I spray all of it with maximum hold hairspray. I can pass my vacuum nozzle over the top of my scenery and not pull up one square inch of it. Well, maybe a leaf or two, but that's not bad!

I have two locations on my layout that allow for some of what professional layout builder Lance Mindheim calls negative space. In those locations, I built up layers of static grass to form some smaller rolling hills. Sometimes I'd build up three layers of static grass to make a hill. I added lots of SuperTrees and other bushes and various textures for variety.

3 The Cass County RR keeps its motive power stationed by a former Penn Central/Conrail transfer cabin that now serves as a small crew quarters. The cabin is by Bluford Shops.

I make a lot of my background trees with Scenic Express SuperTrees. I spray-paint them black and then soak them in matte medium. I sprinkle on various colors of Scenic Express SuperLeaf scale leaves and then spray on a final coat of matte medium. I hang them upside down on a clothesline to dry.

I've also had good luck using spray adhesive and then finishing with maxi-



mum hold hairspray. The matte medium method takes longer because of drying time. You can plant the trees almost instantly using spray adhesive. I've also had some really good results spraying the trees with matte medium, flocking them with short static grass to add extra fine branches, and finishing up with fine turf and scale leaves.

To model early autumn trees, I sprinkle green shades along the bottom half of the tree and yellows, reds, and deep yellows on the top half. Remember that a lot of trees in mid-October are still mostly green, along with the grass and bushes. You should have a mix of green and yellow, green and red, all yellow, and all



4 Tom changed his railroad's season from summer to autumn. In addition to changing the colors of his trees, he scattered Scenic Express SuperLeaf flock wherever dead leaves would accumulate — on the grass, streets, roof gutters, and even in the beds of trucks.

Changing seasons

I CHANGED MY RAILROAD from summer to autumn. It took me about three evenings averaging about 5 hours per evening making the changes. I hand-painted several of my large green trees — from MBR Model in Poland (en.mbrmodel.eu) — with artist's oil paints to show the tips of the branches changing color. Trees tend to change from the outside to the inside and from top to bottom.

I also removed a lot of other large green trees from MBR and Scenic Express SuperTrees and replaced them with autumn trees. Lots of trees in mid-October are still green, along with the grass and bushes.

I try to imagine where vehicles and wind will blow fallen leaves and where they'd gather. I added them to the grassy areas under trees, along the edges and middle of roads, on rooftops, and in gutters, places where modelers often miss. I even have a few leaves in the bed of a couple of pickup trucks!

I used mostly Scenic Express SuperLeaf scale leaves. I like the color called "leaf litter." The leaves are held in place with a 50/50 mix of white glue and water. I use 70% isopropyl alcohol as a wetting agent. Water and dish soap tends to bubble up too much.

I drybrush oil colors on top of the leaves after the glue is dry to add more variety in color. I stay with mostly mustard yellow colors with spots of dull red here and there. I weather the leaves along the edges of the roads with a dark muddy brown oil paint. Fallen leaves tend to rot after a while and stain the pavement. I also add texture and dark muddy colors around drains. These are the little things often overlooked. — *Tom Johnson*

red. (I am not a fan of bright orange for autumn leaves.)

I like going over my scenery with an artist's oil paints. I simply drybrush over my scenery to add some variety to the color you can't get with commercially purchased scenery materials. I also paint

the modeled scenery close to my backdrop with oils to help blend them into the colors on the photo backdrop so the transition is invisible.

My backdrop is from Trackside Scenery. I used my own photos on my old layout, but I didn't want to piece them



together or mess with someone stitching them together for my current layout. Trackside Scenery makes some outstanding backdrops that are ready to go and come in different lengths. The color in the backdrops is almost a perfect match for available scenery material colors. A little bit of oil paint might be needed to match the backdrop to some scenery materials.

I removed the sky off of the backdrops in order to paint my own. It was easier attaching narrower backdrop strips where the trees and buildings are instead of the whole backdrop with the sky.

My roads are made with fine gray sand purchased from Hobby Lobby. The sand is fine and uniform; you won't find stones in it. I apply masking tape to define the edges of my roads and sprinkle on the sand from above. I sift on the sand from a large spoon about 10 inches above the layout, building up a slight crown in the middle of the road. Then I

soak the road with water and detergent sprayed from a hairspray bottle. If you have bubble issues, then use alcohol as a wetting agent. Dribble on a 50/50 mix of water and Elmer's Glue from a spare glue bottle. When the road looks like a milky white, allow it to dry for about an hour.

Remove the tape from the edges and tamp the edges down with your finger. Take a small block of basswood and tamp down the rest of the road. If the sand sticks to your block of wood, let the glue dry longer before trying again. You want the texture of the sand, but you also want it to be fairly smooth.

After a day or more of drying, finish by painting the road a light gray and drybrushing different shades of light and medium gray. You can also add cracks in the pavement with a fine-tipped pen. I wrote an article for *Model Railroader* about how I model roads. [See "Continue your roads into the backdrop" in the October 2010 issue. —Ed.]

5 No. 700 is crossing Morgan Street on the north side of Logansport with several covered hoppers loaded with corn. Tom scratchbuilt the Pennsylvania RR-style iron crossbucks from styrene using prototype photos.

KITBASHED STRUCTURES

I used to build laser-cut wood structure kits back in my younger years. Now that I'm in my older years, I prefer building structures from plastic, and I enjoy kitbashing more. I kitbashed almost all of the structures on this layout, with the exception of one wood kit, my grain bins, and the Quonset huts. I did add lots of detail to them. The one wood structure on my layout is Overmyer Garage, which is a Showcase Miniatures kit.

The most interesting scenes on my layout are the two grain elevators, Cass County Farm Bureau Co-op and Farmers Feed and Grain. Both simply scream



small-town Indiana. The Farm Bureau Co-op also has a nearby fertilizer facility; together, they take up the entire 11'-4" shelf. The other elevator occupies the end of the 8-foot shelf on the other side of the room.

These industries also offer the most operational interest, with a variety of car spots for covered hoppers, tank cars, and boxcars. It's fun pulling covered hoppers loaded with corn or beans from both elevators and replacing them with empties. I can also park more empties on nearby off spots for temporary storage until a loading spot is free. All of this provides for more operation.

Another scene that gets a lot of attention, even though it's not rail-served, is Gene's Neighborhood Grocery, on the middle shelf. I've put a lot of detail and nostalgia into that model, and it's a favorite of visitors. Next door is Hawk's Garage, which repairs farm equipment and implements. I have lots of old trac-



tors sitting around in front and in the weeds on the side of the building.

DOING DETAILS RIGHT

I think structures should always have the appropriate detail. Don't just add barrels and crates just because you have them like a bunch of afterthoughts. Crates and barrels are overused. What kind of detail will you see at a grain elevator? You will see spilled corn between and on the sides of the track. You will see feed and seed bags inside door openings with the appropriate labels on the bags (Farm Bureau logos on the bags at Farm Bureau Co-op Elevator or Wayne Feeds at Farmers Grain and Supply). You might find a few pallets along the ground and in door openings. You'll see pigeons on the roof tops and by corn piles.

I make a lot of my details using photographs I find on the internet. I couldn't find period-correct soda machine models for the 1970s through the 1980s, so I scratchbuilt my own by layering photographs to add depth. I started with one whole photo of the front of a soda machine. Then I cut out the doors and signs from duplicates of that photo and built them up in layers on top of the first photo. I added hinges and door handles using wire or fine styrene tubing. I detailed all of my gas pumps, ice machines, newspaper machines, and street signs from internet photos.

6 A pair of covered hoppers are waiting to be loaded with soybeans at Farmers Feed and Grain Elevator. The elevator is a Walthers Cornerstone Prairie Co-op Elevator kit. The grain bin is from Grain Belt Models. The covered hoppers are from Tangent.

At a grocery store, you'll see a gas pump, newspaper machines, ice machines, mailboxes, chairs for the locals to sit out front and shoot the breeze, and a phone booth. You'll also find a soda machine or two and perhaps some soda cases for empty bottles beside the machines. Since I'm modeling mid-October, close to Halloween, I've also added a display of pumpkins.

There are no working signals on my layout. I do have a PRR-style position-light signal at one end of my layout, but it has the head turned, all the lights removed, and vines growing up the pole. In the 1980s, you wouldn't find working signals on a short line like mine.

One crossing has a signal that's been long out of service. One side of the crossing flasher is missing, probably broken off by a passing truck. The other side doesn't work. There's a red stop sign attached to the rusty post under the danger sign where the flashers were attached to the pole. All crossings are protected by the typical PRR-style iron crossbucks.



My telegraph poles are also out of service, though some are still around. Some are covered with vines with cut lines dangling down and laying in the weeds. Other poles have been cut down.

I don't have lighted structures or streetlights. I operate only in daylight, so I have no need for lights. It's just one more thing to fix if an LED burns out, so I stayed with my keep-it-simple approach. I make up for the lack of lighting with my detailing and weathering.

A COVERED HOPPER FLEET

My operations center on local freight service. Operations are simply bringing in empty covered hoppers to the grain elevators and pulling loaded ones.

The Farm Bureau Co-op elevator has the most operational interest. I can spot and pull covered hoppers from the elevator section, which has a pivoting loading chute. When empties are spotted, I swing the chute out above the hoppers' roof hatches. When the hoppers are loaded, I turn it back in against the elevator siding. I also can spot a couple of

boxcars at one of the sheds for bagged feed and seed. The fertilizer facility also gets covered hoppers for bulk fertilizer, lime, and potash.

I've built my rolling stock fleet based on my observations of several prototype granger short lines over the years. Most of the covered hoppers are supplied by the railroads in the area. The prototypes that serve the Cass County RR in the Logansport area are Conrail; Norfolk & Western; and Toledo, Peoria & Western (TP&W). My covered hoppers are mostly decorated for Conrail and TP&W. I also have a few former Penn Central hoppers patched for the Cass County and a few painted for Farm Bureau Co-op.

Most of my rolling stock is ready-to-run models from Tangent, ScaleTrains, and ExactRail. An InterMountain Railway Co. hopper will occasionally show up on my layout. I enjoy taking Accurail covered hoppers and adding lots of details to bring them up to the standards of the other cars.

The locomotives on the layout are a couple of Electro-Motive Division GP7s,

7 Overmyer Garage is one of only a couple structures on the layout built from unmodified kits. Most of the structures on the layout were kitbashed or scratchbuilt. The garage is a Showcase Miniatures laser-cut Lee King's Radiator and Muffler Repair Shop kit.

a GP30, and a GP35, all of which were purchased second-hand from Conrail and N&W. An Alco C420 was recently scrapped. All of my locomotives are equipped with ESU LokSound DCC decoders. I thought about adding sound modules for ambient layout sounds, but the sound from a locomotive is all I need for now.

I fade my rolling stock first with a thin grayish-white enamel paint sprayed on with an airbrush. I like how this fade effect looks on dark car colors like Conrail Freight Car Brown and N&W Locomotive Black.

The grayish white is also good for fading yellow. I follow that by spraying on some of the darker grungy colors on the



8 Two of the businesses along Midland Street on the north side of Logansport are Gene's Neighborhood Grocery and Hawk's Garage, which repairs farm tractors. Gene's was kitbashed from three Walther's Cornerstone Benson's Five and Dime kits. Details are from Showcase Miniatures, Walther's SceneMaster, and Athearn.

hopper bays, along the bottom edges, and between the ribs, ends, and top. I use a dark grayish brown, rusty brown, and a lighter dusty or earth shade in certain areas. I seal this layer with a coat of Testor's Dullcote.

I finish my weathering by hand using paint washes and drybrushing, both with oil paints. I seal the weathering with a coat of Dullcote between each layer. I enjoy drybrushing the most because I can build up layers gradually with this technique. I always finish with Dullcote or a 50/50 mix of Dullcote and Glosscote for a satin finish. Not all rolling stock is dead flat on the sides.

KEEP IT SIMPLE

I'm a fan of Lance Mindheim, and I like his simple approach to track planning and operation. I don't agree with adding more track just to provide more operation. The track on my layout is what belongs there and nothing more.

My advice to other modelers is to keep it simple and not bite off too much. Because I kept things simple, I finished this railroad in less than a year. Now I'm having fun tweaking scenes, adding more detail, and operating about four days a week.

My railroad was built for one person, and that person is me. I'm 72 now and just need a little something to keep me busy and provide enjoyment right here at home. I'm also at home with my wife, which is a good thing. I've done the long drives to operating sessions, and those years are behind me now.

What would I do differently if I started over? I'd build this layout in N scale so I would have more running room between towns. I'd drop down from a 16" deep shelf to about 8-10" in

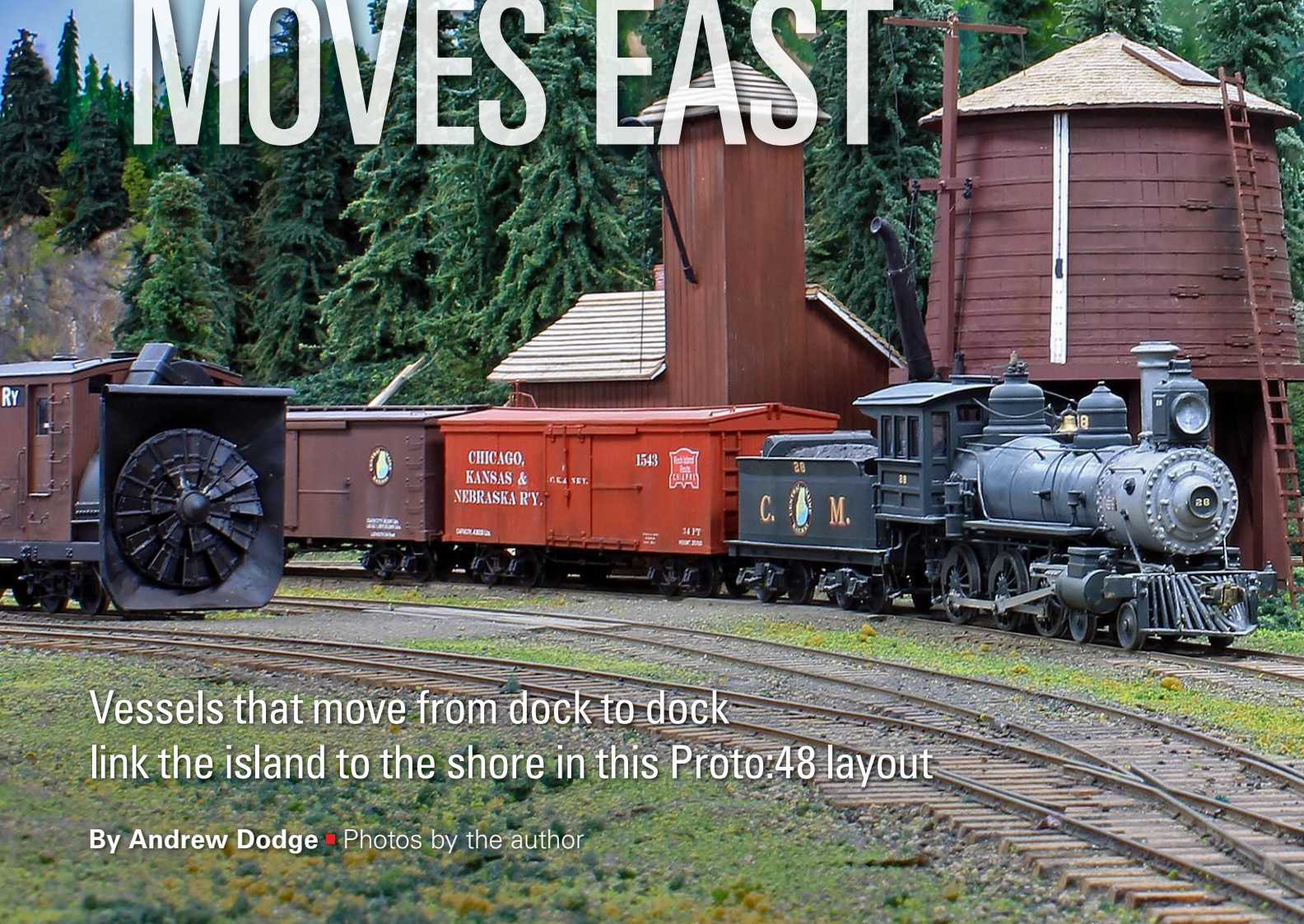
the town areas and even down to 6" in the single-track rural sections. Imagine how simple and quick to build that would be! Building in a smaller scale would be fun, and I think I could achieve the level of detail I currently have with my HO layout. **GMR**

MEET TOM JOHNSON

TOM AND HIS WIFE were both teachers in Plymouth, Ind., — he a middle school art teacher, she a second-grade teacher. They retired to St. Cloud, Fla., to be near their daughter and son-in-law, both of whom are also teachers. They enjoy visiting the Disney theme parks, which are about 30 minutes from their home.



THE COLORADO MOVES EAST



Vessels that move from dock to dock
link the island to the shore in this Proto:48 layout

By Andrew Dodge ■ Photos by the author

ONE DAY SEVERAL YEARS AFTER the “completion” of my Proto:48 (O fine scale) Colorado Midland layout, I was intrigued by an ad for a twin-stacked late 19th-century Hudson River tugboat in 1:48 scale. My love affair with model boats goes back as far as it does with model railroading, so I ordered it.

While building the kit, I saw another flyer from the same company for a side-

wheeler with a walking beam, also in 1:48 scale. Too weak to resist such a beauty, I plunked down my money and bought it, too.

Now that I had two O scale ships dating from the 1890s and a model railroad in the same scale and time period, my imagination took off. I began to wonder how I could merge the two hobbies into one modeling project.

Obviously, it couldn't be set in Colorado. The two best alternatives would be the Pacific Northwest or the coast of Maine. Being one who prefers to go down the road less traveled, I dismissed the Pacific coast, since it has been superbly modeled before by others.

Maine would be the location for the new layout. But where in Maine, and what could I do with my 13 scratchbuilt

DO MIDLAND

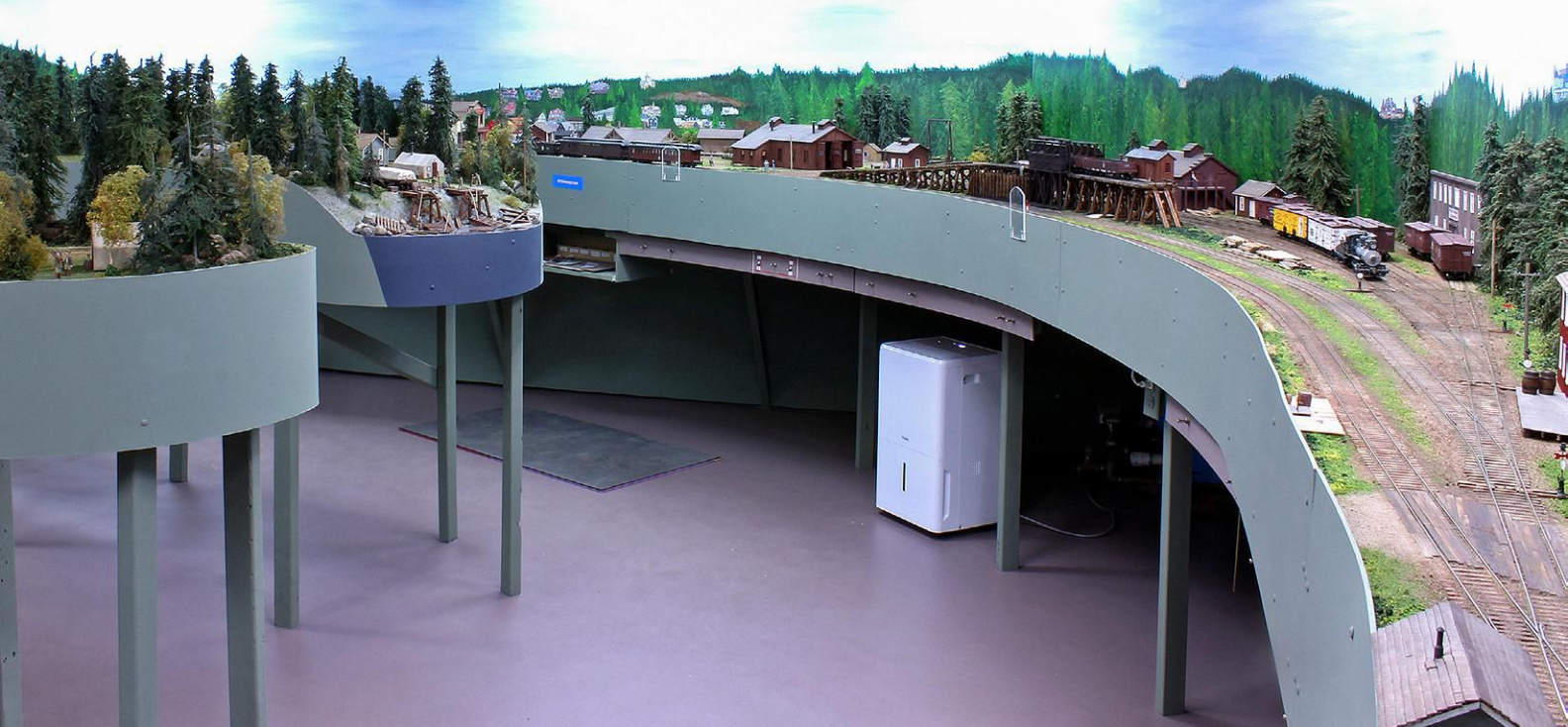


brass steam locomotives from the Colorado Midland? Keeping the same equipment and lettering was vital. I didn't want to redecorate it, so I decided to freelance. I kept the "C.M." on the tenders and named the new line the Central Maine Ry. All I had to do was create a new herald to cover the Midland herald between the C. and M. I followed a similar procedure with my other equipment.

CONCEPT AND DESIGN

One of the modeling aspects that interested me the most was to incorporate an island into the layout, which would justify the boats. I had the trains and the two types of ships that would make moving people and railcars an enjoyable operating system. Mt. Desert Island is the largest island off the coast of Maine, but it was already served by the Maine

1 Camden Junction is a busy meeting place for trains on Andrew Dodge's Proto:48 (O fine scale) Central Maine RR. Andrew replaced a peninsula and revised several other scenes to convert his former Colorado Midland RR to an Eastern coastal railroad.



2 The two peninsulas at left, connected by a wye at their base and representing Deer Island, replaced a former Colorado mountain scene. At right is the yard at Stonington. Controlling dust, humidity, and temperature helps maintain the quality of the trackwork and operational reliability.



3 Reefers of fish and lobsters from Deer Island must be iced just before they are loaded on the carfloat for their journey to the mainland, making the icehouse at Stonington a hectic place just before sailing time. On the elevated coal dock on the left is a stockcar used to carry bagged sand for the sand house.

Central and catered almost exclusively to passenger traffic, with no service beyond the dock. The next biggest island was Deer Island.

Although no railroad ever operated on Deer Island, it seemed the perfect location. The island's economy was centered on its fishing and lobster industry at Stonington, a lumber operation on the

northern part of the island, and most importantly, a stone quarry that produced some of the best granite used for buildings. In my world, I also wanted to make this a destination for the wealthy Victorian crowd, who would have their "cottages" for summer vacations and places to enjoy the mountain vistas.

The first issue to deal with concerned the operation of the ship traffic. Where could I place a harbor on the mainland and on the island without a major rebuild of the current yard areas? The second and equally difficult problem dealt with physically moving the ships from one place to another. The O scale ship models were so large and heavy that they couldn't be moved by simply picking them up and carrying them. The ships would have to move on rollers to be more than a static display at a dock.

The two yards that would accommodate the docks presented a reach-in issue if the harbor facilities were simply placed in front of the stations. To keep the depth of the benchwork to less than



2 or 3 feet at the maximum, the docks had to be placed well away from the yards in a place of no other rail activity. The ships also had to be located where they wouldn't obstruct operators loading and unloading the car float.

The Deer Island dock presented an easier solution in the form of the long area to the left of the yard and station at Stonington. However, the aisleway where the ships would dock would have to be widened to 4 or more feet to give room for the ships to be turned when leaving the dock.

On the mainland, at a place I called Camden Junction, the rail and docking

facility created a bigger challenge. This area was at a higher elevation than Stonington, so if the ships were rolled from one dock to another, they wouldn't be at the right height. Also, the yards were more spread out in the available open space, and extending the benchwork would present another reach-in problem.

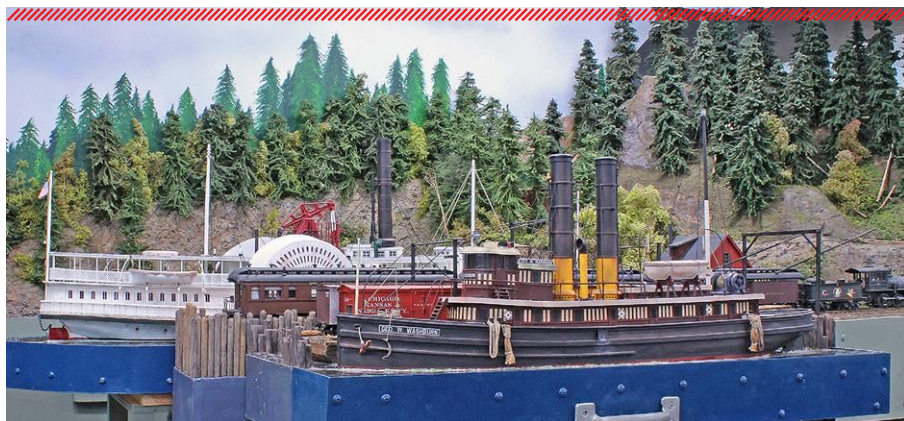
By removing the lift-out bridge by the door leading into the train room and some of the layout next to it, I could have an area large enough. The installation of a switch at a suitable location in the yard with a siding leading downgrade to the docking area would do the trick. Another huge plus in this design was the elimi-

4 At high tide, the docks at Camden Junction are busy with passengers for the paddlewheeler *Mt. Desert Isle* while a train crew unloads the car float that just arrived from Deer Island. The ships are mounted on wheeled carts that can be detached from the benchwork and moved to the other docks.

nation of the duckunder, which is the bane of us older modelers.

MELDING THE OLD AND NEW

Stonington Harbor was along one wall in the room and Camden Junction



The rock outcroppings at upper right are plaster castings from the original layout. The rocks above the locomotive and the cliff behind the ships were made with Activa. Both give good results, but one method is easier.

Activa vs. plaster

WHEN I WAS INTRODUCED TO the hobby in 1950, I used screen wire and plaster for my landforms. One of the biggest advantages to this method is that it provides a solid shell that's fairly thin. On the downside, it's messy, almost impossible to keep out of the trackwork, and makes a dreadful mess when it is time to dismantle the layout.

The new layout didn't require any huge mountains that I would have to stand under to do maintenance. I discovered the benefits of shredded paper mixed with diluted white glue and Activa Fast Mache (activaproducts.com). It's lightweight, easy to clean up, workable for hours, and easy enough for children and grandchildren to help. It also doesn't get all over your hands and into the trackwork. This product makes rock outcroppings as good or better than plaster molds without all the plaster mess. (If you still want to cast your rockwork in molds, Activa also has a product for that purpose.)

Apply Activa from your mixing bowl and work it into place with your fingers to smooth it out or to make rock outcroppings. After it dries, a few days later, paint it with a brown earth color paint. Spray-paint any nooks and crannies missed and then repaint with your earth tone paint so everything matches. To complete the scene, use Liquitex paints to color the rocks and add any landscaping items to simulate plants and grasses. Plaster has its place, but there are alternatives. — *Andrew Dodge*

was along the opposite. Neither required significant alterations. The major rebuilding effort focused on what to do with the center peninsula that would come to represent part of Deer Island.

The two stations on the old Midland layout were at different elevations and connected to each other with turnback loops to simulate the Colorado Midland's trackage on the western side of Hagerman Pass. In order to widen the aisles to make room for the ships, both stations had to be moved in toward each other, which would require elimination of the turnback loops. The radius would be too sharp in the new configuration.

The old station at Thomasville, opposite of Stonington, would have to be moved so that the old aisleway of 3 feet or less could be expanded to 4½ feet opposite where the new docks would be located at Stonington. This was a relatively simple job. The entire layout was constructed on a series of 2 x 3-foot wooden box frames with cross pieces every 16 inches. The roadbed was mounted on risers with a ledger board that extended out past the box frame. By placing 1 x 6s vertically between the top of the cross pieces of the box frame and under the subroadbed, all that was required was to unscrew the risers from the basic frame-

work and slide the entire area over. After reattaching the risers to the frame, all that was left was to cut off the unwanted track and realign the existing track with the one coming from Stonington. The new station would become South Deer Isle, which would be located at the transitional area between the north and southern parts of Deer Island.

On the other side of the peninsula was the old, important station and engine servicing facilities on the Midland at Seller, which was across the aisleway from Camden Junction. All of the same issues had to be confronted with the same solutions. Fortunately, a set of



5 One cannot model Maine's waterfront without a reference to the state's famous lobsters. The lobster boat is a plank-on-plank 1:48 scale model of an English cutter modified for lobstering. In the background, a mixed train is on its way to Settlement Quarry on the wye from South Deer Isle.

risers and ledger boards had been installed at a level at almost the same height as those in Thomasville. After cutting off the passing track closest to the aisleway and the track leading up to Hell Gate and Hagerman Pass, all that was required was to unscrew the risers and lower the roadbed down to the new position. The new location would become the site called Settlement Quarry and serve as the loading area for the island's much sought-after granite.

The rail line going west up the east side of Hagerman Pass, which was located in the smaller, front layout room, would remain basically the same. The east portal at Busk of the Busk-Ivanhoe Tunnel would now be called Back of the Moon, with a soon-to-be-installed

tourist facility to serve the outdoors-type and those going boating on the imagined lake in the aisleway.

At the top of the pass at Ivanhoe, the new station became Bald Mountain. I kept all the old Midland facilities there, with the addition of an outfitters store and a number of Victorian cottages up in the mountains.

FITTING IT INTO THE REAL WORLD

Even a freelanced railroad should have a historical basis or connection to reality. This is where research, problem solving, and creativity come into play. After reconfiguring the peninsula, I had to confront several issues. One was the track going west up to what had been Hagerman Pass to Ivanhoe station. This section of the layout is almost entirely located in a smaller, adjacent room. When a westbound train was ready to depart Ivanhoe, it passed through a prototype snowshed that disguised a tunnel through the basement wall. The track continued through the wall and led down to what had been Seller.

The history of the Portland Gale of 1898 provided the simple solution.

6 A passenger train arrives at Stonington Station while the railroad's lone 0-6-0 switcher moves reefer cars destined to be loaded with freshly caught fish and lobsters. Andrew's locomotives are custom-decorated, scratchbuilt brass models.

Heavy rains caused a landslide and a partial tunnel collapse, thus closing the tunnel. This also provided work train traffic involved in the rebuilding effort.

The Portland Gale also provided the answer as to the problem of the track coming to an end at South Deer Isle station. With the removal of the turnback loops, the track would no longer continue to the next station and needed to come to a logical termination.

Since the northern part of Deer Island is almost totally separated from the south part, the Central Maine built two trestles across the narrows to go to the lumber operation on the northern part of the island and another to a tourist destination. A tidal surge swept away most of the trestle bents, and now the maintenance crew is starting the rebuilding process.



The last two track termination issues were dealt with in a fairly straightforward manner. The Settlement Quarry branch served the granite quarry and a few vacationers, so a simple end of track was perfectly plausible. The last problem was dealing with the remains of the lift-out bridge on the Basalt/Stonington yards. With the bridge gone and the yard's last turnout quite near the end, the simplest resolution was to curve and extend the track into the corner of the room by the train room door. Now the crews would have sufficient track to hold an engine and a couple of cars for switching purposes.

SCENERY ADJUSTMENTS

Redoing the backdrop was the next step after completing all the track and electrical work. Going from the Rocky Mountains to the coast of Maine might seem like a hurdle too high, but actually, it was relatively easy. The sky could remain as it was, which left only the landforms and vegetation to redo. Because the Colorado mountains on the backdrop were at a greater distance than the hills and trees in Maine, the Rockies



Andrew mounted ½" pillow blocks to secure the ships to the layout. The blocks on the left are for the *Mt. Desert Isle* and the center and right blocks secure the car float.

Docking the ships

THE MAJOR DRIVING FACTOR in moving from the Rockies to Maine was my love of ships and the desire to include them in my layout and rail operations. I loved the idea of incorporating railroads and ships together, but not to have just a static dock. I wanted my ships to "sail" from place to place. Building dollies to roll them across the floor was easy enough, but how could they be docked so that rail cars could be loaded and unloaded?

My Colorado Midland layout had a hinged lift-out bridge across the entrance to the train room. This bridge had a secure set of hinges on one end and a set of four pillow blocks with a sliding bar to lock the opposite end in place. Two pillow blocks were used on the lift-out section to maintain that alignment and another two under the layout.

I applied the same solution for my ships. The side-wheeler needed one set of pillow blocks, since it was only necessary to hold it in a general position. Two blocks were mounted under the dolly and two more were used in each of the two docking areas.

The tug and car float dolly required the same setup, but with the important addition of another set mounted at a right angle at the end of the dolly where the rail apron would be raised and lowered. One word of advice, build the pillow-block system first and then lay the track and apron to match the docked ship. — *Andrew Dodge*

could be simply painted over with nearer hills, trees, and rock outcroppings.

Preparing the backdrop for the trees required only painting over the Rockies with a flat black paint so no white spots would show through, then painting a series of brown vertical lines with Liquitex Burnt Sienna to represent tree trunks. Once dry, Liquitex Viridian Hue Permanent and Cadmium Yellow Medium were used to paint the pine trees using a fan brush. The solid darker color trees were painted farther back, and the yel-

low was used to lighten the branches of the ones in the foreground.

Ever since 1962, I've used real dirt for the ground cover in most of my modeling efforts. Before applying the sifted, dry dirt, the base structure — be it plaster or foam board covered with paper towels — has to be painted dark brown to match the color of the dirt. With no white showing, a simple application of a diluted white glue sprinkled with dirt would be next. After that, the myriad of commercial ground covers would be



7 A 19th century Maine scene wouldn't be complete without a shingle-style Victorian "cottage." Highbrook is based on a home in Bar Harbor, Maine. It's now a resort hotel after being sold by the original owners because the Central moved into their front yard.

used to finish the scene, with the trees coming last.

Placement of buildings also proved easy, since this is a freelanced line. A number of stations were moved around, with the bigger structures placed in prominent locations and less important ones allotted to smaller buildings.

Several structures on my old Denver, South Park & Pacific found a place on

the new layout. Como Station became an outfitters store opposite the station at Bald Mountain, and the shingled roof on the station at Webster became the roof of the Hermitage Canning Co. in Stonington. As for Stonington, a few stores from Breckenridge filled the space between the track and the backdrop, with photos of the real Stonington and other Victorian homes attached to the backdrop.



Most of the photos were reduced in size and resolution to simulate distance, then printed on standard paper.

CAMDEN JCT., NOT BELFAST

The final question was, what area should the old Arkansas Junction scene represent? The obvious place would seem to be Belfast, with its Maine Central station and large dock. But after a study of



19th century photos of Belfast, two problems cropped up. One was all the buildings leading away from the station area. The layout incorporated a wye, and the staging track leads under the modeled area, with access needed for maintenance. Placing structures on top of my access area was out of the question. The second problem was the lack of any significant hills or mountains in the area, which created an issue with repainting the backdrop.

Looking elsewhere for a town on the mainland, Camden seemed to be a good alternative. It was nearby and had a rather prominent hill just inland from the harbor. However, the harbor inlet was quite narrow and wouldn't be suitable for docking large ships and a car float.

Creating a freelanced port area just north of Camden solved this problem. The newly created terminal, Camden Junction, had landforms in the distance that covered the old backdrop, no town had to be replicated on top of my access areas, and the harbor would be suitable for the ships and barges. All that was needed was a reason the ships wouldn't use Belfast. Since leases would be required by the town or state, a canceled lease would serve as the justification.

After doing a little new trackwork, repainting a minimal amount of backdrop, and repurposing a lot of structures, the basic conversion process was completed in eight months. Some additional buildings are being added, including a passenger facility at Back of the Moon. An operating schedule and sailing time system is still in the future, but not too far off.

8 At the Stonington enginehouse, the crew of No. 37 discusses the day's work. To reduce the amount of relettering he would have to do, Andrew selected a name for his freelanced railroad, Central Maine, with the same initials already on his Colorado Midland rolling stock. Only the heralds needed to be replaced.

Converting the Colorado Midland to the Central Maine was a lot of fun and stimulated my creative processes. The Midland will be greatly missed, but it is nice to just sit in the train room and enjoy the wonders of coastal Maine. **GMR**

MEET ANDREW DODGE

ANDREW HAS BEEN a model railroader almost all his life, building his first layout when he was 10. This is his 12th layout. He has modeled in a variety of scales including N, HO, HO_{N3}, On3, Proto:48, and 1.5" live steam, ranging in themes from Carolina logging lines, Deutsche Reichsbahn, Colorado narrow and standard gauge, and now Maine.

He also enjoys being a grandparent, the solitude of cutting his pastures, and doing stained glass work.



LITTLE RIVER IN N SCALE

Want to know where the inspiration for this small logging railroad came from? Take a hike

By **Chris Broughton** • Photos by the author



LUMBER CO.



1 Shay No. 5 couples onto loaded log cars at the Elkmont log camp on Chris Broughton's Little River Lumber Co. The portable N scale layout is based on the Gum Stump & Snowshoe track plan from *Model Railroader's* April 1966 issue.



MY WIFE AND I enjoy hiking in Great Smoky Mountain National Park in Tennessee. The mountains are rich in history and natural beauty. On one of our hikes, I kept thinking the trail felt like a railroad right-of-way. It was an unusually wide trail, and the grade was gentle and consistent. My curiosity was primed.

During a stop at the Sugarlands Visitor Center at the park's Gatlinburg, Tenn., entrance, my suspicion was confirmed. I walked out with some books and brochures on the history of the Little River Lumber Co. and its operations in the Great Smoky Mountains.

The Little River Lumber Co. (LRLC) and its railroad were formed in 1901 and ceased operation in 1939. The town of Townsend, Tenn., borders the park and was named after the Little River Lumber Co.'s founder, W.B. Townsend. This was also the site of the LRLC's large sawmill operation, and today is home to the Little River Railroad Museum. Names of

familiar locations in the park today, like Elkmont and Tremont, were stops along the LRLC railroad for hunters, tourists, and loggers alike.

CONSTRUCTION

For years I've entertained the idea of building a logging layout, especially after Atlas offered its smooth-running Shay in N scale. Upon reading about the LRLC, I had the prototype railroad I wanted to model, and the ideas for building a small logging layout began to form. Since I already have a large home layout (see *Great Model Railroads* 2018), I wanted to keep this foray into logging small and independent of my home layout.

I decided on an adaptation of the venerable Gum Stump & Snowshoe track plan. The switchback and the right-of-way crossing over itself as it makes its ascent into the mountains seemed ideal for my rendition of the LRLC, and it would fit in a 12 x 48-inch space in N scale. I set

2 On one of Chris' hikes along the prototype's former right-of-way, he discovered some relics left behind when operations ceased in 1939, including an old automobile. He modeled the scene on his layout.

the scene in the autumn, since it's my favorite season and is especially breathtaking to see in the Smokies.

I chose to go with a cookie-cutter-style benchwork made from 1/4" plywood. The plywood allowed me to easily mount Blue Point manual turnout controls under the turnouts and helped to create a consistent grade up the switchback.

Once the Atlas Code 55 track was laid, I used scrap pieces of extruded-foam insulation board to fill in the gaps between levels and create the basic scenic forms. Woodland Scenics plaster cloth was used to cover the mixture of wood and foam and help the contours flow into each other.



THE LAYOUT AT A GLANCE

NAME: Little River Lumber Co.

SCALE: N (1:160)

SIZE: 1 x 4 feet

PROTOTYPE: Little River Lumber Co. RR

LOCALE: Smoky Mountains of East Tennessee

ERA: 1901-1939

STYLE: shelf

MAINLINE RUN: 80"

MINIMUM RADIUS: 12"

MINIMUM TURNOUT: No. 5

MAXIMUM GRADE: 6%

BENCHWORK: open grid, cookie cutter

HEIGHT: 22" (designed to sit on a table)

ROADBED: none

TRACK: Atlas code 55

SCENERY: extruded-foam insulation board

BACKDROP: commercial photo backdrop

CONTROL: direct-current cab control with Pulse Width Modulation throttle

3 The tabletop layout is self-contained, including backdrop, valance, lighting, fascia, and power for a DC throttle. It measures only 12" deep and 48" long, making it easy to take to shows and to store.

Little River Lumber Co.

N scale (1:160)

Layout size: 1 x 4 feet

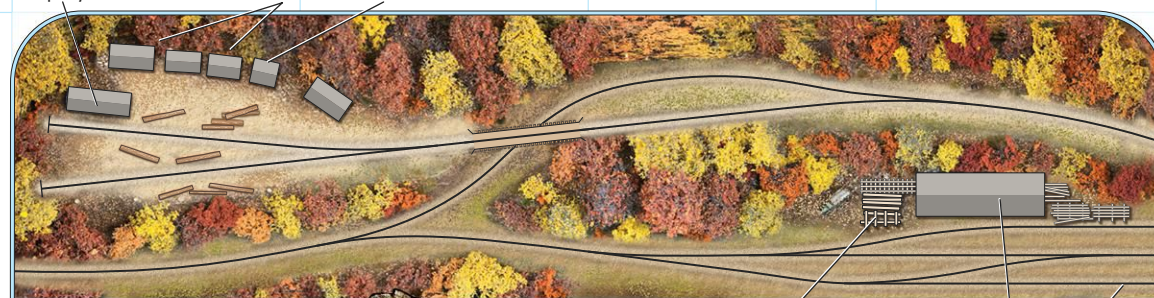
Scale of plan: 1½" = 1'-0", 12" grid

Numbered arrows indicate photo locations

Illustration by Kellie Jaeger

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

Company store Elkmont Bunkhouses Tool shed



1

4

5

Log unloading ramp

Townsend

Sawmill

Interchange track

2

3



To keep the wiring as basic as possible, I planned for this to be a single-locomotive operation powered by a handheld Pulse Width Modulation (PWM) direct-current throttle.

SCENERY AND STRUCTURES

I painted the track Dark Camo Brown from a spray can. The scenery base was painted with dark brown latex paint.

MEET CHRIS BROUGHTON

CHRIS LIVES WITH his wife, Carol, in Louisville, Ky., where he works as a software developer. He's a member of the National Model Railroad Association's Mid-Central Region and a Master Model Railroader. He's also a member of the Kentuckiana Society of N-Scalers (KSONS) FreeMo-N club. His other interests include hiking, physical fitness, making jewelry and small boxes from exotic woods, and axe throwing.



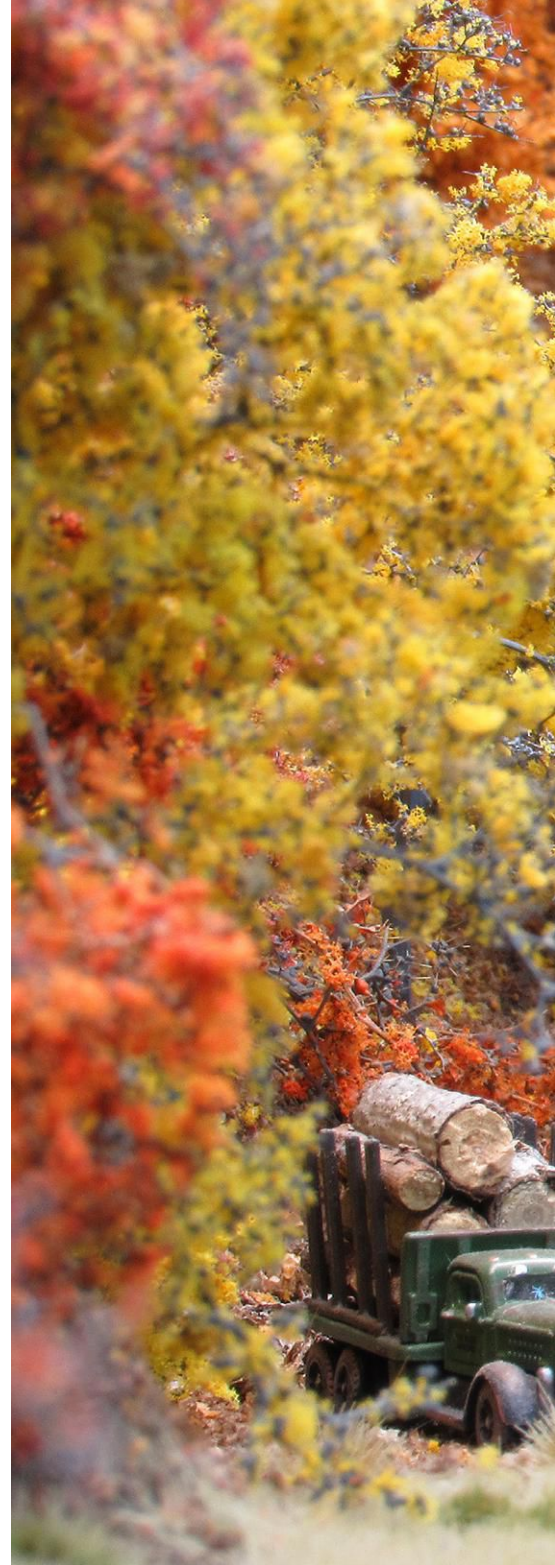
4 A Shay backs its load of freshly-cut timber through the switchback on its way to the Townsend sawmill. Chris cut the lumber from real twigs. The locomotive is an Atlas model.

Ground cover consists of static grass along the right-of-way and around the sawmill and Scenic Express Leaf Litter in the wooded areas.

My trees are all hand-made from Scenic Express SuperTree armatures flocked with various autumn-colored ground foams. The backdrop is one offered by Tracksidescenery.com. I'm a big fan of his backdrops and use them on my larger layout, as well.

The logging camp and sawmill are all JV Models kits. The logs and firewood found around the camp are made from sticks gathered from my backyard.

I had to get creative with the sawmill structure because, as the kit was designed (and when I say "kit," I mean a pile of sticks and a set of plans), it was too wide for the space available on the layout. So I scanned the plans into my computer and did a bit of photo editing to make the sawmill narrow enough to fit the space, then built it according to the edited plans.



The steam-powered saw inside the structure is an HO scale model of a small sawmill, making it ideal for a larger sawmill in N. I decided to make the front face of the roof removable to allow a view of the interior details.

SMALL BUT FULFILLING

Looking back, I think I missed an opportunity by not sticking with the



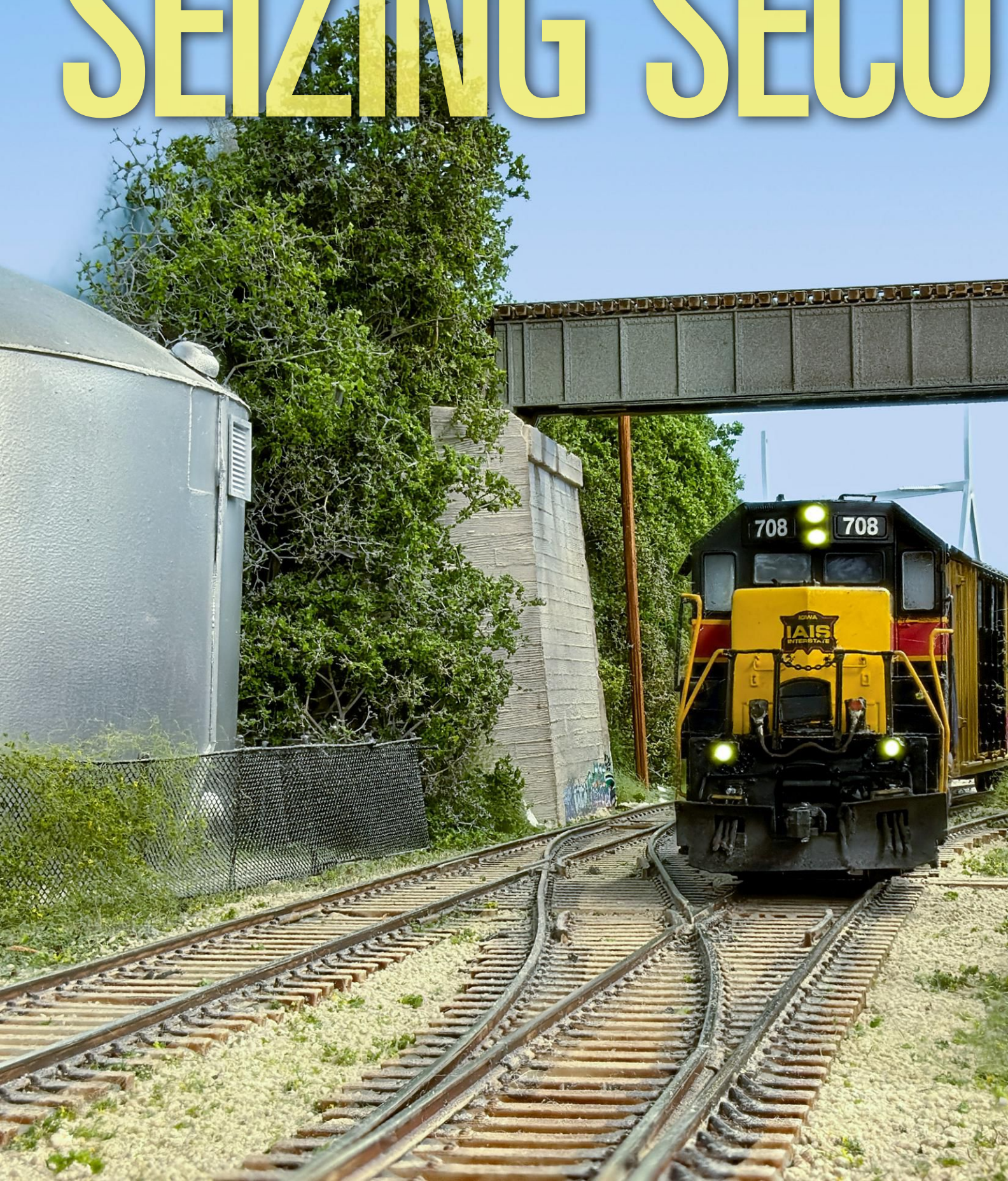
original Gum Stump & Snowshoe track plan (sans runaround). By eliminating the runaround track by the sawmill, two locomotives would be required to operate the layout, which would have added more operational interest. It's still fun to operate as-is, but I wish I had given this more consideration at the time.

I enjoyed building this little layout, and I think it's a great example of what's

possible in a very small space. Not everyone has the room, time, or budget for a "basement empire," and a layout that size isn't everyone's cup of tea. Only a minimal amount of space is needed to create a layout that is attainable, detailed, and fun to operate. The LRLC layout allowed me to model something outside my usual area of interest and leveraged my love of the Smokies as inspiration. **GMR**

5 The Shay shifts empty log bunks at the Townsend sawmill while the logs just unloaded are fed one by one into the mill. Though the craftsman kit was too wide for the space as designed, Chris shrank the building diagram to make it fit.

SEIZING SECO



ND CHANCES

From the aftermath of disaster rises the
HO Iowa Interstate Hills Industrial Spur

By James McNab ■ Photos by the author



1 Iowa Interstate No. 708 leads Train ICSW under the IAIS mainline on James McNab's HO scale Hills Industrial Spur, known as "The Hills Line." The layout trades mainline running for short-line switching.



THE HILLS LINE, my HO scale version of the Iowa Interstate's Hills Industrial Spur, represents a second chance in model railroading. My first opportunity was modeling the IAIS Grimes Line, featured in *Great Model Railroads 2015*. And while I planned to detail, operate, and enjoy the Grimes Line for the foreseeable future, a collapsed sewer line led to the untimely destruction of the first model railroad in our basement.

When the dust had settled, I took time to reflect on what I enjoyed about that first layout as well as what I wanted to improve upon. Replicating the day-to-day practices, policies, and procedures that prototype railroaders handle is key to my approach to scale modeling. I wanted to ensure that whatever I selected would allow me to meet my goals.

Fortunately, I didn't have to look far to find my next layout concept, as the Iowa Interstate RR offers numerous modeling prospects despite its size. This gave me the opportunity to continue to model this fascinating regional railroad, but in a different era and locale. The Hills Line provides me with a multitude of opportunities to further develop my skills while continuing to enjoy the things that I love about this hobby.

WANDERING OFF THE MAIN

The Iowa Interstate RR is a Class II regional line extending from Blue Island, Ill., to Council Bluffs, Iowa. Since the IAIS is the only Class II operation that interchanges with every Class I railroad in the country, its main line hosts numerous road freights, including manifest, unit, and intermodal traffic.

While mainline operations have an appeal, it's the IAIS branch lines that fascinate me the most. Focusing on the first or last mile of a freight car's journey offers significant modeling and operational opportunities above and beyond what's traditionally found on a layout. These include connecting air hoses, pumping up air lines, testing brakes, locking and unlocking switch stands and gates, and running at scale speeds.

Throughout the history of the IAIS, various spurs, short lines, and industrial tracks have ventured from the main to serve a variety of customers. For five years, this included the Hills Industrial Spur, a portion of the Cedar Rapids & Iowa City Ry. (CRANDIC) in eastern Iowa. This former Chicago, Rock Island & Pacific branch connects the mainline town of Iowa City, Iowa, with the small hamlet of Hills, 8 miles away. Starting in

2 This view from the basement stairs shows most of the layout. City Carton Recycling is on the left. Following the unplanned destruction of his previous layout, James sought to create a warmer and more welcoming environment for family and operators alike.

2012, the Iowa Interstate leased this portion of the line from CRANDIC to provide more efficient local service to customers along the right-of-way.

The spur, and the town of Hills, primarily exist to serve the massive Eldon C. Stutsman agriculture complex at the south end of the line. Despite being the sole online customer in town, it offers a variety of car types, loads, and placements. Those requirements offer a greater experience for operators beyond the grand pull and shove.

The prototype Hills Line also snakes through southern Iowa City to serve City Carton Recycling. Though not as complex of an operation as Stutsman, City Carton is surrounded by numerous grade crossings and tight clearances as a result of the line's heritage as an electric interurban. Crews must keep a sharp eye open when navigating the streets.

3 The Iowa River is a major landmark along The Hills Line. James uses Golden Gloss Gel to model the murky and meandering Midwestern waters. The lattice-truss bridge was kitbashed from a Central Valley kit.



OPEN AND WELCOMING

After my experiences with the destruction of the IAIS Grimes Line, I knew I wanted to ensure that any future home renovations or repairs wouldn't require complete removal of the layout. Also, our basement space needs to serve multiple purposes beyond model railroading, including serving as a second living area for our growing family. As part of our restoration, we took the time to partially finish the layout room so that it was warm, clean, and inviting.

The biggest factor in ensuring success the second time around was keeping the middle of the room open. The Hills Line wraps around three of the four walls to

allow for easy movement into and through the space. Even with this smaller footprint, I'm able to have more than 50 feet of running track, more than adequate to replicate the 8-mile length of the prototype.

Even with such a simple setup, there are some obstacles that have to be addressed in our basement. The railroad crosses in front of both the electrical panel and the entrance to our mechanical and laundry space. I designed a series of lift-out sections (see "Filling Gaps" on the adjacent page) to span the openings. These guarantee that access to these critical areas doesn't run afoul of either building codes or marital bliss.

SCANDINAVIAN SUPPORT

That same desire to create an inviting space extended to all aspects of construction. The Hills Line was built atop a series of IKEA Ivar shelf units to improve the overall look of the railroad. The Ivar setup offers adjustable shelves in a variety of widths and depths, allowing me to create a customized solution for the layout. I was able to incorporate the electronic and Digital Command Control (DCC) system for the railroad into the shelves, as well as literature organizers to hold my ever-growing collection of hobby magazines.

T-girder benchwork was assembled atop the shelves, connecting the individ-



James built custom lift-out sections to span the segments of The Hills Line. Power is passed using insulated DC plugs.

Filling gaps

MODEL RAILROADING IS FILLED with compromise after compromise, and The Hills Line is no exception. The arrangement of our basement and the fact that the space has to serve other household functions determined the final arrangement of the layout footprint. In essence, the railroad is made up of three independent sections wrapping around the walls, with breaks in the plan to provide access to the electrical panel as well as the mechanical and laundry room.

To fill these gaps in my plan, I constructed a set of simple but sturdy lift-out segments. Each was built from cabinet-grade pine stained and sealed to match the Ivar shelving on the layout. Gapmasters from American Tie & Timber ensure a consistent alignment of the rails as each unit is placed and removed. Insulated plugs carry power to the sections.

The liftouts are stored on the shelves under the layout unless the railroad is operating. That way, access to our laundry and mechanical space is maintained, ensuring The Hills Line can coexist with the rest of my life's obligations. — *James McNab*

ual units into one complete and sturdy arrangement. I then ran the bus wires from one end of the layout to the other to take advantage of the easy access before covering the top of the railroad.

The subroadbed is 2" extruded foam insulation board. The sheets are structurally stable, inert, and provide a solid and complete base to begin laying track. However, I took the time to paint every inch of the subroadbed with the same shade of olive green that I would use on the fascia before a single piece of track was attached. That safeguards against bits of pink appearing under the scenery.

Lighting comes from linkable light-emitting diode fixtures that follow the

perimeter of the layout. While I've always appreciated the museum-quality shadowbox look that comes with adding a lighting valance, they turn the rest of the space into a dark cave. This time around I decided not to include a valance, so the entire room is bathed in the same warm and welcoming light that covers the railroad. As an advantage, layout photography became considerably easier, since there wasn't such a high contrast between the two areas.

ADVENTURES IN GANDY DANCING

With the foundation in place, I could begin transforming this simple shelf into a representation of the prototype line.

I started by prepping and prewiring the turnouts on my workbench, as detailed in my article "5 tips for trouble-free turnouts" in the August 2020 *Model Railroader*. All track on The Hills Line is Micro Engineering code 70, which best matches the 90-pound rail used on the prototype. Track was laid directly on the foam board to better represent the less-than-mainline look appropriate for the industrial spur.

Advances in technology allowed me to provide significant improvements to the electrical infrastructure of the railroad. Every turnout features a Tam Valley Mono Juicer to provide the appropriate frog polarity as locomotives navigate

4 The engineer slowly eases an empty boxcar to the loading door at City Carton Recycling. Scrap paper bundles will be loaded for shipment to western paper mills. The industry is one of only two rail-served businesses on the layout.



5 There's no doubt as to our whereabouts as IAIS 715 rolls by the massive Eldon C. Stutsman agricultural products complex. Car spots are clearly labeled to assist crews with spotting.

the switch. Each individual piece of rail was directly connected to the power bus, ensuring further electrical consistency.

However, the biggest upgrade came with the release of the ProtoThrottle from Iowa Scaled Engineering. More than any purchase I've made, this device places me into the cab of an IAIS loco-

motive. The move to the ProtoThrottle also drove me to upgrade all of my sound decoders to ESU LokSound 5s and to replace my existing DCC system with an NCE Power Cab setup. Both are optimized to work with the ProtoThrottle due to its direct cab bus connection.

IMPROVING THE LOOK

As construction moved to scenery phase on The Hills Line, I made a concerted effort to integrate developments in scenic materials made over the years. I upgraded my static grass applicator to a more powerful version, which greatly improved the overall look of the layout. In addition, I also began using grass mats and other scaled-sized tufts from manufacturers such as Heki and Martin Welberg (martinwelberg.nl) to better highlight signature scenes.

Thanks to the help of my friend Tom Johnson [see page 16 — *Ed.*], I was also able to improve the appearance of the numerous trees found along the right of way. Tom shared his methods for using Scenic Express ScaleLeaf material to represent individual leaves, which gives a far superior look compared to my old methods of using closed-cell ground foam.

The finished effect is especially stunning when viewed in close-up photographs of the layout.

Meanwhile, my friend and fellow Iowa Interstate modeler Scott Thornton introduced me to Golden Gloss Gel for modeling water. While I'd previously used gloss medium to create rivers and creeks, the thicker mixture present in the Golden Gel prevents bubbles from forming as the gloss dries. The result is an excellent representation of the murky and meandering Midwest streams found throughout the prototype.

I also worked on improving the overall appearance of the layout in the space itself. The fascia features molded trim pieces along the bottom and sides, helping give the benchwork more of a look of finished furniture. Where model structures bisect the boundaries of the layout, I extended the fascia up and along the outline of the building (see "End of the World" at right) both to define the edge as well as suggest that there's more present than I have space for. The Ivar shelves are painted and stained.

PLACEMAKERS

There's no kit offered from any hobby manufacturer that matches any of the structures found on the prototype Hills Line. Fortunately, there are a lot of products that when combined together come close to replicating the buildings located along the right-of-way.

Structures fall into one of three categories on The Hills Line. For most of the non-rail-served industries, especially along the Maiden Lane portion of the railroad, I was able to kitbash from commercially available components. It felt as if the builders of the prototype area thumbed through a Walther's or Rix Products catalogue when laying out the commercial district. While a fair number of these kits were built as designed, some changes were necessary. Most of these involved converting the full-sized arrangement into building flats to better fit my available space.

Other structures take advantage of improvements in technology to better duplicate what's actually present on the prototype. I was able to incorporate images of prototype businesses and store fronts taken from Google Street View into acceptable scratchbuilt versions.



Where space limitations prevented an accurate representation of a prototype structure, James extended the fascia to avoid having to severely compress or eliminate the building altogether.

End of the world

THE HILLS LINE IS A SIGNIFICANTLY more structure-dense layout that I've ever previously attempted. A majority of the buildings aren't rail served and exist only to help set the era and locale of the prototype. Including these placemaking elements is essential to telling the story of my railroad.

A problem arises when the prototype structures that line the right of way have a footprint that far exceeds the space I have on the layout. I could condense them to fit the area. However, in practice, selective compression often crosses the line toward cartoonish replication, a practice I've been guilty of in the past.

The solution was to construct only the relevant portions of the building related to the railroad while avoiding compressing the overall footprint. Where the world ended, I extended the fascia up and along the outline of the structure, implying that it extended well beyond the benchwork. — *James McNab*

Some judicious use of Adobe Photoshop to clean up the pictures eliminated any anachronistic or unwanted elements.

The primary rail-served structures are a combination of both methods. After constructing a sturdy core from styrene sheet and PVC trim boards, I used real-world images, either taken from geomapping software or from my own scouting efforts, as the base for a photo wallpaper building. To that I added detail parts that provide depth and dimension to each assembly. In many cases, the detail parts are also scratchbuilt following the same methods described above.

CHESS PIECES

Despite that overall effort to improve the railroad's appearance, my car fleet

remains woefully inadequate. A respectable portion of my rolling stock from the IAIS Grimes Line was able to be reused on The Hills Line. But there were still several car types that I needed to support the new locale and customer base, including the ubiquitous NSC potash hoppers in their distinctive salmon hue. While I feel I've done a reasonable job of locating appropriate versions of those prototypes, a majority of them remain in their unweathered factory finish.

I have, however, found the time to upgrade the mechanical aspects of my cars. All feature Kadee no. 58 scale couplers. In addition, I've standardized on Arrowhead Models code 88 wheelsets, improving both the look and functionality of my rolling stock.



6 Empty tank cars await pickup at the Stutsman tank farm complex, located at the southern end of the industrial spur. Shipments of fertilizer solution and other agricultural products are transloaded to trucks for final delivery.

While I obviously have miles to go to get my cars' appearance on par to where I want them to be, it's not a major priority for me and my goals in model railroading. Ultimately, I compare locomotives and rolling stock to chess pieces. I can play chess using the most intricately carved figures available or I can play with rocks I found in my backyard. Either way, I'm playing the game.

The same mindset applies to operating a model railroad. Ultimately my goal is to replicate the experience of working the prototype Hills Line. As part of that goal, I see the locomotives and rolling stock as working components instead of static showpieces. I can always go back to weather and detail my cars at a later time, but I don't want to prevent operations from occurring now simply because a freight car doesn't have the appropriate level of grime and dirt.

GAME ON

To properly play the game of operations I need some specific tools and components to help fully immerse both me and my guests into the experience. Car forwarding forms perfectly match the RMI/TMS paperwork that the prototype Iowa Interstate uses. In addition, I provide my crew members with abridged copies of employee timetables, special instructions, and customer diagrams to help them perform the same tasks that



their real-world counterparts execute on a regular basis.

All turnouts, derails, and gates on The Hills Line are manually operated to help impart what is actually needed to complete a run. Uncoupling is performed with modified bamboo skewers, requiring an up-close-and-personal approach. Crews are asked to adhere to all rules, restrictions, and recommendations as outlined in the operating paperwork to further improve the experience.

7 Engine No. 712 rounds the curve past the MidAmerican Energy substation in southern Iowa City. The prototype Hills Line started its existence as an electric interurban.

Top speed on all my locomotives is a scale 8 mph. This ensures that we prevent turning our operating sessions into something resembling stock car racing. I also programmed each of my decoders with high momentum settings so that

8 Even the most remote grade crossing still requires protection for passing motorists. Locomotives on the line are limited to a top speed of 8 scale mph to enforce the railroad's local branch line feel.



the real-world forces at play on the prototype are present on the model version. The built-in independent brake on the ProtoThrottle allows for better train handling and performing those silky-smooth starts and stops.

WORKING THE LINE

A run on The Hills Line begins at Maiden Lane, in the middle of the modeled portion of the railroad. This was historically the interchange point

between the CRANDIC and the IAIS until increasing train lengths forced the move farther west and out of town. Fortunately, my short consists can handle the tight quarters at Maiden Lane without issue.

Our train will already have been blocked in the unmodeled Iowa City yard, represented on the layout by the Hill Track staging area. Nonetheless, crews will need to determine in which order they should switch the industries. There's no one best way to perform the work, since it's dependent on the make-up of the day's delivery as well as any cars currently spotted at either Stutsman or City Carton.

The long house track at Hills is routinely used for runarounds and reordering cars for spotting at the correct doors and spouts at the agricultural complex. Tank cars need to be placed directly on the unloading platform at the tank farm, and covered hoppers should be spotted over the grate at the elevator. Just as on the prototype, all car spots are labeled and numbered to support the crews in their efforts.

Switching City Carton is a much more straightforward process. However, the spur itself is located on a sharp curve, requiring an equally sharp coordination between engineer and conductor to avoid overrunning the end of the track. To help simplify the procedure,

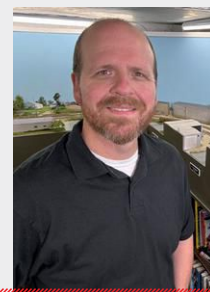
crews will routinely leave the bulk of their train at Maiden Lane and run light power through the concrete and brick canyon of Iowa City.

OPPORTUNITIES ABOUND

To say that I'm satisfied with my selection of the Iowa Interstate RR as my modeled prototype is an absolute understatement. On two separate occasions I've been able to replicate a portion of this amazing operation in our basement in a unique and interesting manner. While I can't say if this will be the last railroad I'll construct, I can say that I'll do everything to ensure that each moment I have with The Hills Line is time well spent. **GMR**

MEET JAMES MCNAB

JAMES MCNAB IS an award-winning producer and video editor with more than 800 credits to his name. He served as a contributing editor to Trains.com Video, creating and hosting "The Hills Line with James McNab."



REBUILD



ING THE WESTERN PACIFIC

A move offers the opportunity to improve on an HO scale layout

By **Bob Grech** ■ Photos by Robert Waldman



1 Switcher 1409 delivers stockcars to the Wolcott Meat Co. on Bob Grech's freelanced HO scale model railroad. On this, the second version of the layout, Bob incorporated the best features of the prior version and made improvements to correct previous drawbacks.



I CONSIDERED MY PREVIOUS Western Pacific layout, which was featured in the October 2012 *Model Railroader*, to be my finest work as a modeler. That layout was built in a room addition specifically designed to fit its track plan. This let me accommodate all of the operating and scenic features I wanted. In the end, the layout gave me many years of enjoyment.

Unfortunately, the layout was dismantled in December 2019, when my spouse and I decided to relocate from Fountain Valley, Calif., to Georgetown, Texas. The thought of tearing apart years of hard work was frightening, to say the least. However, those fears soon subsided after we purchased our new home, which offered a large upstairs bonus room that my spouse was willing to let me use for a new layout.

Except for track and scenery, I was able to salvage all of my structures, bridges, fascia controls, and details. This included the harbor area in its entirety. My next challenge was transporting all of these items halfway across the country without damaging them. After careful consideration, I chose to pack and transport my collection myself using the PODS transport company. I ensured everything was tied down and secured to my satisfaction prior to shipping. Happily, only a few minor items were damaged during the move.

PLANNING THE NEW LAYOUT

Soon after arrival, I started planning my new layout. After evaluating the space, I realized I could fit a track plan with a similar footprint as my previous model railroad. However, I would need to extend the layout into an adjacent closet via a hole in the wall. This would let me closely match the mainline run I had on my previous layout and keep most of the operational concepts I had worked so hard to achieve.

As a result, my new WP features all the waypoints and industries I had on my previous layout. This meant the operating sequence and timetables could be reused, too. I could also correct previous operating flaws while expanding on those concepts that worked well.

For example, I incorporated Kadee uncoupling electromagnets instead of the permanent magnets I'd previously used in key locations. This helped eliminate unwanted uncoupling of cars that often plagued my old layout. To protect the electromagnet coils from overheating or burning out (which can happen if they're energized for two or more minutes, according to Kadee), I installed a shutoff timer relay to each unit. This modification was described by Larry "The DCC Guy" Puckett on his YouTube channel. The timers are energized via a momentary push button. Each timer is

2 Upon entering the train room, guests to Bob's layout are greeted with this view of the layout. In the foreground are Horseshoe Meadows and its dock complex. The waterfront scene was salvaged from the previous layout in its entirety.

set to 20 seconds, providing sufficient time to perform the necessary uncoupling maneuvers, while ensuring the coils can't be energized too long.

LESSONS LEARNED

One of the few regrets I had with my previous layout was the decision to use Liquid Nails adhesive caulk to attach my track. This made removal of the track without damage nearly impossible. This time, I used a thin layer of latex caulk. I tested this procedure with scrap pieces of flextrack to ensure it could be removed once cured and thus avoid repeating this costly mistake. I found that by soaking the caulk with a 70% alcohol and water mix, the track could be removed without damage using a thin spatula.

Another lesson I've learned is to ensure your train room is properly prepped prior to starting construction. This means your choice of flooring, lighting, benchwork, and access need to be considered. One major obstacle I faced was an attic access door inside the closet



area. It swung inward, taking up valuable layout space. To solve this problem, I recruited a friend to help me reverse the door so it now swings into the attic, not into the closet. I also removed the two partition doors separating the main train room and closet to allow unobstructed movement between both areas.

Another item was removing existing carpeting and replacing it with composite wood flooring. Besides being more appealing to my eyes, it helps cleaning spills from plaster and paint that often occur during layout construction.

The last item to install was lighting. I chose daylight light-emitting-diode

THE LAYOUT AT A GLANCE

NAME: Western Pacific
SCALE: HO (1:87.1)
SIZE: 16 x 21 feet plus 4 x 11 feet
PROTOTYPE: freelanced
LOCALE: Western United States
ERA: 1928-1938
STYLE: walk-in
MAINLINE RUN: approximately 275 feet
MINIMUM RADIUS: 28" (main), 22" (return loop)
MINIMUM TURNOUT: No. 6
MAXIMUM GRADE: 1.5%

BENCHWORK: open grid
HEIGHT: 44" to 49"
ROADBED: cork (main), 1/2" foam board (yards)
TRACK: code 83 flextrack (main), code 70 (spurs)
SCENERY: plaster cloth topped with commercial and homemade rock castings
BACKDROP: hand painted on 1/8" tempered hardboard
CONTROL: MRC Prodigy Advance² DCC



(LED) bulbs to simulate sunlight. I've always felt it important to have good lighting installed during construction. This lets you see how your scenery colors will look while you build it.

BENCHWORK, FASCIA, BACKDROP

As with my previous layout, my new model railroad is built on open-grid benchwork. I used 1" square blocking on all frame joints to ensure the grid stays rigid. Fortunately, my new layout space is climate controlled. This makes it much easier for me to control temperature fluctuations and thus minimizing expansion and contraction issues.

The subroadbed is ½" plywood. I used cork roadbed for the main line as before, but substituted ½" thick extruded-foam insulation board in place of the Homasote I'd previously used for yards. I found the foam material to be as sound-absorbing as Homasote and much cleaner to work with when cutting or shaping.

The fascia and backdrops are tempered hardboard. I covered the backdrop panels to achieve the illusion of an endless horizon. I did the same on the fascia to provide smooth contours along the front of the layout.

I installed fascia-mounted control panels made of ¼" Plexiglas to control

3 A Chicago & North Western boxcar is spotted at the Perkins Produce Co. The structure was scratchbuilt based on an Earl Smallshaw project featured in the December 1974 *Model Railroader*.

turnouts, turntables, semaphores, interior lighting, and sound modules. Turnouts are lined using single-pole double-throw (SPDT) toggles wired in series with light-emitting diodes that indicate the selected route. I use dry transfer lettering to label the panels.

The end result is a clean and professional looking fascia that allows my road



crews to easily follow their trains around the layout instead of crowding around a central panel.

TRACKWORK

I used code 83 flextrack for the main line and code 70 for industrial spurs. Having previously used Shinohara turnouts, I was saddened to hear that the company ended production. I replaced these turnouts with the newer version offered by Walthers. I was pleased to see the many improvements Walthers made to the turnouts, such as solid point rails and frog power hookups. This made wiring the frog much simpler.



Because I operate many short-wheel-base locomotives, all my frogs are wired to the auxiliary contacts on my switch motors. This ensures all my locomotives roll through them without stalling.

Turnouts are controlled by Tortoise by Circuitron switch motors. I make sure each turnout meets NMRA clearance requirements and make any necessary adjustments prior to installation. I take extra precautions around the frog, wing, and guardrails, as well as filing the point rails to avoid having any wheels split the switch. These extra steps help ensure smooth, trouble-free operation.

LAYOUT CONTROL

The layout is controlled by a Model Rectifier Corporation Prodigy Advance² Digital Command Control (DCC) system. There are four wireless walkaround throttles for use by train crews and one tethered throttle for the yardmaster. The system is powered by MRC's 10A power booster, which provides sufficient power to operate multiple sound-equipped steam locomotives without overloading.

There's a reverse loop under Horseshoe Meadows and another hidden under the Old Rose Mine. These are automated with a pair of DCC Specialties Power Shield X PSX-AR auto-reversing circuit breakers.

4 Engine No. 1584, a Baldwin 4-6-0, arrives at Cougar Flats Depot. The depot was scratchbuilt to duplicate an out-of-production REA kit. The water tower and shed are from Fine Scale Miniatures.

I used 14AWG stranded wire for the track bus and placed 20AWG track feeders every six feet. I twist my bus wires around each other to reduce inductance and terminated each bus wire with 0.1µF capacitor and 100Ω resistor connected in series to avoid DCC signal noise and/or runaway locomotives.

To make the transition between the bus and feeders, terminal strips are used throughout. All of my wires end in spade-type connectors, making the screw-terminal attachment much easier. In addition, I like to assign color codes to my wires to help in troubleshooting. For example, I use green for frog points, red for the south rail, and white for the north rail.

SCENERY

I scenically divided the layout with backdrops and mountain ridges to maximize the illusion of distance. To form the mountains, I used a 1" cardboard web covered with plaster cloth. I created the rock formations using a variety of commercial and

MORE ON THE WEB

You can watch videos of trains running on Bob Grech's layout on Bob's YouTube channel: youtu.be/9Pd7tRPp28g



5 A gondola filled with scrap iron awaits pick-up at the Chippy Hollow Co. The structure was built from a Fine Scale Miniatures kit. Wall joint compound was used to model the concrete roads in the foreground.

homemade rock molds. I color the rock castings using earth-tone acrylic paints.

I use Woodland Scenics ground foam along with actual sifted dirt as ground cover. I applied static grass with a Woodland Scenics Static King to create the tall grass and tufts.

Homebuilt pine trees made from 1/4" balsa trunks and caspia were added next. To create the pine-needle effect on the branches, I spray each tree with Aqua Net hair spray. I then dust each tree with Woodland Scenics static grass material. All the deciduous trees are modeled using Scenic Express SuperTrees.

The biggest scenic challenge I faced was convincingly disguising the entrance of the hole in the wall. Due to space limitations, only one side of the hole could be hidden with a tunnel entrance. This left the side facing the main layout visible. I concealed the opening with a highway overpass.

I use wall joint compound to model concrete streets. I add expansion joints and cracks in the streets with a scribing tool. I use acrylic unbleached titanium

white mixed with black to color the streets. I weather the streets with charcoal powder sealed with a light mist of Testor's Dullcote.

I created all of my water features using Enviro-Tex two-part epoxy. Once the resin was cured, I added ripples and other surface effects with gloss medium.

For the waterfall, I used clear silicone caulk. Then I added strands of cotton to the silicone to complete the misty effect. I finish up by sealing the cotton with clear coat.

CRAFTSMAN KITS

One of my favorite aspects in this hobby is building structures. My layout is filled with many craftsman kits and scratchbuilt structures. To honor my friend Rick for helping me with the room preparation, I dedicated a woodworking company in Horseshoe Meadows to him. I added a bit of humor to the scratchbuilt structure with a sign advertising a large array of carpentry services, from fine furniture to caskets.

I built most of the masonry buildings in downtown Horseshoe Meadows from Design Preservation Models. The remaining structures are kits from Fine Scale Miniatures, Fos Scale Models, Bar Mills, and Builders In Scale.

As my modeling skills improved, I've started transitioning my fleet of loco-

motives and rolling stock from ready-to-roll models to kit-built. A large portion of my light steam locomotives are assembled from vintage Model Die Casting (Roundhouse) kits. All have been converted to DCC, superdetailed, and lettered for my railroad.

More than half my rolling stock was built from vintage kits once offered by Ambroid, Silver Streak, Central Valley, LaBelle, and Binkley. It's not often you get to see some of these old classics running on a layout.

Whenever I attend a train show or am surfing the internet, I'm constantly on the lookout for these collector's items. You'll be surprised to find how many of these wonderful kits can still be found if you look for them.



6 Engine No. 427, a 2-8-0 Consolidation, crosses the tall timber trestle on its way into the yard. The locomotive was built from a Model Die Casting (Roundhouse) kit, custom-decorated and superdetailed. The waterfall in the background was made from clear silicone caulk and cotton batting.

BUILT FOR OPERATION

I operate the layout using a car-card-and-waybill system that was set up by my good friend and fellow hobbyist Marty Bradley. Marty wrote about his process in the article “How to set up a layout for operation,” published in the same MR issue as my previous layout. Because my new layout closely matches

my previous track plan, I can use the same timetable and operating sequences Marty set up for me with only minor modifications.

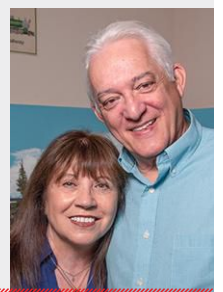
Uncoupling is handled manually with skewers by each road crew. The electromagnetic uncouplers I mentioned earlier are installed in hard-to-reach areas.

THE JOURNEY CONTINUES

Although I’m relatively new to the Georgetown area, I’ve already met numerous local model railroad enthusiasts who are willing to help operate my layout. To those who claim our hobby is fading, I offer this piece of advice. Don’t be afraid to reach out and share our hobby with new friends and neighbors you may meet. **GMR**

MEET BOB GRECH

BOB GRECH HAS BEEN a model railroader for more than 50 years. His love for trains dates back to his early childhood, when his dad bought him his first toy train back in 1963. Bob retired from Boeing, where he was employed as a mechanical/quality engineer. Bob and his wife, Marita, live in Georgetown, Texas, along with their pet beagles, Tony and Nicky.



STEAM'S LAST ON THE GREAT NORTHERN

Modeling the Great Northern and Northern Pacific
in central Minnesota in September 1956

By Richard Remiarz ■ Photos by the author



LIKE MANY OF THOSE who read this magazine, I've liked trains as long as I can remember. My only memory from my early childhood in England was standing on a bridge with my grandmother watching trains pass below. I had a train set when I lived there, but it was left behind when we moved to the

United States just before my third birthday. Eventually I received an American Flyer train, then years after that asked for and received an HO scale train set for Christmas. I built a layout based on the Kalmbach book *HO Railroad that Grows* [now out of print —Ed.]. Even then, I was scratchbuilding structures and building

craftsman kits. Eventually I became a teenager, sold my trains, and began focusing on other interests.

It could have ended there, however one of the students I shared an office with while working at the University of Minnesota was a model railroader. So, I started looking at some of the magazines

HURRAH

1 Train 528, the Willmar-to-St. Cloud local, arrives in Cold Spring, Minn. The action takes place on Richard Remiarz's HO scale Willmar Division, which models the Great Northern and Northern Pacific in 1956.



he brought into the office. Following a visit to a hobby shop and the purchase of a few kits, I was hooked again.

I was surrounded by the Great Northern and Northern Pacific when growing up. Many of our family excursions on the rural highways followed the main lines. My dad and I would go shopping

in Minneapolis every Saturday morning, and I would watch the GN switching cars nearby. It's these memories that lead me to model the Great Northern.

At the same time I got back into the hobby I met my future wife. I built a small, modular, generic GN layout in the den of our first apartment. That layout

moved with us into our first house. I finished the basement and started building my first version of the GN in Minnesota.

Then in 1988, we moved into our new home. It had a basement with the stairway in the middle, so the outside walls were open for an around-the-walls layout. Planning started in earnest.

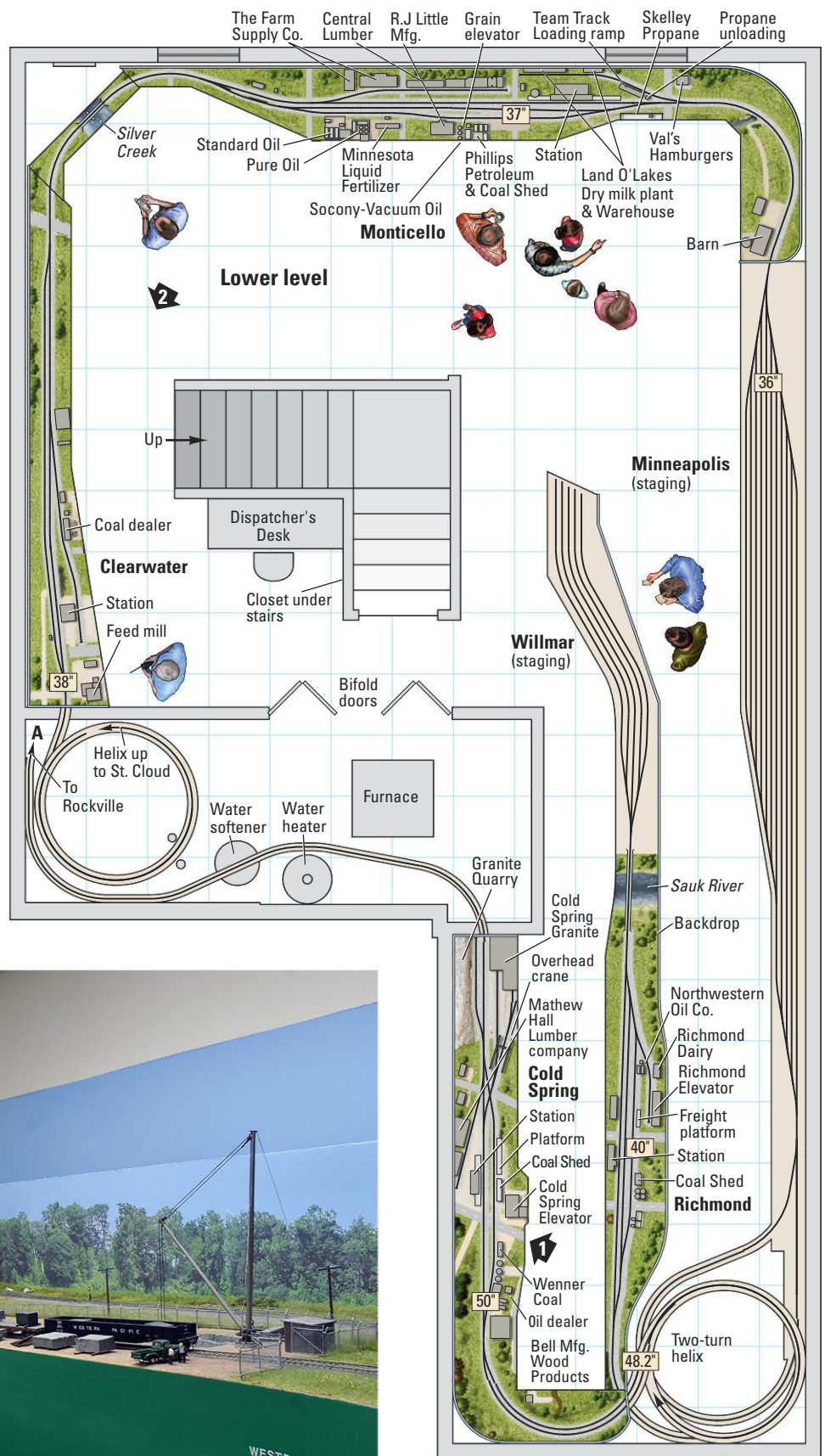
PICKING A LOCALE

The area I selected to model was the region around St. Cloud, Minn., about 60 miles northwest of the Twin Cities. Great Northern had two main lines heading west from Minneapolis. I chose to model the Osseo Line, which ran on the west side of the Mississippi River and passed through St. Cloud on its way to Fargo and Grand Forks, N.D.

In addition to this main line, there were two other main lines that passed through St. Cloud. There were branches from Sioux City, Iowa; Sioux Falls, S.D.; and Huron, S.D., that connected and led to Willmar, continuing to St. Cloud and eventually the Twin Ports of Duluth and Superior. These lines offered a direct path from eastern South Dakota, western Iowa, and southwestern Minnesota to the Twin Ports for grain traffic, bypassing the Twin Cities.

Finally, there was the joint GN-NP main line that ran along the east side of the Mississippi River. This was the original GN main line to St. Cloud and points beyond. I decided to model all three of these lines.

This made for an interesting layout concept. Instead of a main line with staging at either end and one or two freight yards on the modeled portion,



2 This aisle view shows Rockville on the upper level and Clearwater on the lower level. The Dakota Division staging yard is located behind the short backdrop with the trees. The layout is designed so viewers don't see more than one town on each level from most locations.



Great Northern Willmar Division

HO scale (1:87.1)

Size: 25'-6" x 45'-2"

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

Numbered arrows indicate photo locations

Illustration by Rick Johnson and Roen Kelly

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

THE LAYOUT AT A GLANCE

NAME: Great Northern Willmar Division

SCALE: HO (1:87.1)

SIZE: 25'-6" x 45'-2"

PROTOTYPE: Great Northern, Northern Pacific

LOCALE: St. Cloud, Minn., region

ERA: September 1956

STYLE: multi-deck walkaround

MAINLINE RUN: 550 feet

MINIMUM RADIUS: 30"

MINIMUM TURNOUT: No. 6 (main), No. 4 (spurs)

MAXIMUM GRADE: 1.75% (visible layout), 2.25% (helix)

BENCHWORK: L-girder, open grid, and dominoes

HEIGHT: 36" to 63"

ROADBED: Homasote and cork

TRACK: Micro Engineering, Shinohara, and Walthers flextrack; Atlas code 100 in staging

SCENERY: extruded-foam insulation board with some hardshell over cardboard web

BACKDROP: homemade and SceniKing photo backdrops with painted sky

CONTROL: Digitrax DCC



I had a major yard with lines heading in six directions, running trains from two major railroads. To make it even more interesting (and more difficult to design), there were two wyes in St. Cloud, one on each side of the Mississippi.

I'd always planned on modeling 1956, because the GN still ran steam and all the passenger cars on the prototype in 1956 are commercially available. Initially I planned on modeling spring. This was later changed to September so I could simulate the increased traffic of the fall grain and potato harvests.

BEGINNING CONSTRUCTION

Before I started the layout, we finished the basement with Sheetrock walls, a suspended ceiling, and commercial-grade carpeting. While this work was going on, I was designing the layout with CadRail software. I designed much of the benchwork on CadRail also.

My wife and I finished painting the basement in 1993 a week before our first daughter was born. Between having a newborn, going to graduate school part time, and traveling for work, I made little progress for the first few years.

After attending the National Model Railroad Association (NMRA) Thousand Lakes Region convention in 1997, I realized that my layout was at least as far along as many of those on the layout tours. So I volunteered to take part in tours for Northstar '99, the NMRA National Convention, which was coming in two years. That lit a fire under me.

I had a co-worker who was a model railroader and an old high school friend helping me every couple of weeks when I was in town. Then in April 1999, Joe Binish, a friend I'd met at local Twin Cities Division meets, stopped by to visit the layout. He brought a friend, Jon Bratt. By the end of the evening, they

3 Northern Pacific EMD FP7 No. 6601 leads No. 11 across the GN's St. Cloud-to-Duluth main line in East St. Cloud. In the background, GN SW1 No. 80 switches the interchange yard.

asked if they could join in. It was the start of our round-robin group, which has been meeting ever since.

I couldn't find a lot of information on multi-deck layouts when I first started. I used L-girder benchwork to frame some of the initial portions of the layout. I used dominoes to build the town of Richmond, thinking it would make the layout more portable.

I quickly realized two things. First, a layout of this size and complexity couldn't be all modular and still meet my design goals. If I had to move, much of the layout would be lost. Second, L-girders and dominoes are too thick for a multi-deck layout. Most of the layout is



cantilevered from the walls, with legs under the peninsula and in deeper parts of the yard.

I also learned quickly that the best way of building one is from the bottom up. Unfortunately, I didn't always follow my own advice. The layout was designed to be built in phases so operating sessions could begin before the layout was finished. In the first phase, the main line from St. Cloud to Minneapolis joined the Dakota Division staging yard, forming a large loop on the upper level.

Here's where I should have listened to my own advice. It was easy adding the lower level and even the staging yard under the NP staging yard. However, adding the return loop at the end of the staging yard was a big problem. Part of it had to go underneath two helixes and East St. Cloud. It seemed that every riser supporting the upper levels had to be moved to make way for the return loop.



TRACK AND WIRING

My track came from a variety of sources. The initial track was salvaged from my earlier layouts and was primarily Shinohara flextrack and turnouts. I started using Micro Engineering track when that became available, as well as Walthers products.

I use Atlas code 100 track in the staging yards and the larger helix. The main line from Minneapolis to Fargo is code 83, with code 70 used on sidings. The joint GN-NP main line also uses code 83. The Willmar-to-Duluth line is code 70, along with the yard in St. Cloud. Many of the industrial tracks use code 55 track. Turnouts vary from No. 4 to No. 8. There are a number of bendable Shinohara turnouts on the layout.

I use No. 4 turnouts on some of the industry tracks on the Willmar-to-St. Cloud main. The prototype had sharp turnouts in these locations. The timetable special rules on the prototype state that engines larger than class O-4 aren't allowed on industry tracks in these towns. Failure to follow this rule will cause derailments on my layout, also.

The trackage in the yard has been laid three times. Initially I based the track in St. Cloud yard on a diagram provided in an early GNRHS Reference Sheet. A number of years later I purchased copies of a GN drawing of St. Cloud Yard in the late 1950s. I noticed a number of additional tracks that weren't on my layout. I re-laid the yard ladders and added these tracks. This improved operations tremendously. Following the prototype

4 Electro-Motive Division F9 7004D heads Northern Pacific freight No. 631 on its journey from Minneapolis to Fargo, N.D. The train is entering the outskirts of East St. Cloud on the joint GN-NP track on the east side of the Mississippi River.

solved some of the issues we were having operating the yard.

The main body of the yard was re-laid one additional time. As the layout grew, the number of trains increased and there was a shortage of yard tracks. I'd laid the yard using 2" track spacing. By laying the tracks on 1 $\frac{3}{4}$ " centers, I was able to add another track to the yard.

The layout was designed to be operated using DCC. Currently I use a Digitrax DCS100 with three Digitrax boosters. The layout is divided into four main sections: St. Cloud, the Minneapolis-Fargo main line, the Willmar-St. Cloud line, and the GN-NP joint line along with East St. Cloud. Three Digitrax PM42 are used to divide the remainder of the layout into smaller wiring districts.

SCENERY

I started adding scenery in 1999, in time for the NMRA Northstar '99 National Convention. I remember my 6-year-old daughter helping me add scenery the night before the first tours.

I was never happy with my scenic efforts. I started my career as a mechanical engineer, so I was great with straight lines and could paint models with an airbrush, but I was definitely not an

5 Just after sunset, Great Northern Train No. 11, the westbound *Red River*, passes a rural grade crossing east of St. Cloud, Minn., on a late September day in 1956.



artist. I used stencils and spray cans to paint horizons, tree lines, and clouds on the backdrop. I even tried painting trees on the backdrop.

I started scenery using ground foam. I placed some SuperTrees and added details like pole lines and signs along the right of way. But none of it looked good enough to me, and my scenery lagged.

Three innovations made a huge difference to me and totally re-energized my layout building efforts: photo backdrops, static grass, and PanPastels. I'd purchased some SceniKing backdrops, but they sat on the shelf for a few years. Then in 2014 I added them to a small section of the layout at Waite Park. The change was dramatic.

I had used static grass in some small sections of the layout, which looked good. However, I still wasn't happy with the overall effect. I added more backdrops, then took out a scraper and

replaced the scenery with Silflor static grass. For once I was truly happy with my scenery.

An important lesson I learned early on is that you can't match the backdrop to the scenery. Instead, you need to match the scenery to the backdrop. I used PanPastels to match the roads on the layout to the ones on the backdrop. I also used them on the rocks at the Sheilly-Peters Gravel Co. I've even used Pan Pastels on static grass.

The Great Northern ballast is Penn-Ohio Blend from Smith & Son. An early GNRHS Reference Sheet included small samples of ballast from different GN ballast pits, and I tested many different brands before selecting the Penn-Ohio Blend. The ballast on the GN-NP joint line is Arizona Rock & Mineral NP ballast. The majority of the dirt, gravel, and cinders on the layout also come from Arizona Rock & Mineral.

In addition to the static grass, I use many of the new scenery materials from Silflor, Martin Welberg, and others. The key to good scenery is adding multiple layers of texture. Using a variety of materials and colors keeps the scenery from appearing repetitive. Scenery has gone from the area of the hobby that I liked the least to one of my favorite parts.

STRUCTURES

My goal is to build a model railroad that is as accurate as reasonably possible. But the key word is "reasonably." I don't have the time or the information to build every structure as it was in 1956, nor do I have the space to build some of the largest structures to exact scale. For what I refer to as "scenic" structures, like houses and stores, I use commercially available kits. I put more effort into accurately reproducing structures that are more closely related to the railroad.



Since the layout is based on specific towns in central Minnesota, there are very few structures available that are correct for the layout. The exceptions are kits offered by the Great Northern and Northern Pacific historical societies, as well as several kits from GCLaser and American Model Builders that are based on standard Great Northern and Northern Pacific building designs.

For many of these town structures that I'm modeling, I can only find photographs with limited detail or no photos at all. I'm limited to the information I can find on Sanborn Fire Insurance maps and railroad station maps. Fortunately, local historical societies have photographs that show many of the structures found near the tracks in the towns I am modeling. As a result, I'm at the point where most of the important structures along the line can be modeled reasonably accurately.



ROLLING STOCK

In my early modeling years, not many accurate freight cars were available. At first I painted and decalated Athearn "blue box" cars, then started modifying them to look more accurate. When improved freight car kits were released by companies including E&B Valley, McKean, and Innovative Model Works, I started building those. By the time the layout was getting ready for operation, I had about 100 freight cars in service.

At the same time I detailed and re-motored several Athearn engines and acquired a number of brass GN caboose and passenger car models. When the Stewart FTs were introduced, I detailed and added a set to the layout. Stewart F-units and Proto2000 GP and SD units and switchers made up the majority of the motive power roster. Broadway Limited engines were added when they became available.

When I started operating the layout in 1999, I suddenly needed a lot more rolling stock than I had at the time. Fortunately, two friends, Joe Binish and Jon Bratt, had many detailed freight cars but no layout. Each loaned me about 100 freight cars, which gave us enough to operate realistically. Then Jon and Joe started building their own layouts, and the next several years were spent building freight cars to replace those that had been borrowed.

Over the years my standards for rolling stock have changed as better cars and detail parts become available. Currently all new rolling stock has semi-

6 Great Northern SW1 No. 80 spots a tank car at Northwestern Oil Co. in East St. Cloud. The joint GN-NP main passes behind the industry. Each railroad served the industries located on its side of the main line. The General Mills Farm Service elevator and Purity Coal are on the NP side of the main line.

scale wheelsets and couplers, separate grab irons, uncoupling levers, ladders, and detailed underbody brake systems.

My motive power roster is going through a transition. Many of my earlier engines have worn out from use over the past 25 years. I've also found more prototype information about what engines ran over the portion of the GN that I model. I'm now trying to model the engines that actually ran through St. Cloud in the fall of 1956.

One of the reasons that I chose to model 1956 is that the GN still ran steam in Minnesota through mid-1957. The dispatcher books showed that a lot more of the trains were steam powered than I'd realized. Over the years I've purchased a number of GN brass steam engines. These are being added to the locomotive roster as they can be upgraded with sound decoders and lighting.

Models of other engines often found running through St. Cloud are being added to the layout, including two-unit FT sets and the GP7s used on the main-line locals. All of the new engines include sound decoders and stay-alive capacitors for more reliable operations.



OPERATION

In March 1999 I received a call from Gary Freseman, one of the pioneers of model railroad operations in the Twin Cities. Gary wanted to see the layout. He asked if I was planning on hosting operating sessions and whether I was interested in joining MinnRail, a group of layout owners who hosted an operating weekend on odd-numbered years. Of course, the layout would need to be tested by a group of MinnRail members to make sure it operated well enough.

Over the next three months I put together an operating scheme and made up car cards and waybills for my freight cars. My first session was held on June 16 of that year. Only one end of the yard was in place, but there was enough to keep a group of more than 10 busy. I was invited to participate in MinnRail later that year and have hosted more than 100 operating sessions since.

Operations have developed as the layout has grown. Initial sessions were run with a small number of trains and an 8:1 fast clock, simulating an entire day of operations in a 3-hour session. As the layout grew and more staging was added,

7 The usual power for local freight No. 528 is in the shop today, so EMD GP7 No. 602 is spotting an empty boxcar at the Rockville Elevator and Mill. The elevator was located on the opposite side of Hwy. 23 from the GN main line, with the spur passing through the corner of the Deep Rock gas station lot.

allowing more trains to be run, the clock was slowed to 4:1. When the lower level and its six more staging tracks were added, the clock slowed further to 3:1.

The final changes were made a couple of years ago. The addition of more industries and a new switching location on the layout lead to a decision to slow the operations even more with a 2:1 clock speed. This gives the yardmaster enough time to get his job done.

Trains are authorized by timetable and train orders (TTTO). Car cards and waybills are used to route the cars, but the crews are provided with prototype-based empty switch lists. The conductors on locals are expected to fill out the switch lists by hand, just as they would on the prototype.

Most of the paperwork is based on the prototype. I enjoy re-creating forms based on prototype paperwork that I've collected over the years. This includes dispatcher train sheets and train order books, train order forms, Clearance A forms, switch lists, and other forms.

An operating crew includes a dispatcher, an operator, and a yardmaster who oversees traffic in St. Cloud Yard. Three switcher crews operate under the direction of the yardmaster. Two people run the Northern Pacific portion of the layout. One operates the throttle for the local switcher and the tower control panel for the turnouts and signals, while the second brings the trains from staging through East St. Cloud and also serves as the conductor for the local switch job. An additional five to six operators run the trains on the Great Northern portion of the layout. With the Superintendent and crew caller (me), that results in a crew of 14-15 for each session.

The Great Northern schedule includes all the passenger trains and time freights that ran through St. Cloud in September 1956. In addition, locals operate from St. Cloud in all four directions, along with a



number of industrial switch jobs. Extras include grain extras, reefer and potato extras, a ballast train, and a work train.

THE FUTURE

There's a lot of work remaining on the railroad. More structures need to be scratchbuilt, and scenery is still needed in several locations. I have shelves of car kits waiting to be built and locomotives waiting for decoders and paint. Model building is an enjoyable part of the hobby, so I really don't want to be finished.

Then there's the social aspect of the hobby. Our Monday night round-robin group is still around, helping the newer members build their layouts and operating on the more established layouts. Hosting operating weekends has led to invitations to operate on other modelers' layouts. The result is friendships with modelers across the country and even across the world.

8 Class O-1 Mikado No. 3135 leads the westbound St. Cloud-to-Willmar local over the Mill Creek trestle in Rockville, Minn. The Mikado flies white flags because locals ran as extras on the Willmar Division. Richard has been adding steam power to the layout after discovering that the line ran more steam in 1956 than he originally thought.

Building the layout has been a long journey that has been made more pleasurable by the many friends I've made in this hobby. Special thanks go to my wife, Jane, for being supportive and understanding. Thanks also go to Joe Binish, Jon Bratt, and Doug Complin, along with the other Monday night round-robin crew members and my local operating crew. Over the years we've spent a lot of time together. I hope to continue to do so well into the future. **GMR**

MEET RICHARD REMIARZ

RICH REMIARZ RETIRED IN 2019 after a 40-year career at a scientific and industrial instrument manufacturing company. When he's not working on his layout, Rich volunteers for the Great Northern Railway Historical Society, working at the GNRHS archives, for the Modelers' Pages, and on the Model Development Team. His other hobbies include golf, travel, photography, camping, and spending time with his family. Rich and his wife, Jane, have two daughters, a son-in-law, and a grandson.



GROWING

A second deck extends the run on the HO scale New York & Long Branch

By Kevin Surman ■ Photos by Lou Sassi



1 Pennsylvania RR Alco RS3 No. 5893 switches reefer cars loaded with bananas at the Holland America Line pier H building on Kevin Surman's HO scale New York & Long Branch RR. The scene, a new addition to Kevin's layout, greets visitors at the basement's entrance.

THE HO SCALE NEW YORK & LONG BRANCH RR was created to recapture my childhood memories of railfanning in eastern New Jersey, from the Hudson River terminals down to the Jersey Shore. I cherish the time I spent train watching with my grandfather, watching the exchange of GGIs and E8s at South Amboy, Alco RS3s working Browns Yard, the never-ending parade of corridor trains, and the Raritan River RR through my childhood home of South River, N.J.

The layout is inspired by and centered on the New York & Long Branch RR, operated jointly by the Pennsylvania RR and Central of New Jersey. Two different railroads, each with distinctive equipment, combined with all the connections and branches make this a fascinating railroad to model.

An earlier version of the layout was featured in the November 2013 *Model Railroader*. Although it operated well, it had limitations that I wanted to improve upon. My favorite part of the hobby is operation, and I felt limited by the short main line and the requirement to run to the other side of the basement to catch up to a train leaving or entering Red Bank staging.

I wanted to develop an operating scheme that was flexible enough to go from four operators to a maximum of 12. I also planned to include a harbor scene with the flexibility to replace Newark with Exchange Place Station and the Harsimus Cove Yard.

CHANGE IS GOOD

My first goal for the extension was to lengthen the mainline run and eliminate the need to walk around the peninsula to catch up to a train. I also didn't want construction to interfere with my monthly operating sessions. The inspiration that made this work was turning the existing Atlantic Highlands branch into part of the main line. I looped the track

IN THE GARDEN STATE



2 Central of New Jersey Alco RS3 No. 1546 leads a train of empty sand hoppers back to Red Bank Yard from the American Can Co. glass works. The operating signals are from Oregon Rail Supply and the wooden overpass is scratchbuilt.



3 This overall view of the layout from the end of the peninsula shows the new second level featuring Red Bank through Sea Bright. The finished South Amboy section is on the lower level at right.

from Atlantic Highlands around to the back, across the wall into the shop area, and then on to Red Bank.

The first issue to work out was layout height. Should the track cross over or under itself at the entrance of the peninsula? I wanted to keep the upper level as low as possible, but this was going to be a challenge, as I hadn't designed this layout to accommodate another deck. I found I had just enough room to squeeze a new track under the existing track leaving Atlantic Highlands to the helix. This determined the height of the rest of the second level and resulted in a manageable 2% grade from Sea Bright up to Atlantic Highlands.

I also needed to keep the upper deck as thin as possible. I got it down to just

under 2" using varied support methods. I started with a $\frac{3}{4}$ " plywood deck anchored to a plywood wall ledger board. I cantilevered it off the wall using L-channel steel braces extending through the wall at several locations. I also made use of threaded support rod extending up from the lower deck and hidden within a smokestack.

I used a metal strip product secured to the edge of the plywood with screws for the fascia. The metal strip stiffened the upper level and prevented any deflection or future warping. This product is a Wiremold divider manufactured by Legrand and used in surface-mounted electrical raceways (legrand.us/wiremold, part G4000D). It is easily bent by hand, is cut easily with tin snips, and can be secured with washer-head self-tapping screws. I added LED tape light to the inside of the edging to illuminate the now partially covered lower level. The net gain from this is an additional 106 feet of main line, bringing the layout to a new total of 296 feet.

ADDING A PORT OF ENTRY

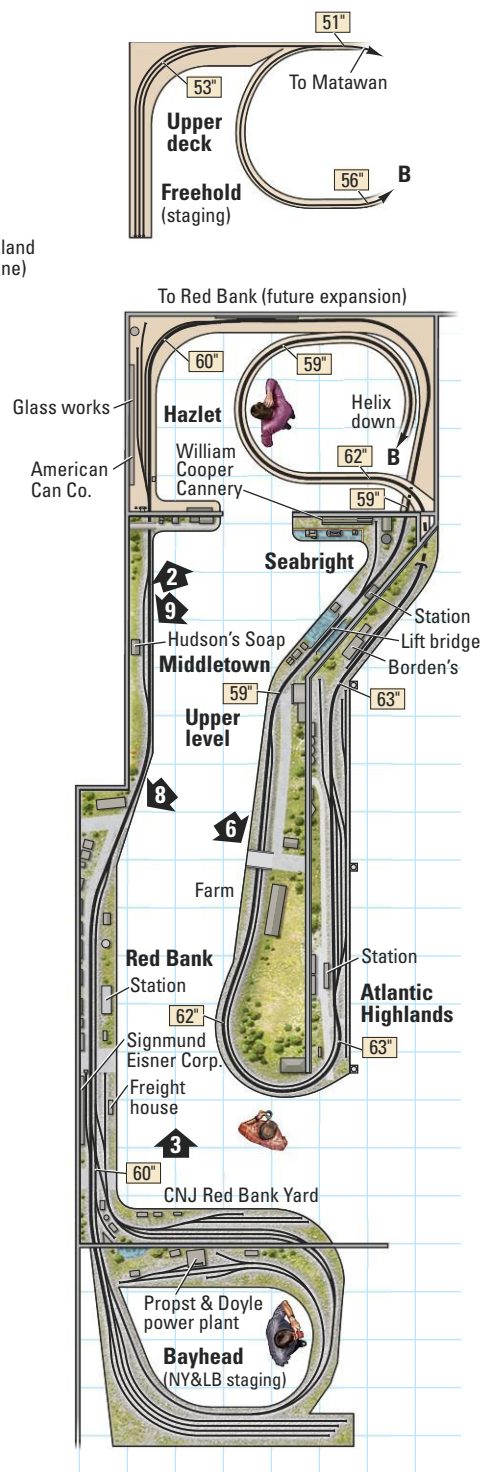
When you first enter the basement train room, the first section you come to is Harismus Cove/Jersey City. It features an area along the Hudson River where the Colgate factory complex, with its signature clock, was once located.

I was inspired to start this new section after I received a tugboat and barge from the estate of Henry Probst. Henry was a New York Central modeler, and his layout set the bar for reliable operation with long trains. I wanted this bequest to be part of a signature scene. The challenge was the need to keep the benchwork as unobtrusive as possible through the narrow entry to the room.

I removed existing shelving displaying trains, memorabilia, and my phone booth storage closet. I used box construction and covered the new harbor and freight yard with $\frac{3}{4}$ " plywood. The backdrop is 24" wide white aluminum flashing painted a sky blue. The lighting above this area is dimmable, color-selectable flat-panel LED fixtures.

HO scale (1:87.1)
Room size: 21x46 feet
Scale of plan: $\frac{1}{8}" = 1'-0"$, 24" grid
Numbered arrows indicate photo locations
Illustration by Jay Smith and Kellie Jaeger

[➤ Find more plans online in the Trains.com Track Plan Database.](#)



NAME: New York & Long Branch RR	MAXIMUM GRADE: 2%
SCALE: HO (1:87.1)	BENCHMARK: open grid
SIZE: 21 x 46 feet	HEIGHT: 47" to 63"
PROTOTYPE: Central of New Jersey, Pennsylvania RR, Raritan River RR	TRACK: code 83 flextrack
LOCALE: New Jersey	SCENERY: extruded-foam insulation board
ERA: late 1950	BACKDROP: photos and paint on aluminum flashing and tempered hardboard
STYLE: multi-level walk-in	CONTROL: Model Rectifier Corp. Digital Command Control
MAINLINE RUN: 296 feet	
MINIMUM RADIUS: 30" (main), 16" (Raritan River branch)	
MINIMUM TURNOUT: No. 6 (main), No. 4 (yard)	

4 Central of New Jersey 0-6-0 switcher No. 104, on loan to the Raritan River RR, is about to cross Augusta Street after drilling the interchange tracks. The factory is a reworked John Nehrich structure.



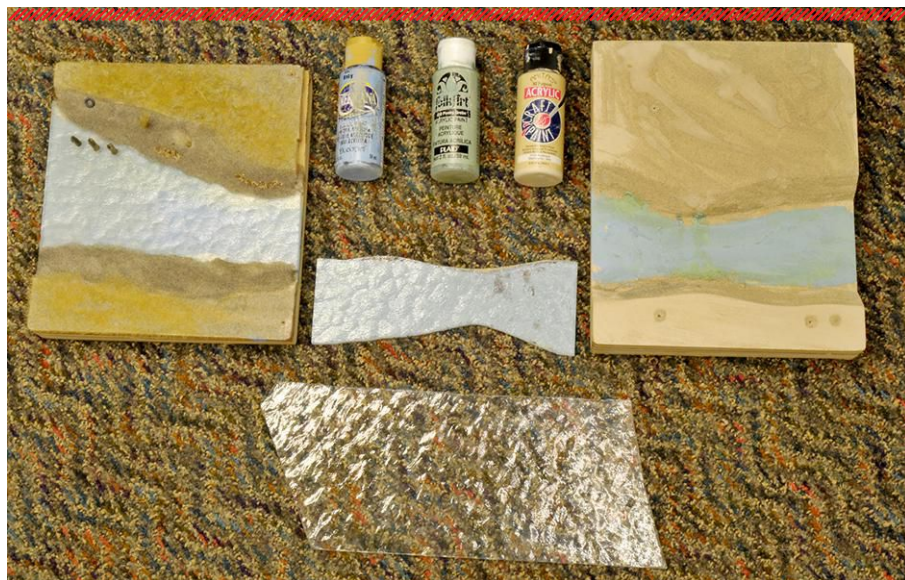
5 The *Broker* rolls into South Amboy behind Pennsylvania RR No. 5772. The engine is a brass model of the BP-20, which is a longer three-axle passenger version of Baldwin's famous "Sharknose" diesel.





I searched for a New York City Harbor backdrop and found an inexpensive poster on Amazon that I thought would work. I used two posters and found a vertical point along a skyscraper where I could splice them together. The content of the poster was amazing, but I had mixed feelings about the green tint of the image. Once I started to pull the same colors into the foreground, though, it started to look almost intentional.

The base of the harbor water is painted green to match the backdrop and covered with rippled Plexiglas also painted



Kevin uses textured Plexiglas to model bodies of water. He paints the base and the flat side of the Plexiglas, then presses them together while the paint is wet.

Water effects with Plexiglas

I MODEL WATER on the layout with textured Plexiglas. I use ripple-textured Plexiglas for larger bodies of water and pebbled for small streams. I don't recommend using real glass.

Plexiglas has several advantages over other common water-modeling methods. It's easy to keep clean with glass cleaner, has no fumes, doesn't leak all over the floor, and can be easily cut to shape with a jigsaw. Plus, it's a safe place to put your drink while working on the layout.

Start with a flat base for your body of water that you can paint. I use cabinet-grade plywood with no knots, but other material would also work. Next I cut the Plexiglas to the size for the location and paint it with cheap acrylic paints.

What color is water? This varies immensely based on factors like location, weather, depth, runoff, fresh or salt water, and more. I try to capture the same colors that are in my backdrops.

I first paint the base and then the flat side of the Plexiglas. (I install it with the textured side up.) I put a thick coat on the plywood base, using darker colors to simulate deeper water and mixing in tans closer to the shore. I then paint the underside of the Plexiglas these same colors, and while both sides are still wet, I press the surfaces together and let the paint dry.

I hide the edges of the cut Plexiglas with fine sand. To model sandbars, I tear an irregular shape out of cardboard and glue fine sand on top. I then glue this to the Plexiglas surface with Aleene's Tacky Glue.

Pilings need to go through the water to look correct. I drill holes for them using a drill bit made for metal, not wood. — *Kevin Surman*

on the underside. The ship is a Revell 1:72 model of a Flower-class corvette that stands in for a banana boat. I eliminated parts of the ship and added HO figures and details to hide the scale discrepancy.

The dock is built from a plywood substructure covered with individual

basswood boards. The Holland America Line building on Pier H is scratchbuilt. It was inspired by a Fos Scale kit that I wanted to use, but was too large for the available space.

Max's Diner Bar & Grill is scratchbuilt with a section of an O-scale



6 Pennsylvania RR Alco RS1 No. 5633, assigned to a work train, rolls downgrade past Marshal Farm. The signs help establish the layout's time frame.

rounded car roof. I built the walls with sheet material and Tichy Train Group windows and doors. The sign is brass rod and copper sheet with signs copied from a photo of the actual Max's sign.

The Colgate Clock Building is kit-bashed from a couple of Bachmann Spectrum Department Store kits with

modified Tichy Train Group windows. The clock is scratchbuilt to the same diameter as a metal coffee-can lid I used on the mockup.

I was able to keep the short section through the doorway to just 3" wide, but I still tried to keep it interesting. I added many small details and building flats, and even extended some scenery over and onto the fascia.

The Pulaski Skyway and Hudson & Manhattan Railway overpass adds visual interest and sets the location. The balance of the Colgate complex, float bridge,

and yard make this an interesting section to operate on.

SOUTH AMBOY

South Amboy was just plywood when I wrote my 2013 article. It's now almost complete except for the Raritan River RR engine facility. South Amboy is the primary interchange with the Raritan River. It's also where the Pennsylvania RR electrified district ended and electric motive power was swapped for steam or diesel. I didn't model the catenary, as most of my operators have great



hesitation in reaching through the wires to uncouple cars.

The backdrop is white aluminum flashing painted a sky blue. One of the lessons learned in the use of flashing is the need to secure it over a solid surface to stay completely flat. Where I used it over open framework, it's possible to see some ripples. I also slipped while securing this area and put the screw gun tip through the sheet metal, but that's now hidden by a U.S. Navy airship.

I added a printed background from a scene I located on Google Street View. I search the actual locations I'm modeling



7 Pennsylvania RR No. 7279, a class K2s 4-6-2 Pacific, is the power for passenger and mail train No. 1157, westbound from Newark.

Operating PRR Train 1157

LET'S TAKE A RIDE on PRR passenger and mail train No. 1157, westbound out of Newark. Class K2s Pacific No. 7279 is sitting on Track C at the head of the consist, and the fireman has everything ready to go. The time is 5:10 a.m. when the conductor gives you the all-clear. The signal changes, and you drop reverser down to full forward, then open the throttle and start to move.

The train rolls through Lane Interlocking and onto Track 1. The train closes in on Woodbridge and you let off the throttle past WC tower to slow for a perfect stop at Perth Amboy at 5:28.

Perth Amboy is an industrial area. The station tracks are in a cut below downtown. At 5:30, the conductor gives you the all-clear, and with an advance approach signal, you get the train almost up to speed before you need to slow for your stop in South Amboy at 5:39. This is where the NY&LB connects to the Raritan River RR.

At 5:40, you depart the station and crawl up to the stop signal at Milepost 25. Pennsy Train 1104 passes you heading eastbound and clears the interlocking. The turnout moves, you're given an advance approach signal, and you head out to Matawan.

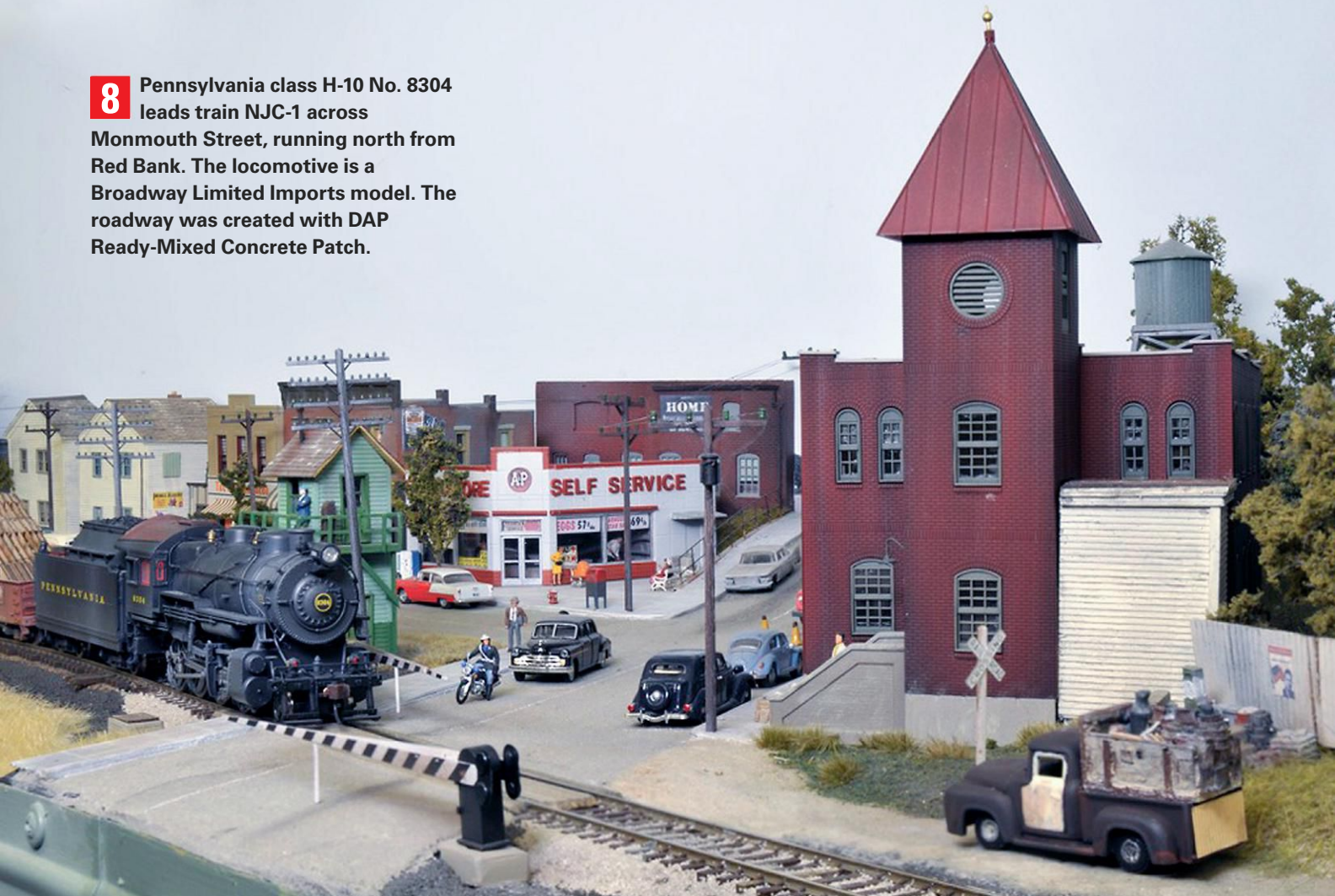
The scenery is more shore-like as you roll over the bascule bridge at Morgan and pass through Cliffwood without stopping. As you roll into Matawan at 5:47, CNJ passenger train 4000 is sitting on the station track. The conductor gives you the all-clear at 5:50 and you head timetable west.

You pass the signal at Milepost 39 and make a quick stop at Atlantic Highlands. With a clear signal at Milepost 44, you coast downgrade and brake past local drill QV-1 tucked away on the siding.

The train rolls over the bascule bridge crossing the Navesink River Inlet and you make a stop at Sea Bright. Departing at 6:30, you roll past the large American Can Co. glass works at Hazlet. The train arrives at Red Bank at 6:43, only three minutes behind schedule.

The brakeman uncouples your engine and you pull clear past the tower and Chestnut Street. A yard switcher runs through the interlocking plant, pulls two express cars, and replaces them with others. Once the switcher is clear, you back onto your train and build up air. You depart at 7:00 for staging. You just finished your first run on the New York & Long Branch. Turn in your Form 19 to the dispatcher and sign up for your next run. — *Kevin Surman*

8 Pennsylvania class H-10 No. 8304 leads train NJC-1 across Monmouth Street, running north from Red Bank. The locomotive is a Broadway Limited Imports model. The roadway was created with DAP Ready-Mixed Concrete Patch.



and can usually find something that I can use. If the printed background scene includes trees or bushes, I will glue ground foam in a matching color in patches over the upper limbs of the trees. This technique adds a 3-D effect, making the background pop and disguising the edge where the printed backdrop meets the painted sky.

The buildings are a mix of kit and scratchbuilt, with a couple I reworked from models discarded by John Nehrich.

MORE ADDITIONS

Sea Bright features a marina with a single-track bascule bridge carrying the railroad over the Navesink River inlet. The backdrop is from Google Earth and is from a location on Ocean Drive just before Cape May, N.J. The water is rippled Plexiglass painted on the bottom with colors from the backdrop image. (See “Water effects with Plexiglas” on page 75.) The station was built by Rich Cobb and given to me by a friend. The

main cannery building was also a repurposed gift surrounded with smaller wooden kit structures.

Hazlet features the American Can Co. Glass Works. It receives sand from southern New Jersey and ships out finished products. The factory is scratchbuilt from a plywood frame covered with Northeastern Scale Lumber corrugated siding. The office and warehouse sections and other assorted buildings are from kits. Hazlet has added a lot to the operating sessions with the never-ending requirement of carloads of sand used for glass making.

The Middletown area contains mostly scratchbuilt structures that I wanted to display but keep out of harm’s way. The wooden overpass helps to hide the track going through the wall.

Red Bank is the junction where the CNJ Southern Division broke off from the NY&LB and was once the route of the Blue Comet. An interlocking tower and yard here originates local drills such

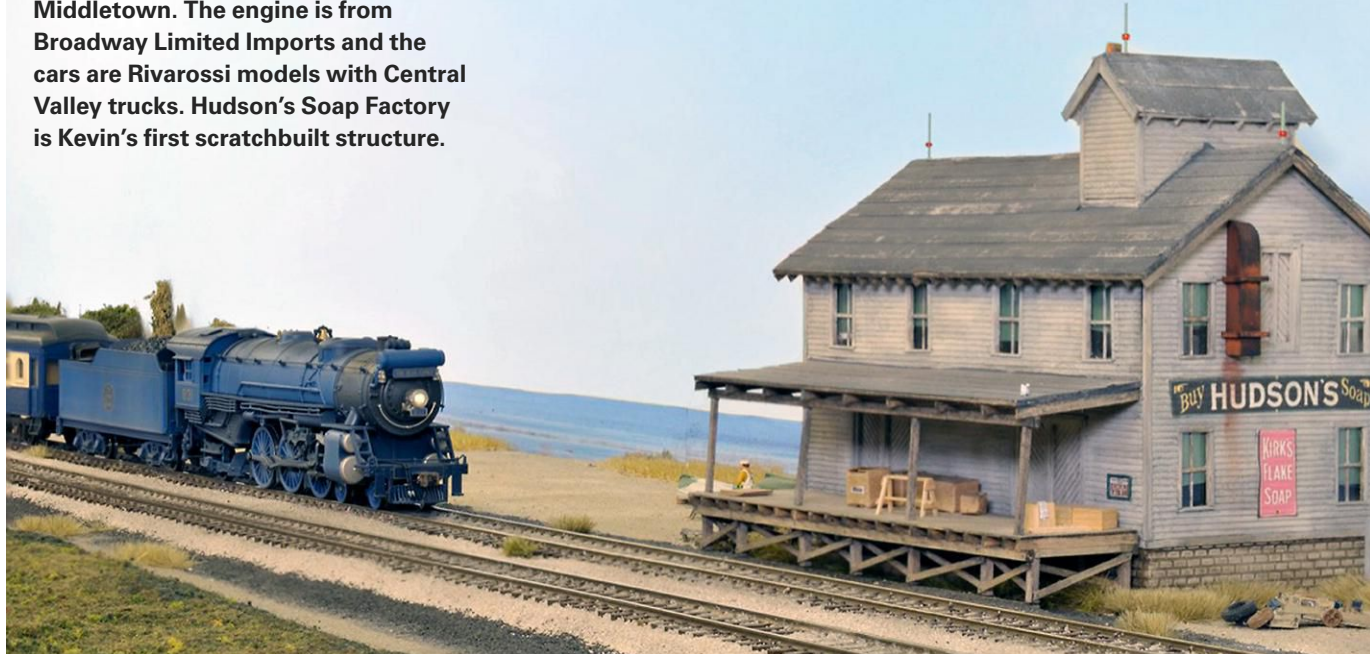
as QV-1. The station building is a coveted kit from Micro-Mark and the newspaper stand originally stood on Lou Sassi’s layout. The balance of the town buildings are a mix of kit and scratchbuilt as needed to fit the available space.

The Cudmore Power Plant located just east of Amsterdam, N.Y., was a signature model on the layout of the late Henry Probst. The late William Doyle salvaged this section from Henry’s layout and it was then given to me. It fit right into a section of my layout as if I had planned it, and I now have a great memento of these two great people.

SANDY SCENERY

The scenery in the Middletown area is mostly tall grass and sand. I built up the area using extruded-foam insulation board, shaped as desired, then covered with light tan latex paint and fine ground foam. I let this all dry and then lived with it for a couple of weeks to rule out any changes I might want to make.

9 *The Blue Comet, with engine No. 831 in the lead, races through Middletown. The engine is from Broadway Limited Imports and the cars are Rivarossi models with Central Valley trucks. Hudson's Soap Factory is Kevin's first scratchbuilt structure.*



I then painted on white glue in areas of one or two square feet at a time. I applied static grass in a various shades and lengths, then sifted a thin layer of very fine sand over the entire area.

The last and most important step was to go back with a shop vacuum while the glue was still wet to straighten leaning fibers of grass. The air flow pulls them vertical, but the tricky part is holding the nozzle the right distance above the scenery. I started with the nozzle about 10 inches away and then lowered it until I could see the fibers start to move. Any closer and the vacuum would suck up everything, and I'd have to start all over.

I let this dry for a couple of days, then go over it with the shop vacuum again to clean up any loose sand and fibers.

OPERATIONS

I belong to two different round-robin operating groups, so I wanted to develop sessions that would work for a group of four to a maximum of 12 and everything in between. For a minimum-size group of four, one person operates Greenville Yard, two road engineers run six or seven trains per session, and the fourth is assigned to local Train QV-1.

If I have a larger group, I can assign four people to operate two yards, one

station operator, and four road engineers moving up to 18 trains. I can add three more jobs operating the two local drills and the Raritan River.

I try to keep the sessions to about three hours. During that time, a smaller sized group will run more trains per operator. This is because fewer conflicting trains delay crews at signals or require them to clear for superior trains.

I normally start a session under a fast clock set at a 5:1 ratio but switch over to just sequence around the middle of the session. The yard operators refer to a sequence of operations form and individual switch lists hung over the yard when building or breaking down trains.

I assign the road operators to their first trains and hand out the form 19s and switch lists if required. I let the LV interchange train and the Harsimus Local depart, set the clock, and warn everyone we're ready to start. I operate the turnout at Milepost 52 that clears the signal ahead of train 1104 waiting at Red Bank, and we're off and running. I switch over to a sequence session once CNJ Train 5350 arrives in Newark.

THE FUTURE

The next project is replacing the track and scenery between South Amboy and

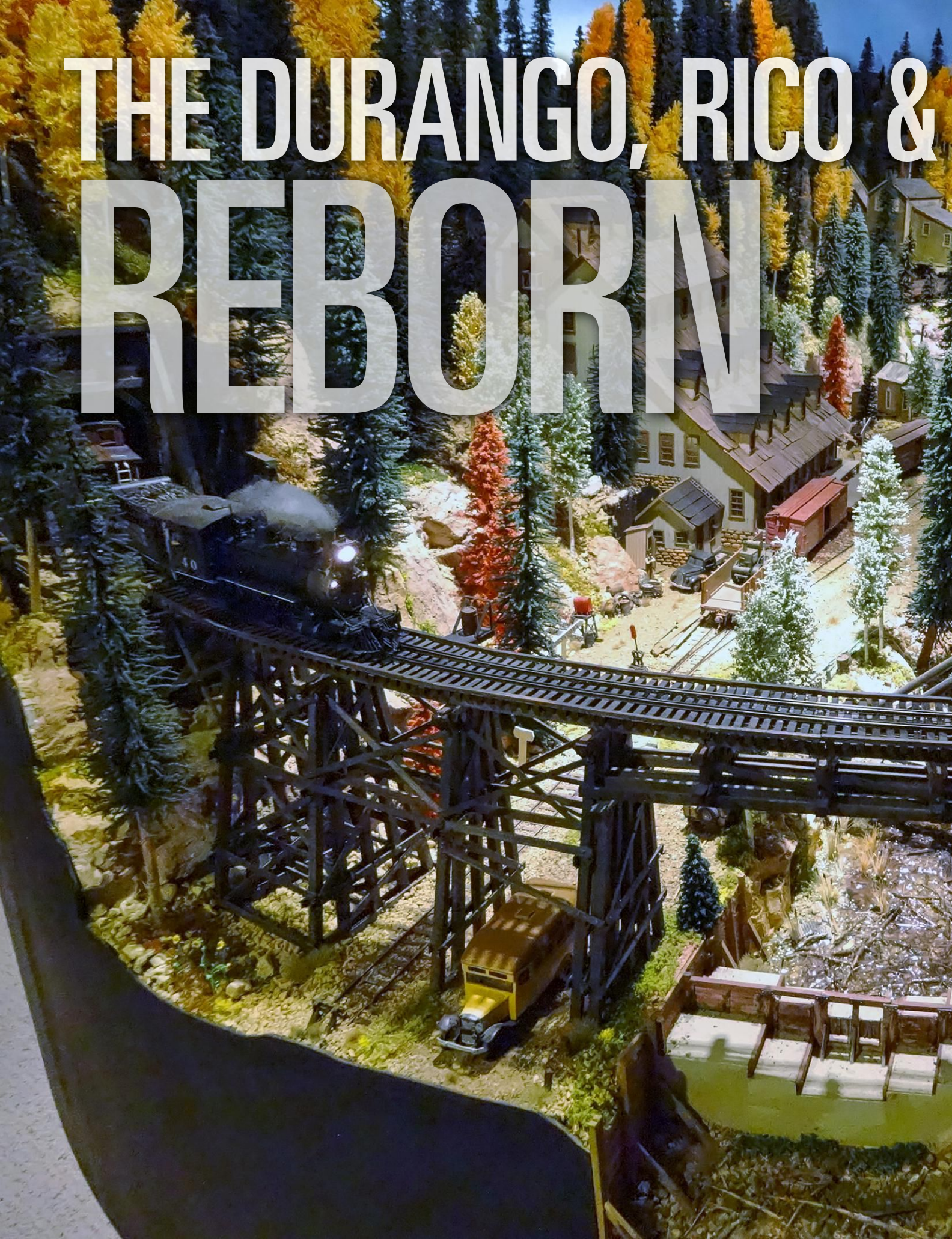
Matawan. I plan to install a double-track main line to reduce traffic congestion and replace the bascule bridge at Cheesequake Creek Inlet. I'm also going to add the Raritan River RR shop complex at the south end of the South Amboy scene. Harismus Yard will replace Newark Station and Exchange Place Station will replace the Greenville Yard area. Stay tuned. **GMR**

MEET KEVIN SURMAN

KEVIN LIVES IN Saratoga Springs, N.Y., with his wife, Sandy, and two dogs, Lucy and Chloe. Kevin is a licensed master electrician and facilities supervisor at Rensselaer Polytechnic Institute. He is a member of the Hudson Berkshire division of the National Model Railroad Association. Kevin is also a motorcycle enthusiast and enjoys riding his Harleys and seeing the world from the deck of a cruise ship.



THE DURANGO, RICO & REBORN



NORTHERN



Modeling a favorite railroad in a new scale, Sn3

By Jon Stetz

Photos by the author

I WILL NEVER FORGET the day in 1964 when my father brought home a box labeled “Sears HO train set.” I was 6 years old, and this was my first train set. It was the coolest thing I’d ever seen, with green plastic mountains, tan roads, and lots of buildings. Dad attached it to a board that stored under my bed.

When I got older, Dad gave me a 4 x 8 sheet of plywood on which to build my railroad empire. As time passed, I went from that original HO scale set to an N scale set that ran under the Christmas tree. After college and my first job in Kansas City, I built my first Durango, Rico & Northern in HOn3. During the 1984 National Model Railroad Association national convention, my railroad was discovered and published in *Model Railroad* magazine a year later.

Many years later, I built an Sn3 version that traveled to NMRA and narrow gauge conventions before finding a home at Overland Models in Muncie, Ind.

It’s been 30 years since the original DR&N was built, and my modeling skills have considerably improved since then.

THE BIRTH OF A RAILROAD

The Durango, Rico & Northern RR was conceived in the late 1800s as part of a network of rail and stagecoach lines that would connect the ore-rich mountain towns between Durango and Rico to points north. Originally surveyed for the Denver & Rio Grande (D&RG), the route is generally believed to be the product of Otto Mears as part of the Rio Grande Southern (RGS).

1 Running caboose light, No. 40 steps out onto the High Line trestle over Maggie’s Pond on Jon Stetz’s Sn3 Durango, Rico & Northern layout. Empire Mill and Hermosa Valley are in the distance.



Though the RGS did build from Durango to Ridgeway via the Dolores River route, the Rico-to-Rockwood branch was never built. It remained a stagecoach line and later a logging road.

Since the D&RG already had an existing line from Durango through Rockwood and on to Silverton, the Durango, Rico & Northern would have run from Rockwood to Rico via Hermosa Park, then the east fork of Hermosa Creek, then down Scotch Creek, to Scotch Creek Junction with the RGS. It is this branch that I modeled in Sn3 as it would have appeared in the years spanning 1940-1949.

The DR&N is based on research material from the RGS and the D&RG during the 1890s and later years. During its construction, the DR&N had enough foresight to lay 50-pound rail and build heavier bridges and more adequate grading than was needed in 1891. This foresight paid off as the line was able to utilize its own C-16s and the heavier K-27s it leased from RGS and D&RG.

THE ROOM

The layout room is a finished 22'-6" x 11'-0" space over my garage. It was originally designed as a carriage house, with a bedroom, clothes closet, laundry room and bath. When I finished the space, I chose not to have the bathroom installed. I had no choice about the windows, but they were eventually covered by the backdrop anyway.

The heating and cooling were installed in the usual way. I had a few extra electrical outlets installed in the walls and ceiling. Once the Sheetrock was hung and textured, it was painted a flat off-white color. Since this is a walk-around railroad, I expected to do a lot of standing while operating, so I had a heavy Berber carpet installed to make the floor more comfortable.

When the room was finally ready and the time came to start the railroad, I covered the carpet with a plastic carpet guard, therefore allowing easy cleanup after the bulk of the messy railroad construction was completed.

2 A Galloping Goose trundles through Timberline Jct., a busy place that includes a service siding and a water tank. It's the starting point for the Hermosa Creek branch, diverging to the right.

LAYOUT CONSTRUCTION

The layout wraps around the walls with a peninsula in the middle. The mainline curves were all laid out to be no less than 26" radius and the switches a mix of No. 4 and No. 6. Only in a few sidings does the radius drop to 24", requiring idlers when switching cars.

To save time on construction, I used pre-manufactured benchwork rather than homemade. This permitted me to build the layout in sections as time and funds allowed. After reviewing several manufacturers, I chose Sievers Benchwork (sieversbenchwork.com). Its 2 x 4-foot modular system, which included predrilled holes for wiring, heavy duty legs, and fast, simple bolt-and-screw assembly, allowed the railroad to grow as

THE LAYOUT AT A GLANCE

NAME: Durango, Rico & Northern

SCALE: Sn3 (1:64 proportion, 3-foot narrow gauge)

SIZE: 11 x 22 feet

PROTOTYPE: Durango, Rico & Northern; Rio Grande Southern; Denver & Rio Grande

LOCALE: Colorado

ERA: fall 1948

STYLE: walk-in

MAINLINE RUN: 43 feet

MINIMUM RADIUS: 26" (main), 24" (branches and sidings)

MINIMUM TURNOUT: No. 6 (main), No. 4 (logging branches)

MAXIMUM GRADE: 3.5%

BENCHWORK: Sievers commercial benchwork, $\frac{3}{8}$ " plywood

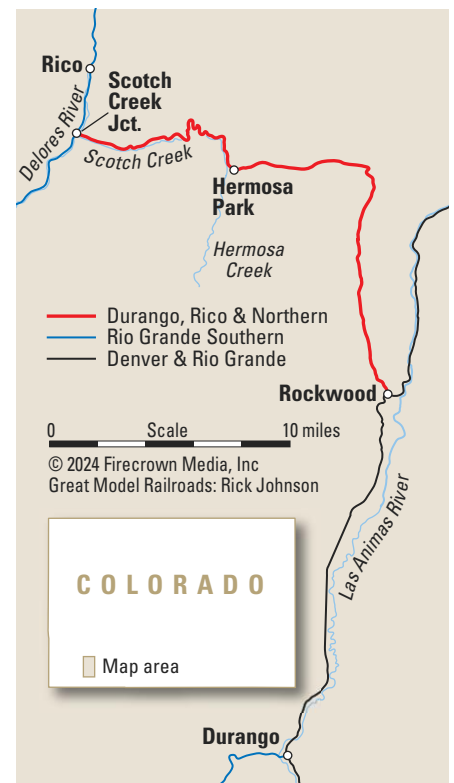
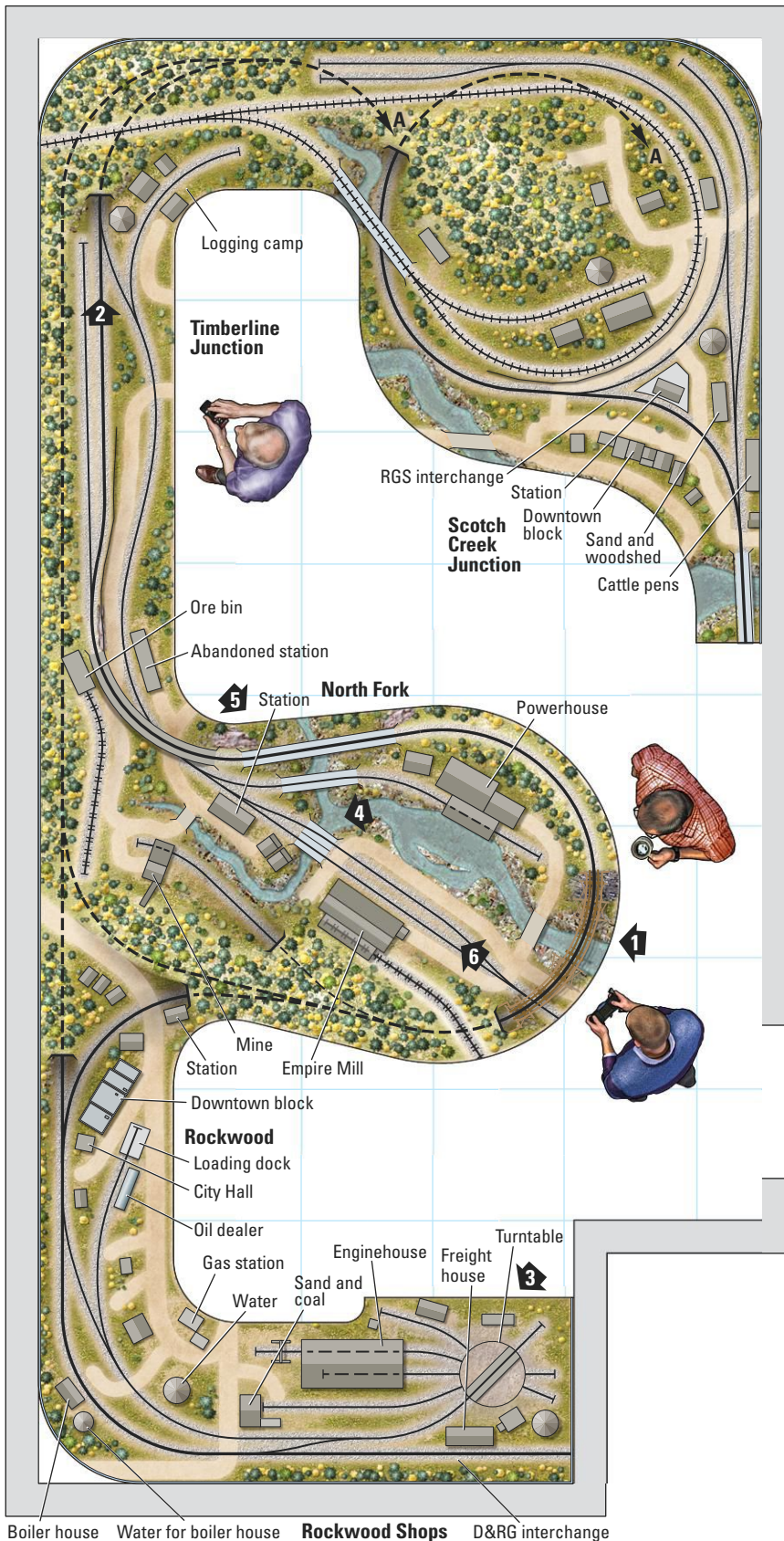
HEIGHT: 48"-56"

ROADBED: Homasote

TRACK: Tomalco code 70, modified Shinohara turnouts

SCENERY: extruded-foam insulation board
BACKDROP: vinyl flooring, painted sky, photo prints

CONTROL: NCE PowerCab Digital Command Control



Durango, Rico & Northern

Sn3 scale (1:64, 36" narrow gauge)

Size: 11 x 22 feet

Scale of plan: $\frac{3}{8}$ " = 1'-0", 24" grid

Numbered arrows indicate photo locations
Illustration by Rick Johnson and Kellie Jaeger

Find more plans online in the
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needed. The benchwork for Rockwood, Hermosa Park and Timberline was assembled and in place in a few days, leaving only Scotch Creek to be built later.

Three power buses using 14AWG wire were added next — one each for track power, switch machines, and lighting. At the section joints, bus bars were added to allow for disassembly if needed. The track bus was further divided into separate blocks at Rockwood, Hermosa Park, Timberline, and the future Scotch Creek to help trace shorts or to operate the railroad independently of other sections.

The tracks are powered by NCE's PowerCab, and the switch machines and special effects lighting with separate 12V transformers. With the basic wiring done, $\frac{3}{8}$ " plywood was installed over the frames, making sure the joints of the plywood matched the module sections.

The town of Rockwood is virtually flat, with only background hills, thus permitting several large pieces of Homasote to be installed over the plywood before any track centerlines were drawn.

In areas like Hermosa Park, Timberline, and Scotch Creek that were to be elevated with risers, large pieces of kraft paper were marked with track centerlines so they could be later used as templates for $\frac{3}{8}$ " plywood subroadbed and Homasote roadbed from California Roadbed Co. [California Roadbed Co. is no longer in business, but other Homasote roadbed companies can be found online. — Ed.]

I chose Shinohara flextrack and switches, some of which required adjusting and customizing as they were laid. But with the help of Track Tools LLC sweeps, laying out the curves and soldering the joints went a lot faster.

The track was spiked to the Homabed every 10-12 inches. Drops of cyanoacrylate adhesive (CA) were added at the track section joints and where electrical gaps were cut in the rails. Track feeders were attached either directly to the bottom of the rail joiners or to printed-circuit-board ties.

Turnouts in the hidden wye at Rockwood and the storage tracks behind

3 The DR&N engine servicing terminal at Rockwood features a two-stall enginehouse, turntable, and warehouses. The turntable is a Diamond Scale Products model.

Scotch Creek are lined by Tortoise by Circuitron switch motors mounted next to the switches. They are controlled with buttons installed on the fascia. The remaining turnouts were fitted with Blue Point manual switch machines from New Rail Models. The Blue Points are controlled by R/C aircraft cable and knobs mounted on the fascia.

At Rockwood is the only turntable on the railroad, a Diamond Scale Products model operated by a New York Railway Supply PTC III controller.

Despite the itch to get started on my favorite part of model railroading — scenery, buildings, and details — I took about a year perfecting the track by testing it with an assortment of consists, ensuring all worked well before tracks were ballasted and tunnels were covered.



SCENERY

Before starting any of the scenery work, I installed a low-voltage, track-mounted spotlight system on the ceiling. Some lighting tracks are above the layout and others are set back from the fascia edge, as the movable lights allow areas of the layout to be highlighted as needed.

The hobby has evolved since the early days of chicken wire, plaster, and newspaper. I wanted to try my hand at cleaner and simpler methods, so I re-read all my books on scenery and the use of extruded-foam insulation board before diving in. "Foam on the range," as I called it.

I never knew how easy it was to build mountains, tunnels, valleys, and creeks until I brought home a bunch of foam board and bought a hot knife and shaping set from Woodland Scenics. After a few months of stacking, carving, and shaping blocks of foam, I had the bulk of my mountains and hills done. I added plaster rock castings and small real rocks to create the look and feel I wanted.



Once all the basic features were in place, I used different shades of earth-tone latex paints to paint over the foam and around the castings. While the paint was still wet, I added talus and gravel around the rock outcroppings and various ground foams in the forests and fields. As the paint dried, it bonded this first layer of scenery. It was followed by a second layer as I perfected the final appearance for that area. This layer consisted of twigs, weeds, bushes, trash, and rubble from Scenic Express, bonded with a 4:1 mix of matte medium to wet water.

In Maggie's Pond and the creek leading to it, I stuck with what I knew and poured a very thin layer of Enviro-Tex two part resin, adding a few cattails and pieces of junk before it hardened.

While adding the scenery, I built in place my tunnel liners and rock sheds, adding nut-bolt-washer castings and tie rods as the prototype would have had back in the day. The trestle and bridge bents were built at my workbench but modified during installation.

For the most part, each bridge was built on location to fit the scenery, as it gives a better appearance when finished this way rather than adding the scenery around the bridge. The flextrack ties were removed as the tie decking was installed over stringers and the stringers to the trestle bents, then the rail was attached to the ties with a track gauge.

4 Just before the North Fork depot, the branch line splits with a siding crossing over Hermosa Creek to the powerhouse on the south side of Maggie's Pond. The train on the trestle is about to drop off a piece of heavy equipment for the powerhouse.

Cribbing and fences were made from a variety of materials and again built on location to fit the terrain; the same goes for all the road crossings and small auto bridges around the layout. Even the dam below the large bridge was built in place from scraps of sheet styrene and wood planks, along with its gate and watchmen's shack.

The railroad has its fair share of trees. Some 1,800 pines and 500 aspens were handmade by the good folks at McKenzie Brothers Timber Co. (mckenziebrotherstimmerco.com) to cover the mountains, towns, and valleys. The variance of colors helps showcase everything from the rusted autos to the colorful weeds and flowers, to smaller details such as bottles and papers along the road or tracks, the clothes hanging on the line or the dog in the yard, and the fishermen in the creek.

As each area of the railroad is finished, I carefully look it over to ensure the scene has as much realism as possible and bringing out life in miniature as in the real world.



STRUCTURES

As a former model railroad manufacturer, I saved a few drawings of kits I wanted on my railroad as well as some kits themselves. Using modeler's license, I scratchbuilt or modified them as needed to fit the locations or the setting. Other kits from Banta Modelworks (bantamodelworks.com) and Western Scale Models (westernscalemodels.com) were also used. Several buildings, including the powerhouse in Hermosa Park and the enginehouse in Rockwood, were built from scratch with no drawings or idea of the final appearance.

For a forced perspective, I also used HO scale kit structures from Campbell Scale Models, Magnuson Models, and Scale Model Masterpieces (debenllc.com/scale-model-masterpieces_c_13.html) in the background. In the town of Rockwood, Main Street was laid out to showcase the store fronts with the mainline

passing behind them. The opposite is the case in Scotch Creek, where the back alley side of Main Street faces the viewer.

In both towns, as well as in the mill complex and engine facilities, detailing of the buildings, both inside and out, is the focus. Everything that should be in or on a building was added, within reason, from pots, pans, and furniture visible through the house windows to machines in the engine house and trash and junk in the alley, to create that lived-in look and feel. Scale Structures Ltd., Wiseman Model Services, and Finest-Kind Models were the best sources, offering a large variety of items.

Figures also were another area of focus, inside and out of the buildings, in rail cars and vehicles, in the woods, and along the right-of-way. Fun & Games (scalefigures.com) and Junes Small World filled the bill, adding life and variety to every scene.

5 A plate girder bridge carries the main over the Hermosa Creek branch line into North Fork station and Empire Mill.

When each building was assembled at the workbench, I decided at that time if they would have lighting, what type, and where. Several buildings with freight doors received shaded lamps overhead, while others only got general interior lighting. The mill's powerhouse and engine shop's boiler house both have flickering red lamps to simulate flames in the boilers. Regardless of the type, when the buildings are installed, they are connected to the lighting bus via R/C car plugs.

The streetlamps and poles around the railroad are made from plastic tubing with their wires running up the inside of the tube. They are also connected to the wiring bus using R/C car plugs.



6 The Empire Mill in North Fork is one of the largest industries on the railroad, with its long loading dock and passing sidings. The industry is equipped with a sound module that plays the sounds of a stamp mill pounding ore.

To further add to the realism of the railroad, sound effects from ITT Products have also been added to some buildings, such as stamps pounding ore at the mill to grinders at the engine house and music at the Scotch Creek saloon. I even added a thunderstorm above Scotch Creek, and in Maggie's Pond, the sounds of frogs and the bubbling of the creek flowing into it.

ROLLING STOCK

I recognize my limitations when it comes to scratchbuilding locomotives and cars. So over the years I have amassed a nice collection from swap meets, train shows, and eBay. All but one of my locomotives and two Galloping Geese are from P-B-L. As time allowed, they were equipped with SoundTraxx Tsunami DCC sound decoders.

The rolling stock for the railroad is a mixture of assembled P-B-L, V&T Shops, and Triangle Scale Models kits equipped with Kadee couplers and P-B-L ribbed metal wheelsets. Only a few pieces of maintenance-of-way equipment are scratchbuilt or brass; these are on the railroad only for show, not for operating.

Everything is weathered using pastel chalks or dusting powered and sealed with Testor's Dullcote. Many of the cars feature loads, such as pipe, ore, wood, or machinery. There are passengers in the coach and combine that ride the rails from Rockwood to Scotch Creek and back. As my mood for operating the railroad changes, I often change out complete consists and power with my extras, leaving whole trains in different locations or configurations awaiting their next assignment.

ANOTHER GENERATION COMING

The Sn3 Durango, Rico & Northern was approximately 85% complete when it was dismantled in 2017. After retiring from the U.S. Navy, I planned a move to

a smaller house, so the layout had to go. But another Sn3 railroad is in the works.

I enjoyed building the DR&N RR in Sn3, following the concept of the original HOn3 version from 30 years ago. The improvements to the hobby have made this a most enjoyable adventure. **GMR**

MEET JON STETZ

JON HAS BEEN A LIFELONG model railroader and hobbyist, earning his Master Model Railroader in 1996. He was one of the principals of JAKS Industries Inc., a manufacturer of model railroad products, in the '80s and '90s. In 2000 he was recalled to active duty in the Navy, serving around the world and only able to work on this railroad when on leave. He retired in 2018 and passed away in 2024.



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Vinyl flooring for a seamless backdrop

By Jon Stetz

Photo by the author



I NEEDED TO PRESERVE the textured walls in my train room in as good a condition as I could in case I needed the room for another purpose in the future. This meant no paint or printed backdrops directly on the walls.

To make a simple and somewhat seamless backdrop, I used vinyl flooring. If you flip this material over, it has a sealed paper backing that can be joined at the seams using mesh tape and joint compound, as you would sheetrock.

I installed a single row of lath board 23" above the highest point on the railroad using finishing nails into the studs behind the sheetrock. I then added two more equally spaced rows around the room below the first. Next, I cut 24" wide strips from a 12-foot-long roll of remnant vinyl flooring and attached them to the lath with a thin bead of Liquid Nails adhesive caulk, using push pins to fix

them in place until the adhesive cured. At the joints and over the small nail holes I applied joint compound, sanding it smooth once dried, thus forming a continuous backdrop.

Once that was ready, I painted on several shades of sky-blue paint. I tried my hand at painting a few mountains and trees on scrap vinyl, but wasn't happy with the results.

Since I knew the backdrop would be only the vanishing point of the railroad and not the focal point, I dug out some old mountain backdrops I had from my HO on 3 days, scanned them into the computer, enlarged them, and printed them out. I carefully cut them out, joined them into manageable sections, then attached them to the backdrop where they would meet the foam terrain. It was a long and slow process, but in the end, they blended well with the scenery. **GMR**

Rockwood, the starting point for Jon Stetz's Durango, Rico & Northern (see page 80), is backed by a mountainous photo backdrop mounted on a roll of vinyl flooring material.



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