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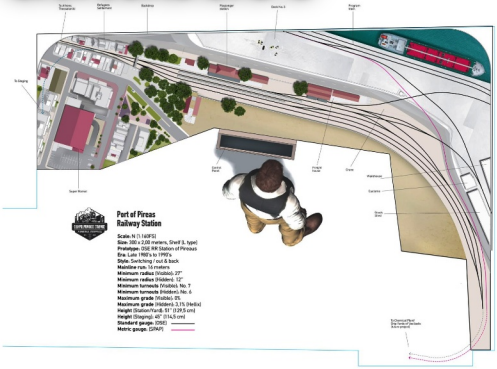

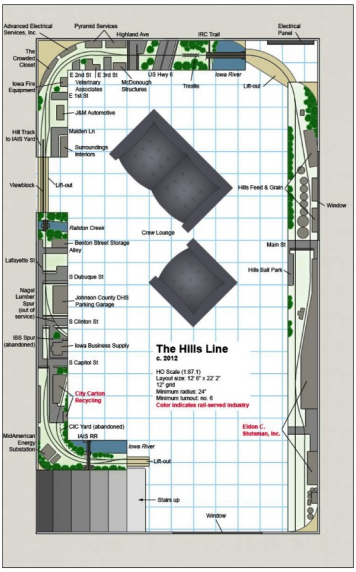

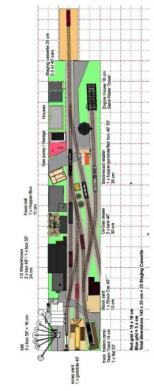

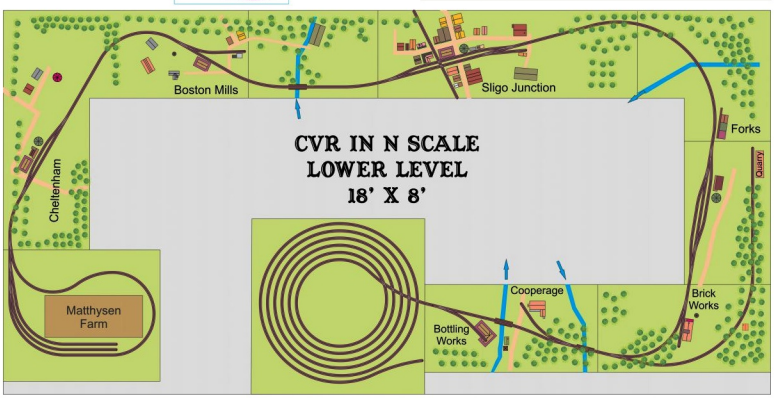

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MRH
MODEL RAILROAD HOBBYIST

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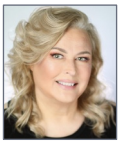
James Regier, Assistant Editor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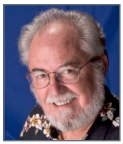
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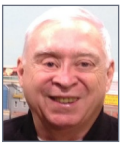
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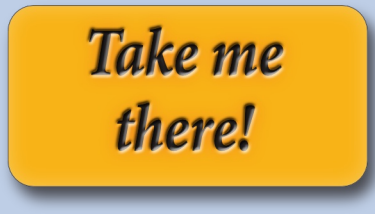

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PUBLISHER'S MUSINGS

Model Railroad Hobbyist | January 2026

Joe Fugate: MRH 2026 reader survey and thoughts on Ken Patterson's basement layout going up in flames ...

View reader comments

Our last reader survey was in 2023, so it's high time for a new reader survey.

We'll be rolling out our new 2026 survey later in the month of January so watch for it. Just visit this 2026 reader survey link:

mrhmag.com/2026/reader-survey-home

Once the survey is active, you will be able to select the button and take the survey.

If you fill out the *MRH* reader's survey, we will enter you into drawing for a free 10" tablet. We'll give away three tablets in total. We'll also give away a grand prize to one lucky survey participant: a free lifetime subscription to TrainMasters TV and to MRH Running Extra!

We usually get several thousand readers participating in the survey, so statistically we get results that are plus or minus 2.5% of the actual value with a 95% confidence. Statistically, pretty trustworthy, in other words.

Ken Patterson's layout fire disaster

In mid-December, Ken Patterson had just finished filming a What's Neat This Week podcast, and went upstairs to collect the family and go out for dinner. Luckily before they left, Ken

smelled smoke and went downstairs to find a corner of his layout going up in flames!

Quick thinking and some handy fire extinguishers enabled Ken to put it out in about five minutes. Ken said that was *the scariest* five minutes of his life!

But the damage had been done [1]. Noxious smoke filled the entire house, and once that cleared, fine black soot was everywhere.

Ken's quick action saved the rest of the layout and more importantly, *the house.*

1. Aftermath of the layout fire in Ken Patterson's basement. Actual fire damage was confined to what you see here in the basement, roughly 20% of the existing layout. The entire house has smoke damage.

So what happened?

Ken is big on security in his layout space so fortunately he had video surveillance cameras running.

The footage told the story: The train he had left running split the points on a turnout and started down the wrong route. The turnout frog polarity was wrong for that scenario, and the locomotive stopped dead on the frog.

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With 8+ amps from his DCC booster flowing through that frog, it became a heating element. The foam ignited. Then the supporting table caught fire. Then the walls. By the time Ken got there with his fire extinguishers, the ceiling tiles had started burning.

Two fire extinguishers and some frantic work saved Ken's layout room. But the lessons from this near-disaster are ones every model railroader needs to be aware of.

Lesson: Foam construction fire hazard

I know I've riled feathers before with my position against foam construction, so let me be diplomatic but clear: foam is wonderful for scenery terrain. It's not appropriate as the structural basis for your layout modules.

Ken has been a huge advocate of foam-only construction – building modules from 4-inch pink foam placed directly on tables, with track laid right on the foam surface.

After this fire, Ken has completely changed his perspective. He's moving back to wood benchwork and will only use foam for scenery terrain, and even then, he wants that foam on a plywood base. The plywood acts as a firewall of sorts, slowing any flames from reaching the foam.

Beyond the fire safety issue, there's a precision problem with foam. Foam has manufacturing tolerances of plus or minus 1/8 inch – that's a potential 1/4 inch variance across a sheet. Plywood is plus or minus 1/32 inch, or 1/16 inch total variance. Much better for track work.

But the safety issue is what concerns me most. When you lay track directly on foam and something goes wrong electrically, you're one short away from possible ignition of your layout. That's exactly what happened to Ken.

Use foam for scenery. Build your benchwork from wood. Don't get the two backwards.

Lesson: Robust DCC short protection

Here's something many modelers don't fully appreciate: DC and DCC layouts have fundamentally different risk profiles when it comes to shorts.

On a DC layout, you're typically running 1 amp or less per power pack, and you don't have full voltage on the rails most of the time. A modern HO locomotive with a can motor draws maybe 0.2 amps. The risk from a short is relatively modest.

On a DCC layout, you have full track voltage – typically 14-16 volts – on the rails at *all* times. And your booster is likely supplying 5 to 8 amps, sometimes more on larger layouts. A sustained short on a DCC layout can turn your rails, rail joiners, feeders, or frogs into toaster heating elements.

Most DCC boosters shut down in 500 milliseconds or less when they detect a short. On a layout with multiple operators, someone shorts the layout somewhere and your entire single-booster layout shuts down. "Hey, who shorted the layout?" becomes a common cry.

Better is to divide your layout into separate sub-districts, each with its own short protection circuit breaker board. The details of implementing this are beyond the scope of this editorial, but the principle is critical: the more layers of short protection you have on a DCC layout, the better.

And here's the sobering reality Ken's fire demonstrates: even *with* short protection, bad things can happen fast. Very fast.

Ken now sounds like an advertisement for sub-district circuit breaker boards, and I don't blame him!

Lesson: Frog wiring matters

The ignition point in Ken's fire was a turnout frog with incorrect polarity. This is important because you have

choices in how to wire your turnout frogs, and those choices have safety implications.

Dead frogs: The frog is isolated with insulating gaps and left unpowered. This is easy – most commercial turnouts come this way, so you just don't power the frog.

The downside? Short wheelbase locomotives and sound decoder equipped locomotives can cut out on a dead frog.

Sound locos will likely keep running, but the sound decoder cuts out and then goes through the prime mover startup sequence after crossing the frog. Annoying, but safe.

Switched polarity frogs: The frog is powered and its polarity gets switched with contacts triggered by the point direction. No more cutouts – that's the pro. The con? If you ever run the turnout when the points are thrown for the other route, you get a short.

As we've seen, a short on a DCC layout will cause that power district to shut down (annoying), or in the worst case, could melt equipment or trigger a fire.

Frog juicers: Monitors for a polarity mismatch when locomotive wheels cross onto the frog. If a mismatch is detected, the frog juicer toggles the polarity in milliseconds, preventing the short from ever developing. This is so fast you don't see any hesitation.

The pros: no more shorts at the turnout frog, ever. No mechanical contacts to install or maintain. The cons: frog juicers cost $12-16 per turnout in 2025, and if you're a purist about shorts, it does take a brief micro-short to trigger the device.

Also, the frog juicer disconnects frog polarity from point position, so you can approach a turnout from a route leg, cross the frog fine, but then hit points thrown against you and derail. About half the time, derailing on points can cause a short.

Nothing's perfect. Purists tell me it's still a short and they don't like that. But if you think about it in light of what Ken just experienced, they're essentially saying: "I don't like my layout

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having brief, controlled micro-shorts" which means they would rather get only full-voltage, full-amperage shorts that can damage boosters, burn equipment, or – as Ken discovered can ignite foam.

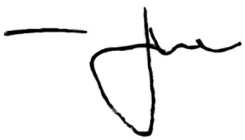
A frog juicer *can be* an important safety layer. It's not a compromise on purity – it's actually insurance against disaster.

The bottom line

Ken's near-loss can be our lesson learned. Beyond these three technical issues, don't forget the basics: don't leave trains running unattended, install smoke detectors in your layout room, and keep fire extinguishers accessible.

Ken's fire extinguishers saved his layout. Make sure you have them too.

The point about leaving trains run unattended is a biggie. Had Ken not done that, any derailment/short would have been discovered immediately and there would have been no fire. ☑



Last issue likes

Most liked articles in **November 2025 issue** of *MRH* are:

1st Publisher's Musings: A layout mission statement?
2nd Electrical Impulses: Bullet-proof turnouts
3rd Build a hydrocal structure kit

Most liked articles in **November 2025 issue** of *Running Extra* ...

1st Making small layouts more engaging
2nd Limited Modeler: Layout inspiration from old photos
3rd CP's Expanse Sub: A two turnout layout design

If you want more of this type article, then like the article!
Click the *Give us a like* or *comments* button on each article and press the like button on the article's forum page if you want to see more articles like these. ■

Best of the MRH FORUM THIS MONTH

Forum MRH mrhmag.com

Model Railroad Hobbyist | January 2026

Compiled by JOE FUGATE

Weathering hopper interiors

VIEW READER COMMENTS

MRH forum member **Deemiorgos** (Robert D.) asked the forum members for advice on how to weather the interior of a hopper car.

One member, **mesimpson** (Mark S.) posted the photo above showing how he weathered the interior on some of his hoppers. The basic idea is to paint the interior a dull steel metallic color and then dirty it up with some dirt, grime, and rust. We have to say it looks pretty nice.

For more on weathering hopper interiors, visit the thread!

View the full thread on the MRH website

▶ *MRH'S* MONTHLY GREAT MODELER POSTS

1. *MRH* forum member **thewizard1** (Charles D.) found some "halloween tree" models at Walmart and he used them as armatures for large trees.

Modeling big trees

MRH forum member **thewizard1** (Charles D.) says:

"... spotted [some model trees] in the Halloween section at Walmart, cost $11.99. I feel they are too large, so I pulled the branches out. I got 5 of them ... that's 5 trees for the cost of just over $2 each, not bad.

"I model HO, so these trees are about 60 to 75 foot tall on average. Here is a shot of just the trees without the smaller branches and foliage [1]."

Charles then shows how he fills out these tree armatures with smaller branches using supertree fragments, then adds foliage.

See the forum for more on using making use of these big trees.

View the full thread on the MRH website

2. *MRH* forum member modeler **Ivan I** posted this photo on his layout build journal of the progress he's making with his Los Angelas port shelf layout.

Pacific Harbor Lines shelf layout

MRH forum member **Ivan I** has a layout build journal on his port shelf layout he's building. Ivan says:

"Ten years have gone by and numerous designs have been dreamt up, but none of them stuck – except for this one. Join me, as I stumble along (often blindly) in my journey to build a modular N Scale shelf layout. I'm looking at the Port of Long Beach / Los Angeles area as my prototype inspiration, focusing on the Pacific Harbor Line operations around 2005-2010."

See the full thread for Ivan's layout build progress.

View the full thread on the *MRH* website

Recent photo fun thread

These images posted on a recent *MRH* forum Photo Fun thread show some fun railfan level layout views.

View list of recent Photo Fun threads

3. *MRH* forum member **Mountaingoatgreg** (MRH author Greg Baker) says of this photo, "Under threatening October skies an SP&S transfer from Portland passes by the Willbridge TO office on its way to Vancouver WA." We have to compliment Greg on some great modeling drama with this scene!

4. Greg also posted this photo. "A few years later and after the merger, the BN 4011 former SP&S 101 passes the Willbridge TO office heading towards Portland. The unit is starting to look kinda grungy, the BN would repaint this units in the early 1970's so it looks like this photo taken just prior to repaint. " ☑

Model Railroad Hobbyist | January 2026

Introduction to Track Warrants, part 3

In this installment on track warrants, let's discuss three common track warrant examples drawn from op sessions on my Siskiyou Line. These examples show how to add a fun new level of train movement realism with track warrants.

Please refer to the track warrant form in part 2 – these warrants will make the most sense if you understand that form.

Example 1: Standard "Proceed From-To" warrant

```
TRACK WARRANT NO. 15
TO: SP 7320 in Eugene
CHECK BOX 2, PROCEED FROM EUGENE TO ROSEBURG
```

This is the most common warrant type the dispatcher issued on my Siskiyou Line. It authorizes through movement in one direction only between the named points. The crew can use main track and the first turnout of passing sidings at named points along the route, but they cannot reverse direction or work industries.

With a "Proceed" warrant, the caboose can only move forward toward the destination; reversing direction is not permitted.

Example 2: "Work Between" warrant for locals

```
TRACK WARRANT NO. 22
TO: SP 4408 in Roseburg
CHECK BOX 4, WORK BETWEEN ROSEBURG AND RICE HILL
```

This authorizes bidirectional movement within the specified limits, making it perfect for locals switching industries. The critical difference from Example 1 is that "Work Between" authorizes bidirectional movement – your caboose can move in either direction within the limits.

The crew can go back and forth as needed to spot and pull cars at various industries, but they cannot leave the specified limits without obtaining a new warrant.

This warrant type adds train operation flexibility while still maintaining dispatcher control.

Example 3: "Not in Effect Until" warrant for meets

```
TRACK WARRANT NO. 18
TO: SSW 7690 Roseburg
CHECK BOX 2, PROCEED FROM ROSEBURG TO RICE HILL
CHECK BOX 6, NOT IN EFFECT UNTIL AFTER THE ARRIVAL OF SSW 9058
CHECK BOX 9, CLEAR MAIN AT LAST NAMED POINT
```

This puts one train on hold until another arrives. What's great about this kind of warrant is it allows the dispatcher to plan ahead and issue warrants in advance that only get triggered by a specific traffic event – in this case, the arrival of SSW 9058.

Once SSW 7690's crew observes SSW 9058 arriving at Roseburg, this warrant becomes effective and the waiting train can proceed to Rice Hill and clear the main for the opposing movement. The "CLEAR MAIN AT LAST NAMED POINT" line ensures the train takes the siding and leaves the main clear for oncoming traffic.

These three warrant types cover many of the situations you'll encounter on your model railroad and add fun realism to operations sessions by replicating actual railroad dispatching practices from the era (1980s). ☑

WHAT'S NEAT column

Model Railroad Hobbyist | January 2026

Ken Patterson covers this month:

VIEW READER COMMENTS

- N Scale Siemens Venture Cars from Bachmann
- Bachmann's Siemens Venture VIA Rail cab car
- BLI diecast HO scale SD70ACE
- Layout construction: Rebuilding the layout part 2

click to play video

PHOTOS AND VIDEO OF SUPERB MODELS

See this month's publisher editorial for an update on Ken's layout. This month Ken continues working on updating his layout. But first, Ken shows off the first examples of the N scale Siemens Venture coaches and the HO scale Venture VIA Rail cab car from Bachmann, followed by two new diecast metal HO scale SD70ACE models from Broadway Limited.

Bachmann's N scale Siemens Venture cars and HO scale cab car

1. Bachmann is releasing its Siemens Venture modern passenger cars in N scale. This is the VIA Rail version.

2. The cars will also be available in this fetching Amtrak Midwest paint scheme. Four coaches will be available in Amtrak Midwest and three coaches, a business car, and a cab car will be available in VIA Rail.

3. In HO scale, Bachmann provided Ken with the Venture Cab Car to complete his VIA Rail Venture train set.
Info: shop.bachmanntrains.com

Diecast metal HO scale SD70ACE locos from Broadway Limited

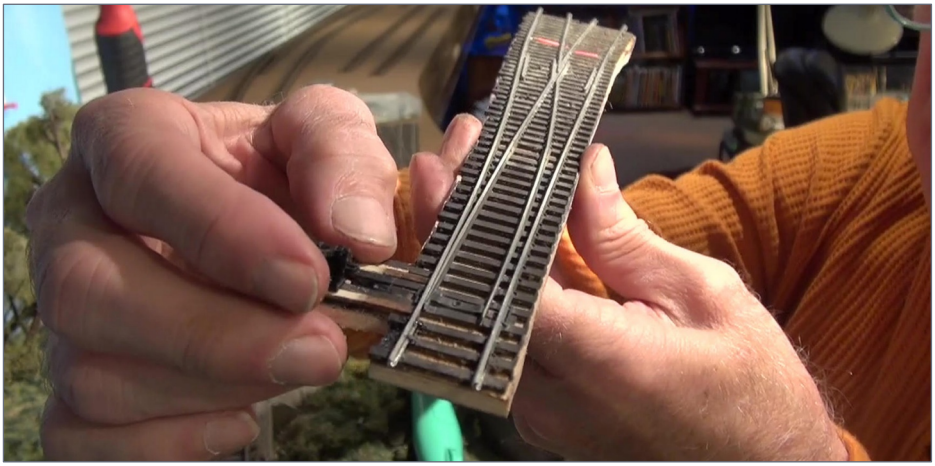
4. Broadway Limited has released a second run of the diecast metal HO scale EMD SD70ACE locomotive. Seen here in Kansas City Southern's Southern Belle paint scheme, it is also available in Ferromex, Norfolk Southern, Union Pacific Building America, #1111 Powered by our People, Katy Heritage, and Western Pacific Heritage.

VIEW READER COMMENTS

5. Available exclusively through Hobbytyme Distributors are the Norfolk Southern Heritage units decorated for Virginian, Wabash, Central of New Jersey, and Illinois Terminal. Available exclusively through Trainworld are a Pennsylvania DGLE five-stripe fantasy scheme, a USAAF 6418 Gabreski fantasy scheme, and the Norfolk Southern Heritage unit #1080, Delaware & Hudson.
Info: broadway-limited.com
Info: www.hobbytyme.com (See a Dealer)
Info: www.trainworld.com

Layout (re)construction part 2

6. With the basic module completed in Part 1, Ken starts work in Part 2 by deciding to install a #8 turnout on the adjacent Kimswick diorama, where it will lead into both the main track (near) and a siding (far).



7. After modifying the turnout to his personal specifications – including adding power jumpers (the red wires on the far end), cutting an isolating gap beyond the frog, and cutting some of the tie webbing so he could curve the turnout slightly, Ken mounted it on a piece of oak plywood and added a Caboose Industries N scale manual throw before installing it on the layout.

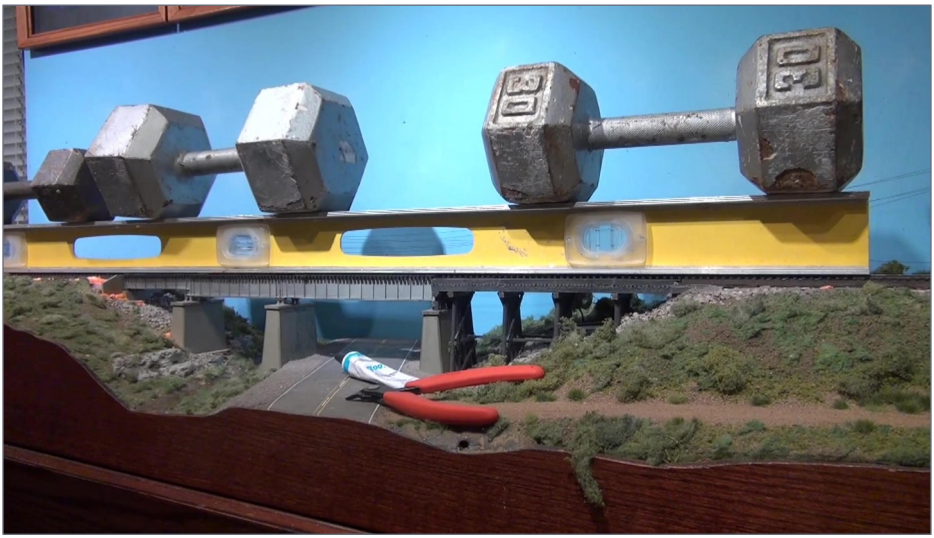
8. Using a hot-wire foam cutter to excavate the area for the turnout, Ken also checks the depth of the cuts he is making to ensure that the plywood-mounted turnout will sit level.

9. Ken's technique for ensuring level track when using the expanding Great Stuff Pro foam adhesive to glue the track to the foam subroadbed is to place a level across the track being installed and the adjacent sections and then put 15-40 pounds of weight on the level. The track stays level, and the foam expands out around the joints, where it can be trimmed as needed.

10. While the Kimswick end of the module is setting up and curing, Ken goes to the other end to re-level the bridge, and fill in a large hole created when the end of the bridge was moved to eliminate a curve. Most of the bridge bearings on top of the piers needed to be shimmed.

11. Walthers Goo was applied to the tops of the bearings, with a level and 15-lb. dumbbell holding everything level while the Goo cured.

12. After the bridge was solidly glued down, a turnout at this end of the module needed to be installed. Ken decided to mount it on plywood as well. Additionally, the deck girder end of the bridge came with ties installed, so the ties had to be removed from the end of the length of Micro Engineering flex track that was used on the ballasted deck. The rails for the deck girder would need to be properly gauged and glued to the ties.

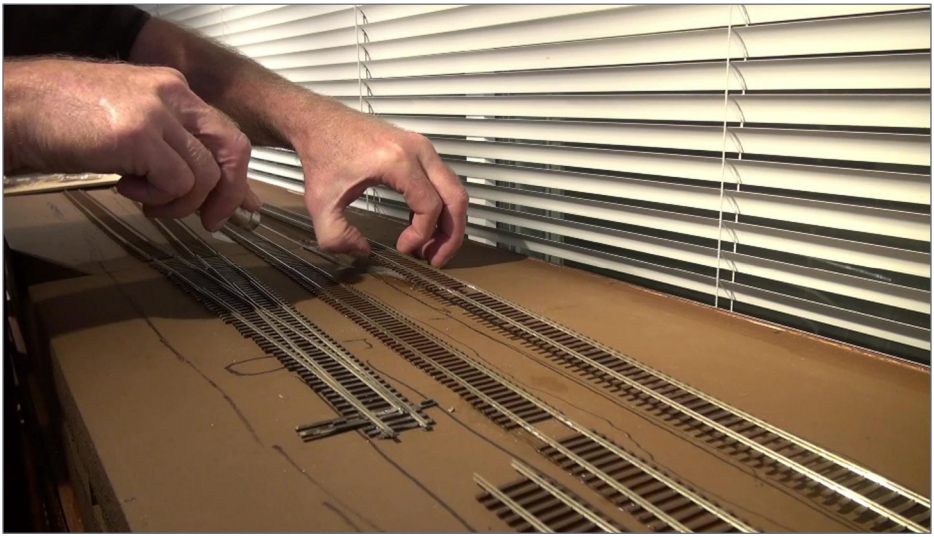


13. To keep everything level while the Great Stuff Pro under the turnout and the end of the deck girder cured, a longer level was employed with 15-, 30-, and 40-pound dumbbells placed on it.

14. With the turnout securely in place, Ken used Dap UltraClear caulk to secure the end of the flex track that still has ties into place. UltraClear has a good working time, is flexible, and is paintable, which is useful when ballasting.

15. DAP Weldwood Contact Cement is dabbed onto the end of the flex track that does not have ties attached to it.

16. With the ends of the flex track held in position with rail joiners, three-point track gauges held the middle portion of the track in gauge while the contact cement cured.



17. With the bridge complete, Ken laid the two through tracks on the rebuilt module, taking care to get the smooth, wide curve he established as a goal.

18. With the mainline of the layout back in place, Ken could do what he loves the most – run trains over it. A pair of Big Boys had the honor of leading the first train across the newly rebuilt sections of the layout.

Click on the video link at the beginning of the article to see the full video, including the steps involved in modifying turnouts, fixing the bridge, and ensuring that the track is laid perfectly flat. Ken also has more views of the N and HO scale Siemens Venture cars from Bachmann and the EMD SD70ACEs from BLI. ☑

Kato SD40 DCC conversion

Electrical Impulses

Model Railroad Hobbyist | January 2026

VIEW READER COMMENTS

PETER RANDERSON ADDS DCC AND FANCY LIGHTING TO HIS DIESEL LOCO ...

I PICKED UP A SECOND-HAND HO SCALE KATO SD40, and like many older Kato locomotives, it had potential track pickup issues that needed addressing. I looked online for Kato conversion guidance before starting.

I divided this project into two phases: Phase 1 covers mechanical tune-up and basic DCC installation with factory lighting. Phase 2 involves extensive lighting modifications including ditch lights.

What follows is a detailed account of Phase 1, covering everything from initial testing through to a fully operational DC-equipped locomotive.

PREREQUISITES AND SKILLS

This conversion project requires a moderate technical skill level . While not overly complex, it demands specific capabilities that include basic soldering experience. Familiarity with decoder installation is helpful but not mandatory – I'll walk you through each step.

Phase 2 involves more advanced SMD soldering, so either have prior experience or be prepared to practice on scrap materials. You'll need to be comfortable disassembling locomotives, understand basic DCC operational principles, and know how to use a multimeter for continuity and voltage testing.

Don't be intimidated – with patience, careful work, and a willingness to learn, most modelers can successfully complete this conversion.

THE 30-MINUTE-A-DAY DOCTRINE

On this project, I relied on my doctrine of spending 30 minutes a day in my train room to keep it moving forward. It is amazing what can be accomplished with just those few minutes each day. Even when life gets busy, finding that half hour makes steady progress possible, and before you know it, a complex project is complete.

PHASE 1: TUNE-UP AND BASIC DCC CONVERSION

Step 1: Initial DC testing and body removal

I tested the locomotive on DC track at various speeds. The motor ran smoothly, but showed slight hesitation at very low

1. The project locomotive: Unmodified Kato HO SD40 in CSX livery, shown in its original box prior to decoder installation.

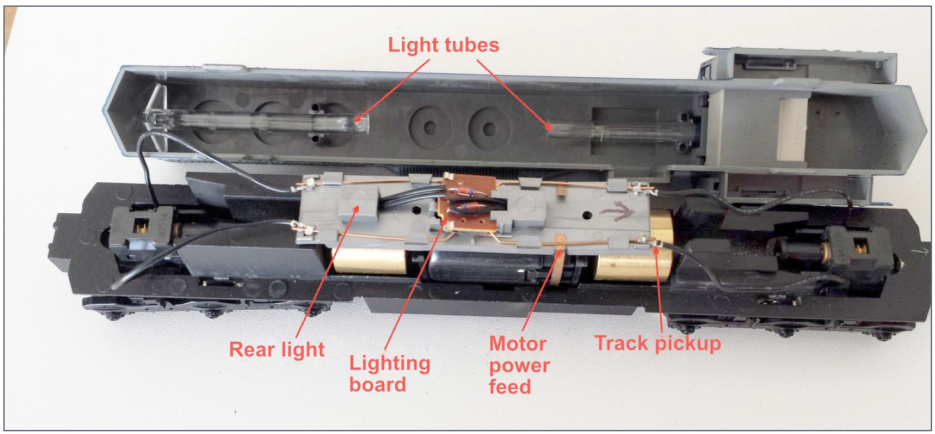
speeds – typical pickup issues for older Katos. Headlights worked but were dim at low speeds due to incandescent bulbs.

Disassembly procedure:

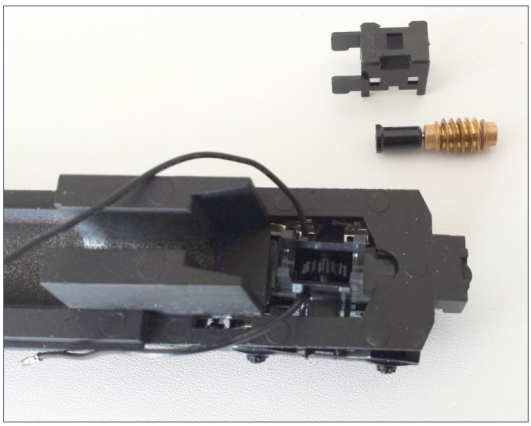
1. Remove handrails and horn assembly
2. Remove coupler mounting screws
3. Remove shell by pressing inward on body sides while lifting upward, starting at the rear. Work forward until clips release
4. Remove two screws holding the wiring board
5. Separate fuel tank halves and remove mounting screws
6. Lift out motor and flywheel assembly
7. Release worm drive covers using a small flat-blade screwdriver to pry plastic lugs outward

Factory configuration: Plastic circuit board mounted above motor with parallel bus wires, bronze strips contacting motor terminals, and wires running to truck pickup strips.

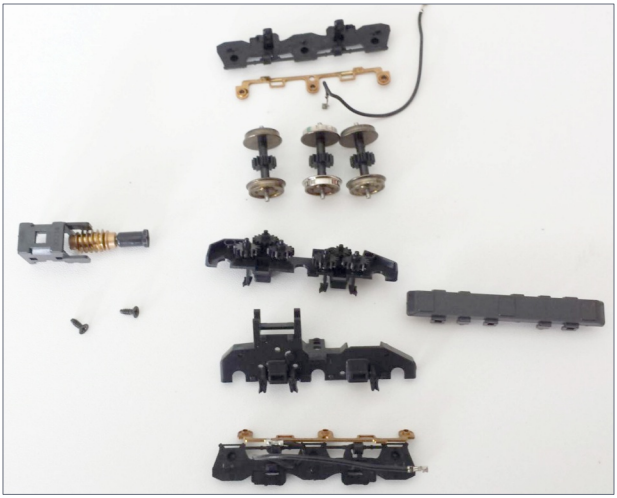
Planned modifications: Replace plastic board with purpose-built circuit board, replace bronze motor strips with wire leads, and rework lighting in Phase 2. (We'll build the new wiring board in Step 4, and tackle the full lighting install in Phase 2.)



2. Factory Kato SD40 shell removed to reveal the standard light board, light tubes, rear light, motor connections, and track pickup arrangements before DCC installation.



3. Beginning truck disassembly on the Kato SD40: removing the truck clip and worm gear assembly so the power truck can be separated from the chassis.



4. The Kato SD40 power truck fully removed and disassembled, with worm gear, wheelsets, side frames, and pickup strips laid out for inspection and cleaning.

STEP 2: TRUCK DISASSEMBLY AND TUNE-UP

Release the worm drive covers using a small flat-blade screwdriver to pry the plastic lugs outward. Work on one truck at a time to maintain a reference for reassembly.

The bottom cover plate is held by six plastic lugs around its perimeter. Release each lug with a small screwdriver. Remove the side frames by gripping firmly and pulling straight out – they bring the brass pickup plates with them.

Separate the brass pickup plates from the truck side frames. The wires connecting to the pickup plates use push-fit lugs that can work loose over time. Soldering the connection will prevent this.

To avoid melting the plastic insulation, use flux, set the solder tip to at least 650°F, and work quickly. Using a metal helping hand as a heat sink can also help divert excess heat from the plastic.

Remove all gears, and clean away old grease using paper towels and cotton swabs soaked with isopropyl alcohol. Apply Nano Oil sparingly to gear tooth surfaces, axle bearings, and worm gears – just enough for a thin film between moving parts. Avoid using excess oil as it will sling off and make a mess, or worse, find its way onto your wheel treads and cause traction problems.

STEP 3: WHEEL POLISHING

Polishing the wheel treads improves electrical conductivity and reduces dirt accumulation. I use 2000-grit wet/dry sandpaper followed by buffing with a leather strip and Veritas honing compound [5].

Mount each wheelset in a lathe, drill press, or hand drill. Cut the sandpaper into 1/8″ strips, wet it, and hold it against the

5. Blade honing compound applied to a leather strip used to clean and burnish the Kato SD40's wheel treads See [6].

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spinning tread with light pressure for about 30 seconds per wheel. Then apply honing compound to a leather strip and buff the tread to a smooth finish [6].

Only polish the wheel closest to the chuck [6], then reverse the wheelset. Polishing the far wheel risks bending the axle.

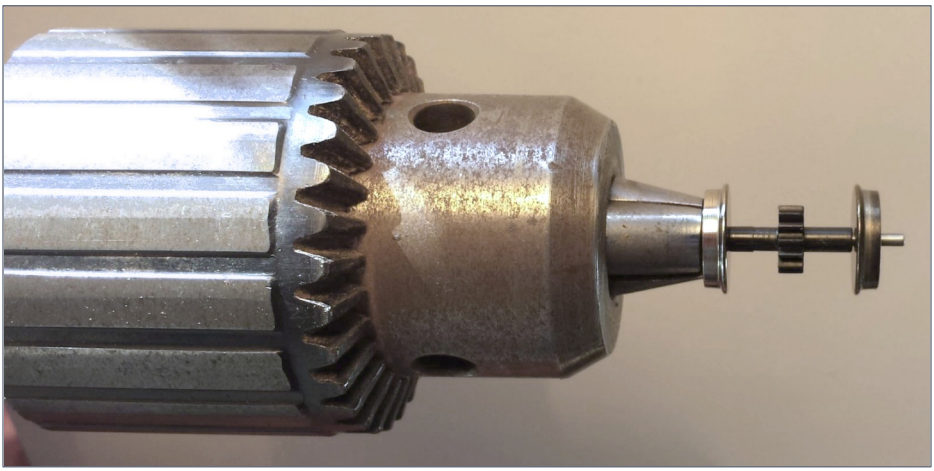
I repeated this for all wheelsets – about an hour total. The result is uniformly smooth treads that make optimal rail contact.

I reassembled the first truck, making sure all gears meshed properly, and that everything moved freely.

I repeated the entire process with the second truck. By the time I was done, both trucks were running like new.

PAY ATTENTION TO THOSE PICKUP PLATES

When reassembling the trucks, take care that the phosphor bronze pickup plates are correctly oriented. The plates have brushes for each axle bearing point that protrude on one side.



6. Using a power drill as a mini lathe: I chucked-up a wheelset, and polished the wheel tread nearest the chuck to a bright, clean finish.

These protrusions should be pointed outward so they nest into the truck side frame.'

With the pickup plates properly oriented, the wheelsets should have side-to-side play to allow the locomotive to negotiate tight curves. Reversing the orientation will restrict this play and cause poor tracking. I discovered in testing that I had mistakenly oriented the pickup plates incorrectly, leading to derailments on tight curves.

STEP 4: REPLACEMENT WIRING BOARD

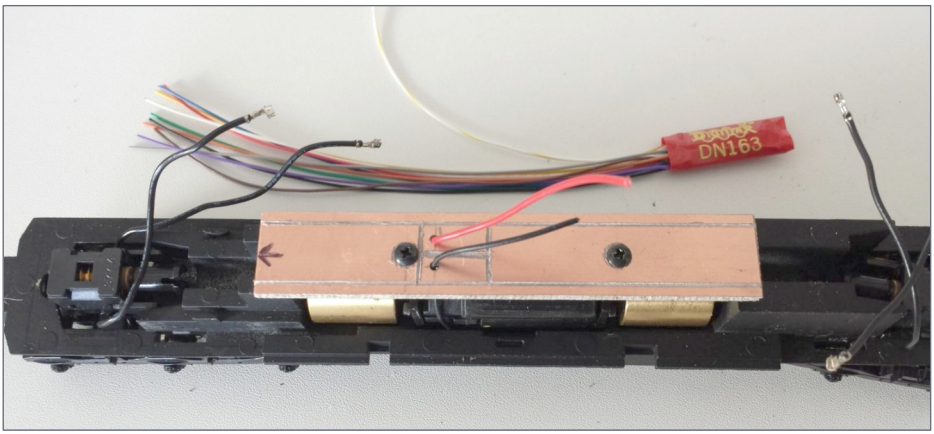
With the trucks tuned up and the wheels polished, it was time to tackle the electrical system. The first step was removing those bronze pickup strips from the motor. I used a pair of flush-cutting pliers to snip them off as close to the motor as possible, then cleaned up the remaining bits with a file.

7. This pickup plate is held for soldering. The protrusions on the right side of the plate should nest into the truck side frame.

Now I needed to attach proper wire leads to the motor. The motor has brush covers on each end, and these are where I'd solder my wires. I cut two pieces of wire – orange for one side, gray for the other – and stripped about 1/8″ of insulation from each end.

CRITICAL – SPRING UNDER TENSION: When you remove the motor brush covers, there's a spring underneath that will launch across your workspace if you're not careful. Work slowly and keep one finger on the brush cover as you loosen it to control the spring's release. Trust me – you don't want to spend 20 minutes searching your floor for a tiny spring.

I tinned the wire ends and the brush covers with a small amount of solder, then soldered the wires in place. I made sure to get good mechanical connections – these wires will flex slightly every time the motor runs, so the solder joints need to be solid.



8. A scratchbuilt copper-clad 'motherboard' replaces the stock light board, providing clean mounting and wiring points for the DCC decoder. The red and black wires on the board center go to the motor – by NMRA standards, they should be orange and gray. I later fixed this [9].

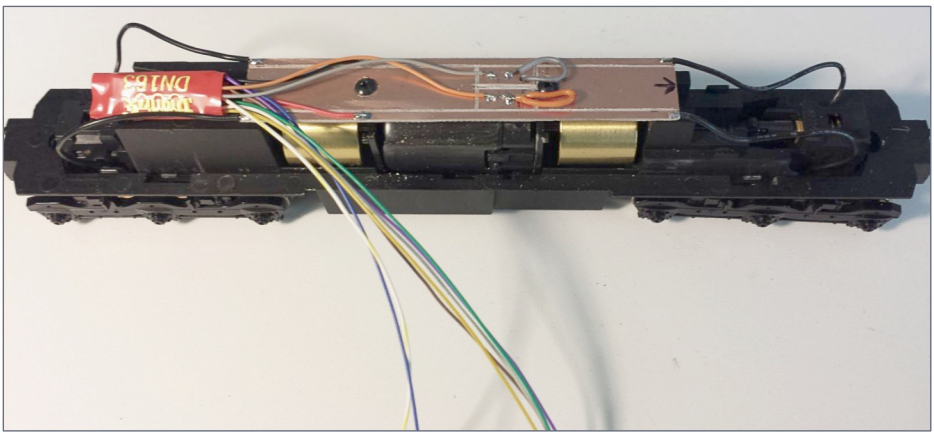
J. Regier

AVOID SOLDERING TO THE MOTOR BRUSH COVERS

As the author states, soldering the motor wires directly to the brush covers is risky. Not only can the brush springs fly out into the great unknown, but it's not always easy to reassemble the brush system. In my experience, tampering with the brush cover has only led to frustration.

Fortunately, this risk is also quite unnecessary. Kato motors are equipped with bronze strips that connect it to the light board – refer to [2]. Those strips are easily cut short with nipper pliers.

Cut the bronze strips down to about ¼", and solder your wires to the brass strip nubs. Sheathe and insulate the solder joint and the nubs with shrink tubing. This creates a solid, durable connection to the motor, without risk of destroying it.



9. Digitrax DN163 decoder wired to the DIY motherboard on the chassis, with the orange and gray motor lead wire colors corrected.

For the circuit board, I cut single-sided copper-clad PC board to fit above the motor. After smoothing the edges with a file, I cleaned the copper surface with isopropyl alcohol. I marked the board with arrows pointing toward the locomotive's front to maintain proper orientation.

I drilled holes for the motor leads, and soldered them to copper pads on the top side. Using a Dremel with a cutting disc, I scored the copper to create two electrically isolated tracks – one for right-rail pickup, one for left-rail pickup. I verified isolation with a multimeter, then soldered the truck pickup wires to their respective tracks, maintaining front-to-back orient

I chose a Digitrax DN163 six-function decoder (non-sound) for its compact size and lighting control options. Rather than hardwiring the decoder immediately, I soldered short wire leads to the circuit board pads – the black truck leads on each side for track power, orange and gray for motor connections – leaving me all set later for Phase 2 lighting work [9]. I left all wires slightly longer than needed to allow for future modifications.

I placed the bare chassis on the test track and tested it. The locomotive crawled smoothly at speed step 1, and accelerated evenly through the range. I ran it for 10 minutes in both directions, testing all functions. The mechanical tune-up eliminated the previous hesitation, and the factory headlights (F0 function) worked correctly, though they remained dim by modern standards [10].

The beauty of the two-phase approach is that I'm not stuck waiting to run this locomotive. It's already earning its keep on the layout, pulling freight trains and generally proving that the $54 I spent at that train show was money well spent.

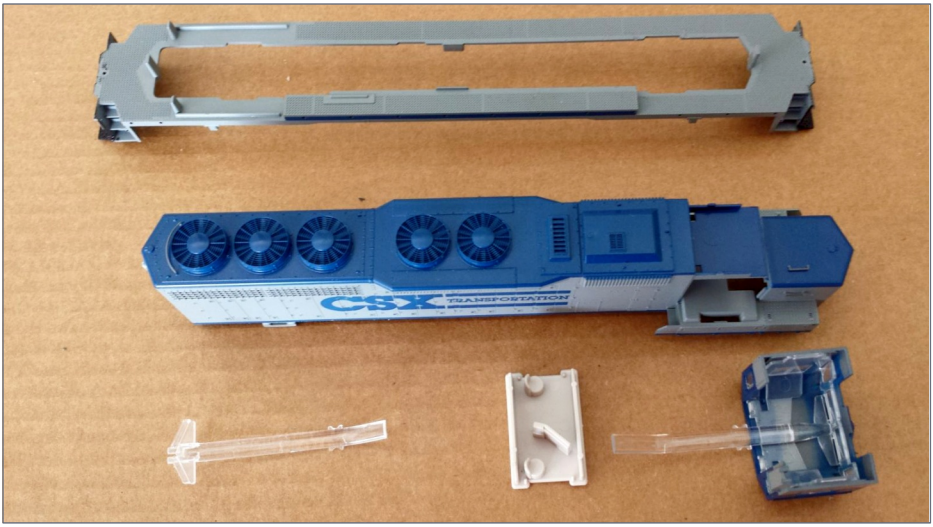
Next comes my Phase 2 lighting function upgrades, where I detail the complete lighting overhaul. That's where this project really gets interesting as I figure out how to route all those function wires inside an HO scale locomotive shell.

PHASE 2: LIGHTING MODIFICATIONS

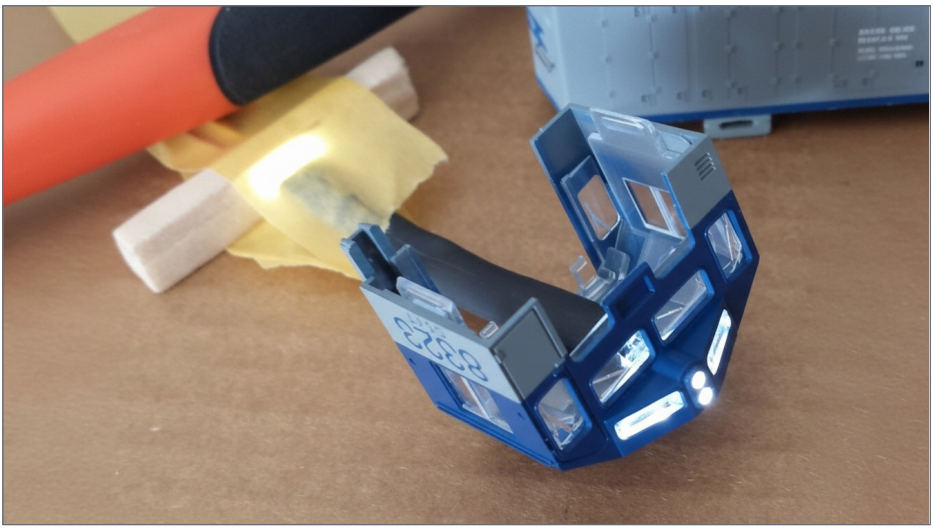
I wanted the locomotive lighting functions to include working front and rear headlights, front and rear ditch lights, a cab light, a rotating beacon on the roof, and lit number boards.

The factory setup used molded light bars illuminated by two grain-of-wheat bulbs mounted centrally on the wiring board. This design wouldn't provide proper directional lighting control.

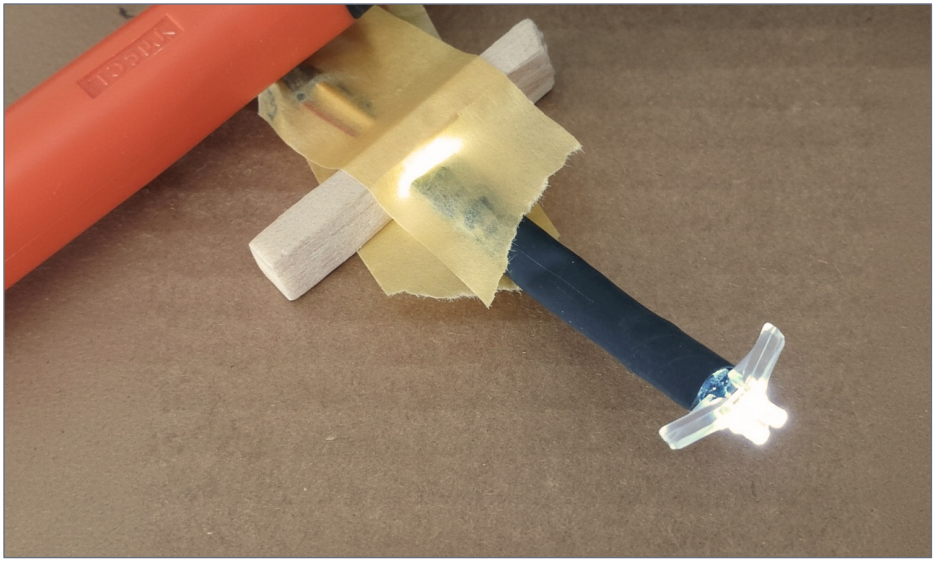
10. Test-running the locomotive after the decoder installation.



11. To begin Phase 2, I dismantled the Kato SD40 body into its major components: walkway, long hood, rear clear lighting guide, cab interior, and cab with its clear light guide.



12. Cab light tube wrapped in shrink tubing and test-lit on the bench to check brightness, and to plan the final lighting solution.



13. A bench-test of the modified rear light tube, encased in black tubing to serve as a light-tight shroud.

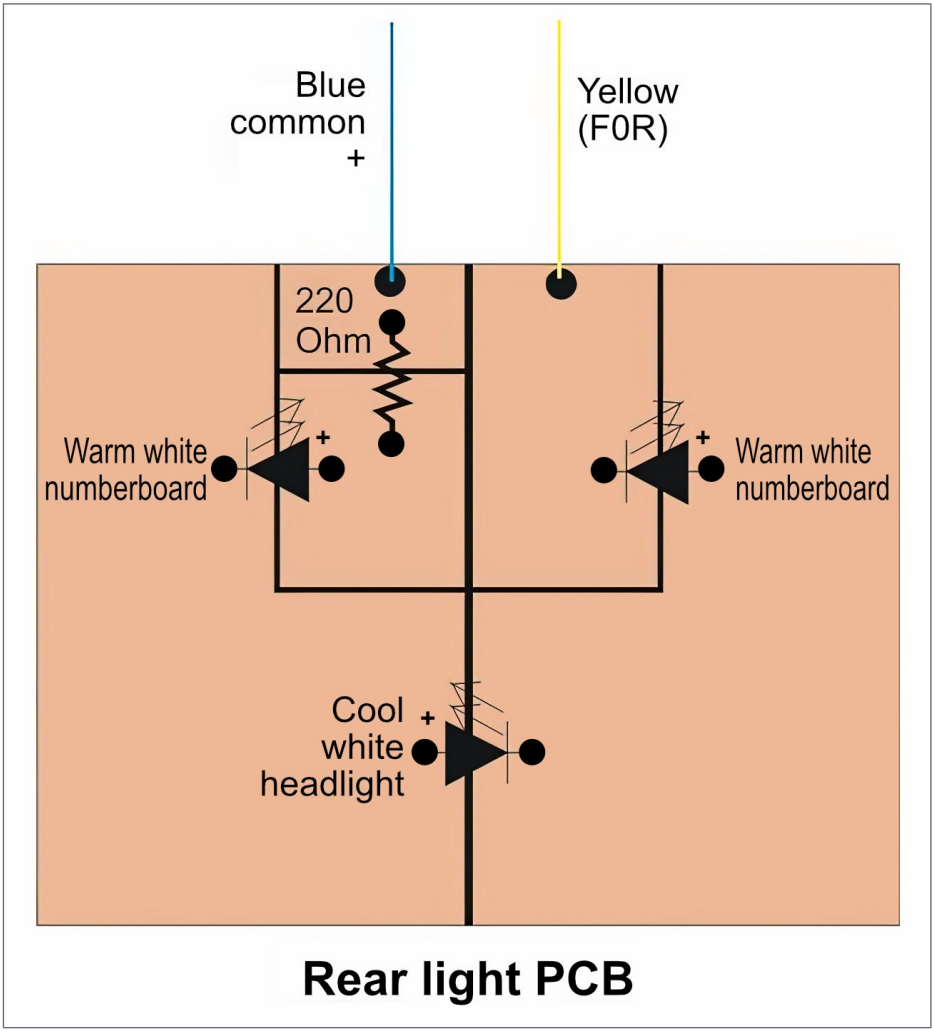
Testing the existing light tubes with LEDs [12, 13] revealed that the number boards had no molded numbers, and would need printed labels. Using one bulb for both number boards and headlights creates compromises in both areas, so I planned separate LEDs: two warm-white for the number boards and one white for headlights in each direction.

The rear showed most light reaching the headlamps with minimal spillover to number boards, confirming the separate LED approach [13]. A yellow LED would light the cab interior.

REAR LIGHTING CIRCUIT BOARD DESIGN AND CONSTRUCTION

On the rear light cluster, I used two warm-white LEDs for the number boards and one bright-white LED for the headlamp. If I wire these in series, then all I need is a single 220-ohm resistor

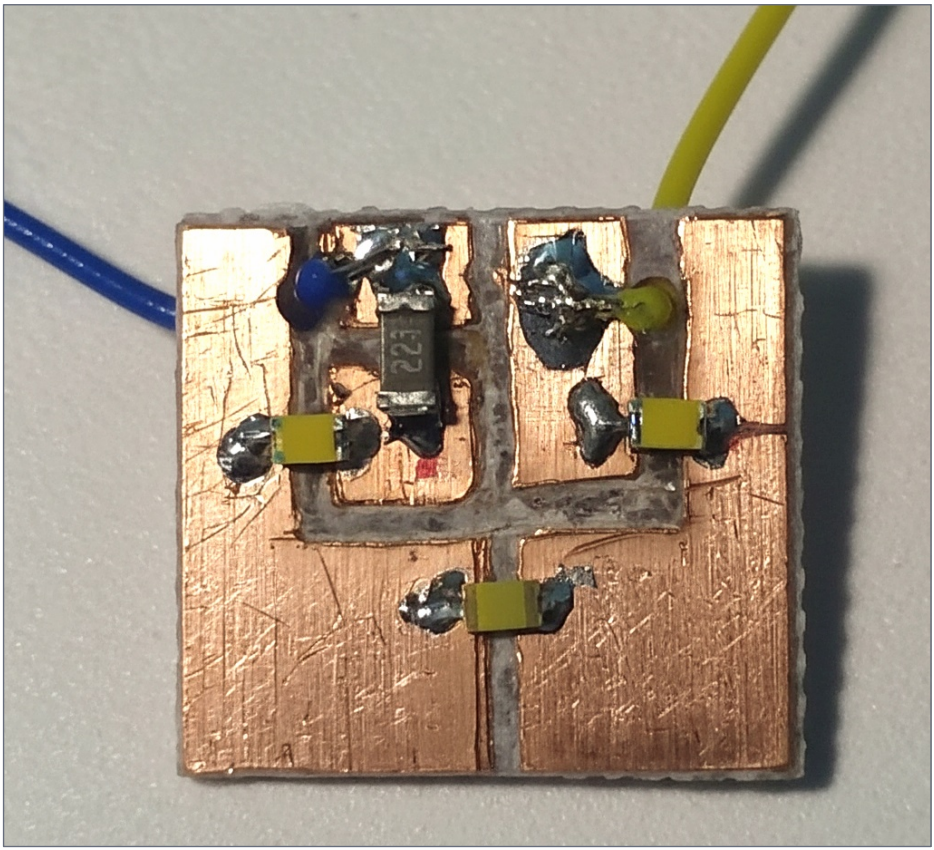
with the only wires to the decoder being the blue common and the yellow F0R lead. The circuit board design [14] is the 3/4″ width of the body shell, and about 5/8″ high.



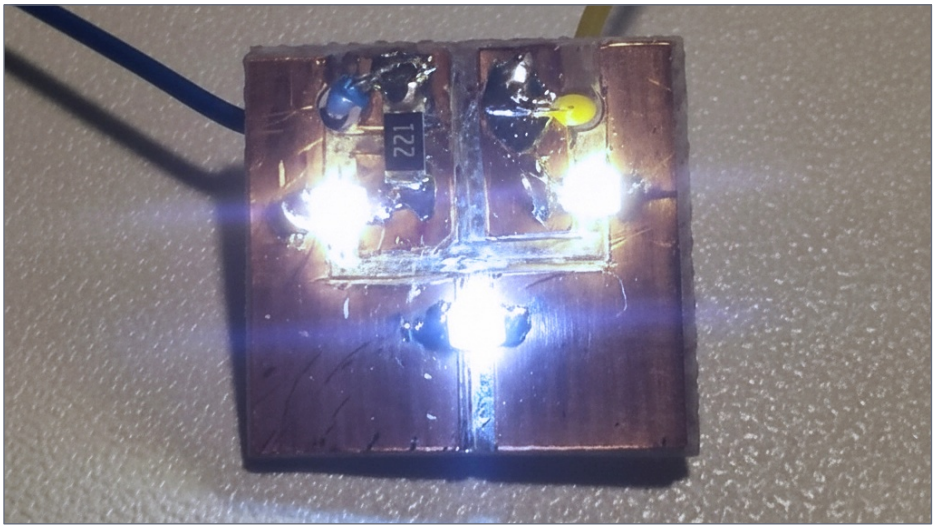
14. Using copper-clad board and cutting it into regions with a cutoff disk, I can wire it as shown here for the headlights, bridging each pad area to "wire" it. Also see [15, 16].

The thick black lines show where the copper surface will be ground off with a cutoff disk to form the necessary soldering pads. After soldering the components onto the rear PCB [15], I tested the board [16]. Success!

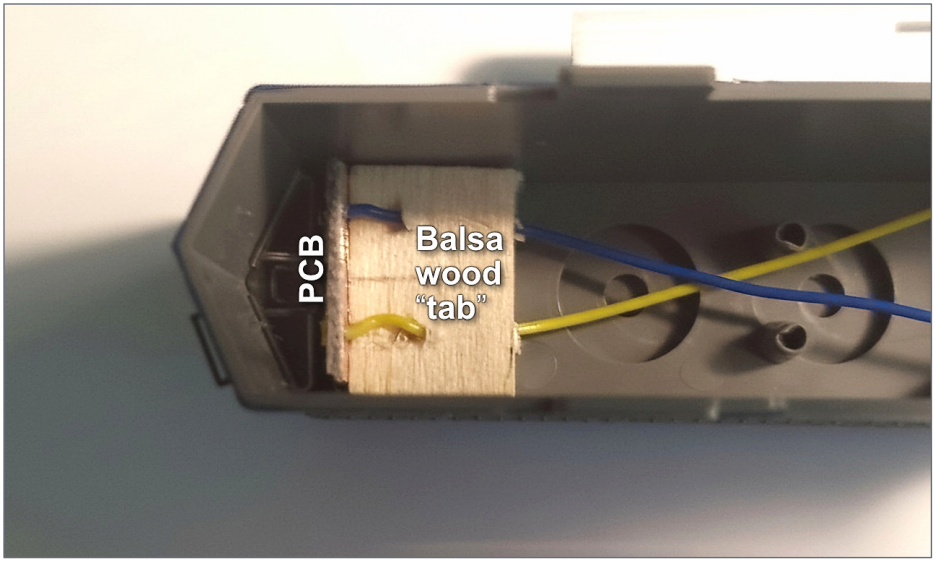
I cut 99% of the rear light tube off, inserted what remained into the shell. Then I inserted the PCB board with the LEDs upright behind this casting [17] and glued a small balsa board stay behind the PCB. I tested it with power, and it looked good [18].



15. This is the actual wired copper-clad board using the wiring diagram in [13] as a guide for soldering the components.



16. The same board as [15] with power applied to test it.



17. Custom rear-end lighting PCB installed – a balsa wood mounting "stay" glued behind precisely aligns the board headlight and number board LEDs with their respective light tube feeds.

CAB LIGHTING CIRCUIT BOARD DESIGN AND CONSTRUCTION

The cab headlight and number board LED cluster would be mounted off its custom PCB in a series array, connected with fine armature wire. The rotating beacon LED leads would come down through the roof and be soldered into corresponding holes in the PC board.

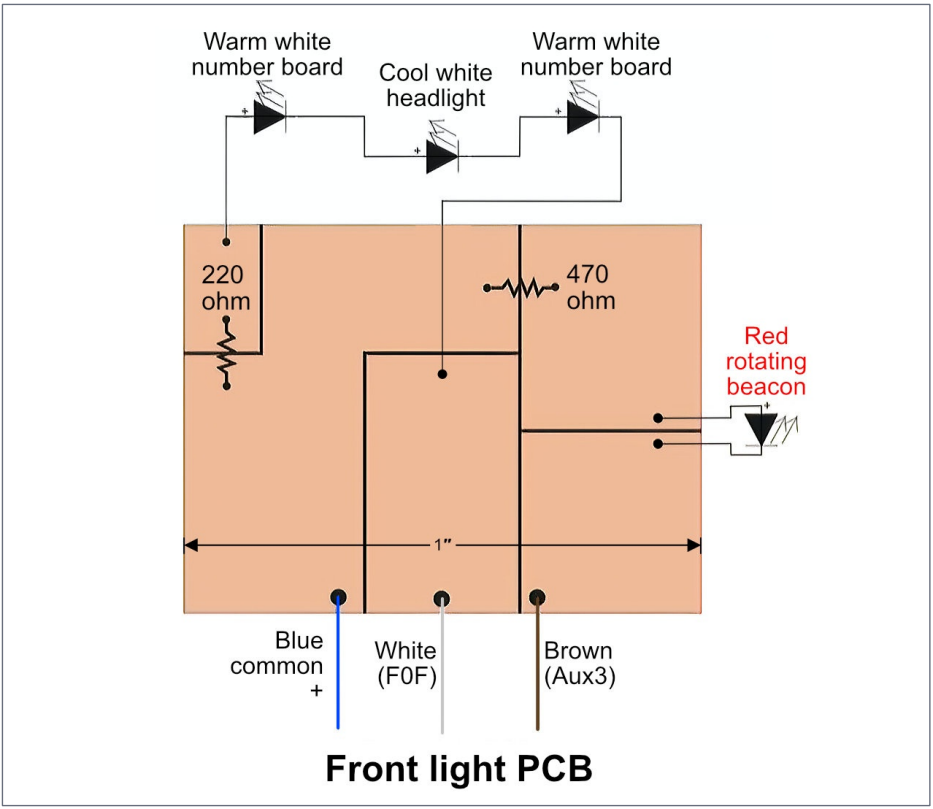
The three leads to the decoder would feed straight through a convenient hole at the rear of the cab. I also planned to mount a

18. The completed rear hood with the LED headlights and number boards showing zero light bleed through the hood.

yellow LED in the back of the cab area, but that would be on a separate circuit.

I cut through the original light tube, and drilled a hole for the headlight LED. The number board LEDs would be mounted on either side, and the series array would be bundled with an armature wire to keep everything neat and compact. I knew I'd need to apply black paint to various parts of the clear plastic to minimize light bleed between the lighting functions.

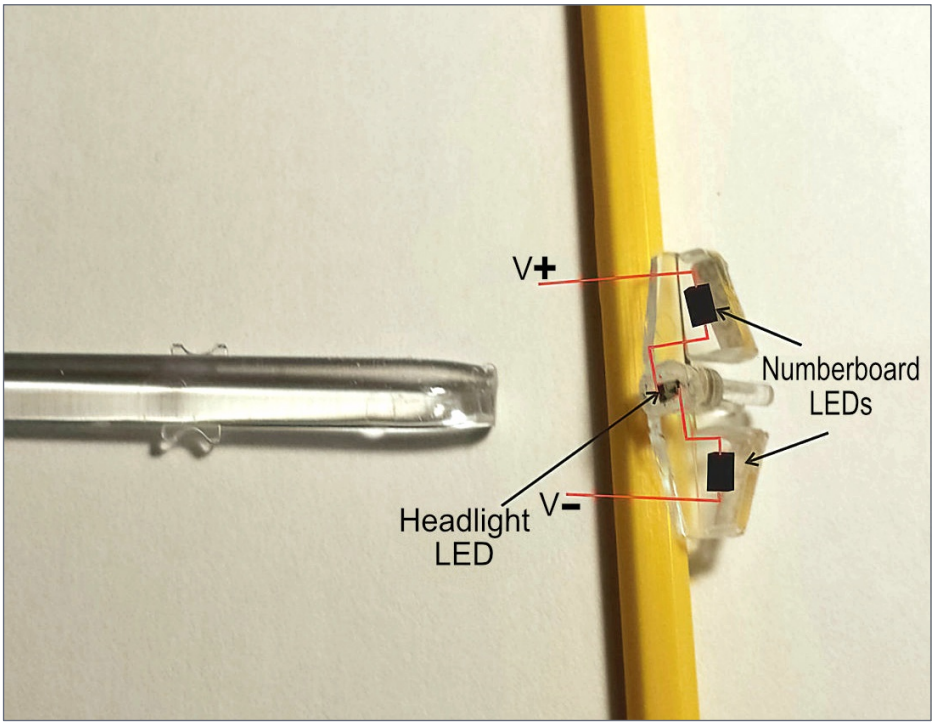
I'd also need to put some sort of filler around the number board LEDs for the same purpose. I'd seen British modelers use a



19. Copper-clad board cutting guide for the front LEDs for the headlight and the two number boards.

black plumber's putty for this – it's about the same consistency as Blue Tack, but stays malleable and can be easily molded and removed. Unfortunately, I couldn't source a similar product here in New Zealand, so I'd have to make do with careful painting and positioning.

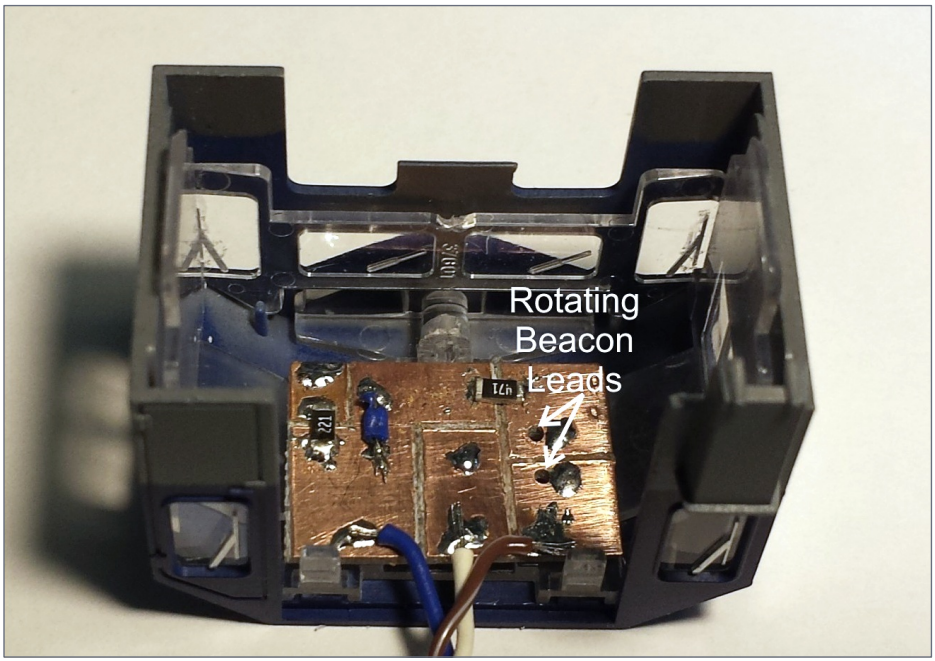
The PC board fit temporarily in place with the two resistors and three decoder leads installed. I placed solder spots for the armature wire feeds from the headlight/number board array and the rotating beacon LED wires. This would require some careful soldering when the board was permanently fitted, but I was confident I could manage it.



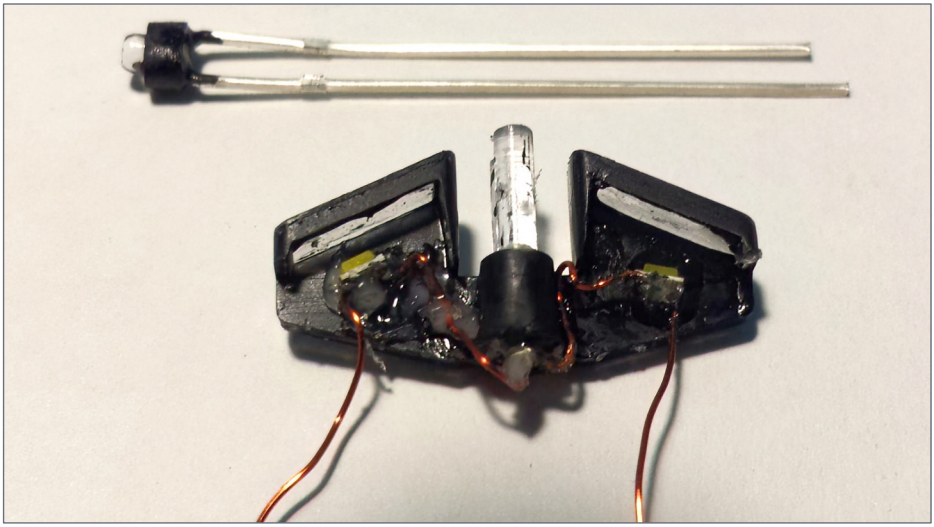
20. Actual placement and wiring of the SMD LEDs for the front lighting.

I wired the two warm-white LEDs for the number boards and one bright-white for the headlamp, then glued these into position on the remains of the Kato clear headlight molding. The 1/8″ LED for the rotating beacon was prepared separately – I still needed to find a suitable casting for it, but at least the LED was ready to go.

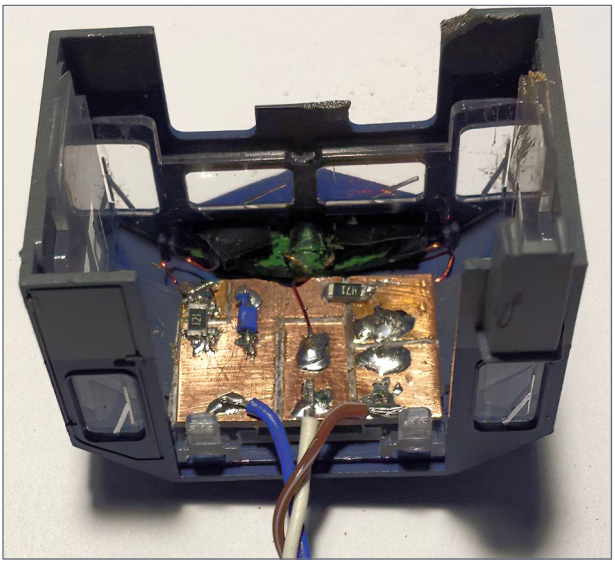
The molding and PCB were then refitted to the cab. I fed the rotating beacon LED leads through the cab roof and the PCB, then soldered all the light leads to the board. The soldering wasn't the prettiest job in the world – working in such a confined space never produces show-quality results – so I covered it with a piece of plastic tape. This served double duty: It hid the mess and prevented light from leaking to the wrong places.



21. The DIY headlight/number board light PCB placed in the cab roof, with the blue, white, and brown decoder wires feeding the board. Headlight and number board clear plastic block not yet installed.

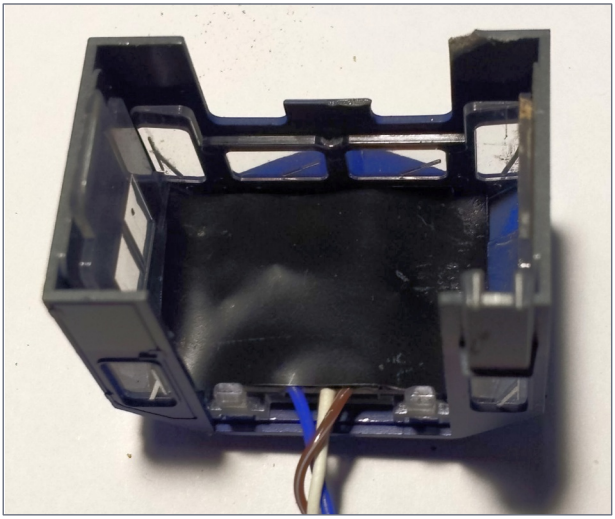


22. The cab rooftop rotating beacon (top), and the clear headlight/number board casting fitted with SMD LEDs (bottom). The black paint is to reduce light leaks.

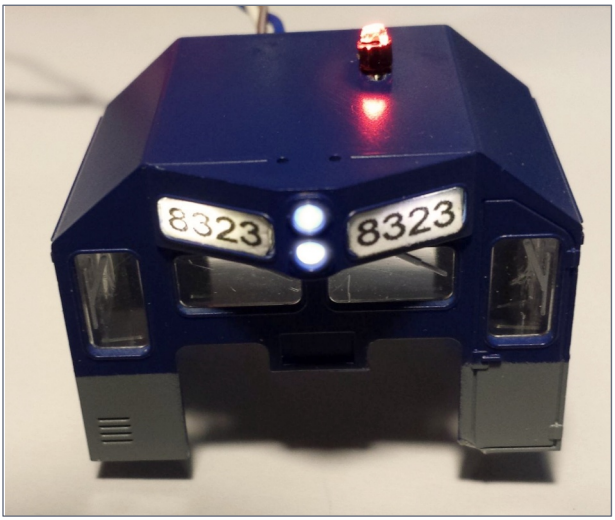


23. The DIY headlight/number board light PCB in the cab roof with the beacon and lighting casting from [22] installed in the cab.

A quick power test confirmed that everything worked. The number board numbers were printed on high-quality paper and stuck on with some super sticky double-sided tape. They looked good – professional, even – and I was pleased with how the warm-white LEDs made them glow.



24. Black tape added in the cab roof to cover the wiring mess.



25. Finished cab assembly under power, showing the working beacon, main bright-white headlight, and warm-white number boards.

CAB INTERIOR

The cab molding slides into the body as a separate piece. I mounted a yellow LED on the floor at the back for cab lighting, expecting to adjust brightness and diffusion. Since I'd exhausted decoder functions (the DN163 from Phase 1 has six function outputs), the cab light connects to the front headlight, operating only in forward direction.

Next, I painted and "weathered" the crew to look like they were hard-working and dirty. Finally, I installed the crew figures into the cab insert.

MAIN BOARD REDESIGN

One of the worst parts of installing lights is the maze of wires that have to be connected to the decoder. Worse, the lights are in the shell, and the decoder is on the chassis, so you end up with a bundle of wires that have to be managed every time you remove the shell for maintenance.

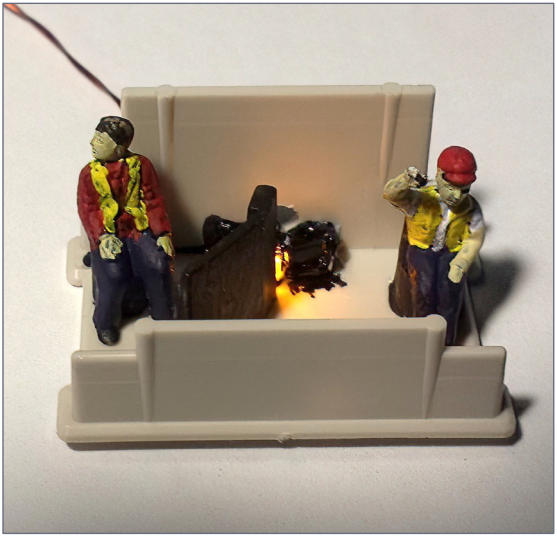
For this conversion, I decided to use the ample space on my main chassis-mounted PC board (Phase 1, Step 4) and directly solder the lighting leads to that. The redesign simply involved cutting more lines on the board and adding SMD resistors for those lighting functions that didn't already have them.

I sketched out the new circuit pattern and got to work with my hobby knife again, scratching away copper to create the isolated areas I needed. With the board modified, I installed the additional SMD resistors and prepared the solder pads for all the lighting leads.

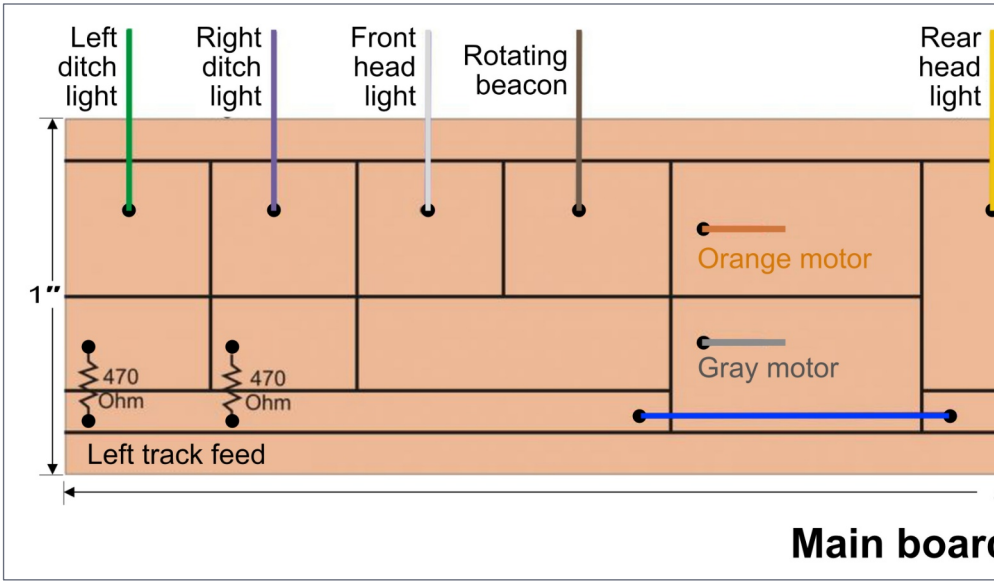
The actual board with the decoder wired in place looked much neater than I'd expected. I had all the wiring in place for the ditch lights, even though they hadn't arrived yet. Each front ditch light had a decoder function assigned – the green and violet wires – but the rear ditch lights would have to share a function on the yellow/white wire.

With only six function outputs on the DN163, I had to make some compromises, and having the rear ditch lights operate together seemed like the most reasonable one.

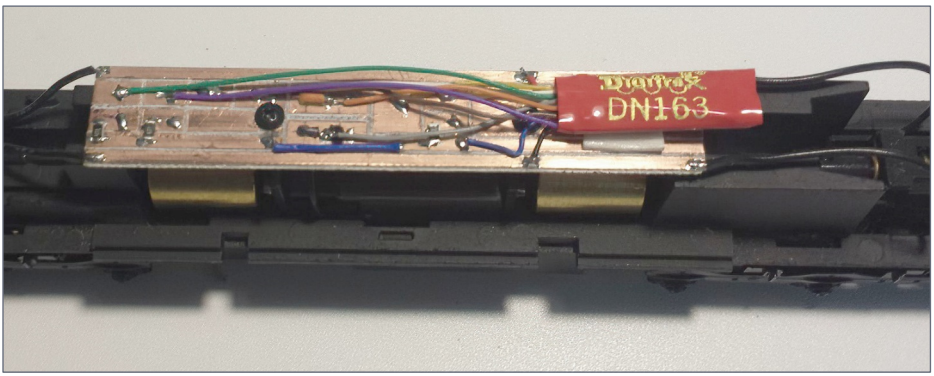
26. Cab crew check! An engineer and fireman fix that vacant-cab look.



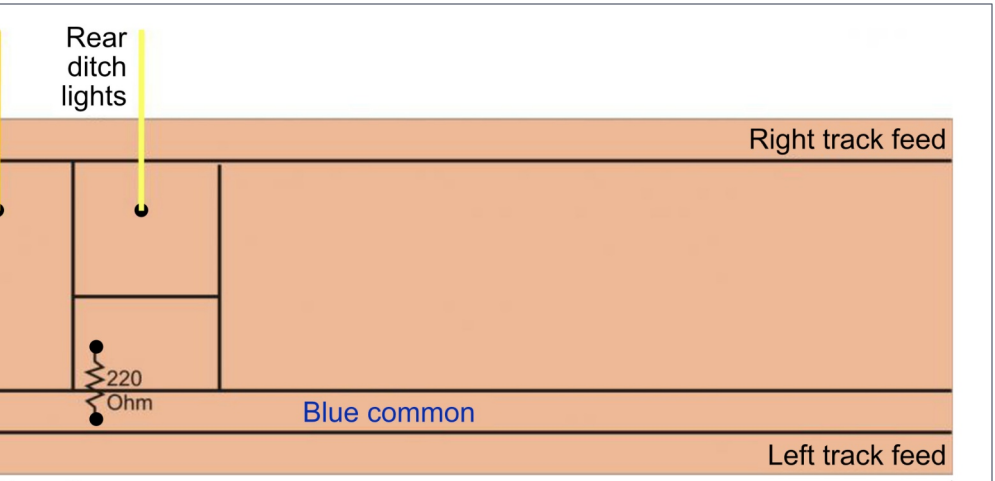
27. Painting the cab interior: crew figures are posed around the lit control stand.



28. DIY main loco circuit board redesign by adding additional pad islands with gaps cut between them.



29. DN163 decoder and DIY motherboard wired, providing organized connection points for the Kato SD40's lighting and power.



d PCB layout

LOCO TEST RUN AGAIN

I thought I should put the shell back on the chassis to make sure everything worked together, even without the ditch lights installed.

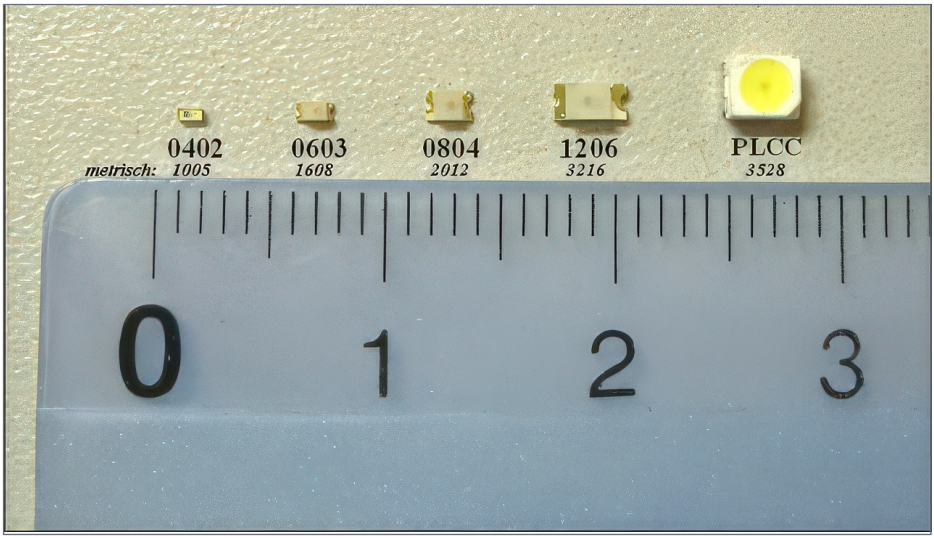
I carefully lowered the shell onto the chassis, making sure none of the wires got pinched, and secured everything in place. Then came the moment of truth – I placed the locomotive on the track and powered it up.

Everything worked! All the lights were functioning properly – headlights, rear lights, number boards, cab light, and rotating beacon. The locomotive ran smoothly and quietly, responding perfectly to throttle commands. It was satisfying to see all that work come together, even if the project wasn't quite finished yet.

DITCH LIGHT INSTALLATION

The Details West ditch lights arrived, and I decided they require 0402 SMD LEDs (1mm x 0.5mm) – extremely small components

30. Test-running the locomotive to see how things are coming. The new lights are great! Now for ditch lights.

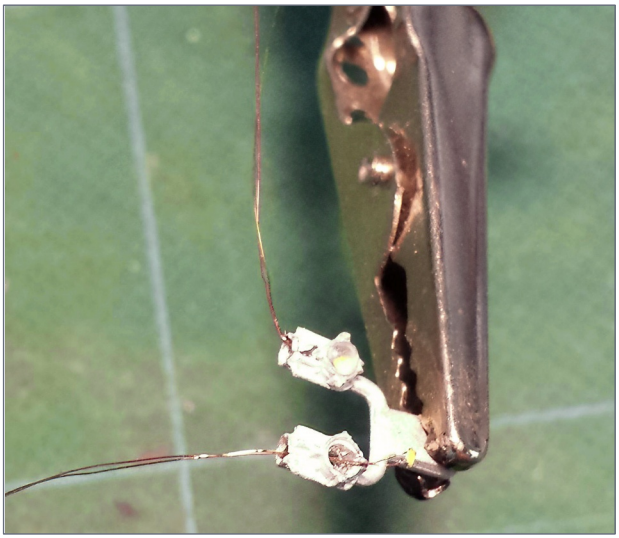


31. Comparison of different SMD LED sizes.

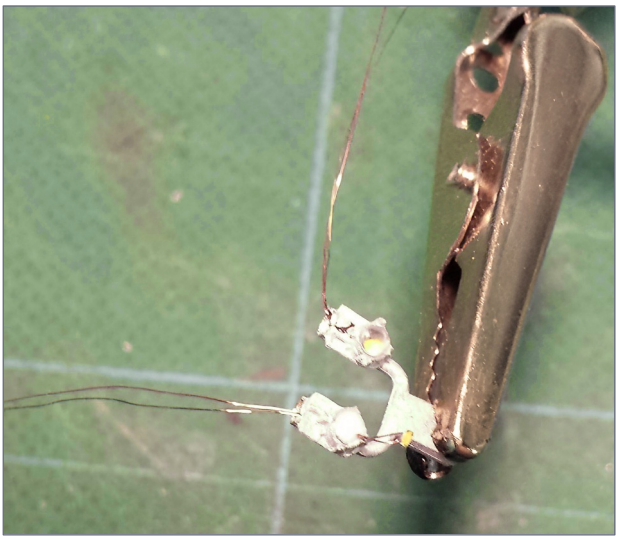
[31]. Pre-wired 0402 LEDs are now available from eBay, Amazon, and model railroad suppliers for $1-$2 each in warm-white or bright-white. The manufacturer pre-solders wire leads to the microscopic pads, eliminating what would otherwise be the most difficult part of ditch light installation.

Preparing the castings:

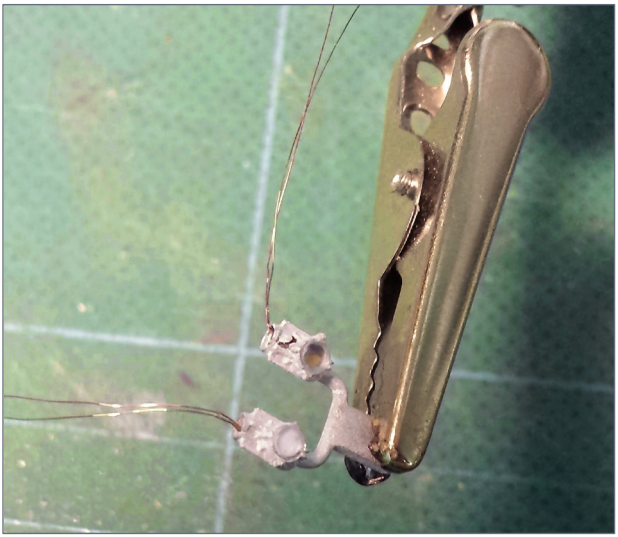
1. Drill lens area with 1.5mm bit
2. Drill stem with 1mm bit
3. Feed pre-attached wire leads through from inside
4. Fill lens hole with Micro Scale Kristal Klear
5. Embed LED into clear medium and fit provided lens
6. Test LED function before proceeding



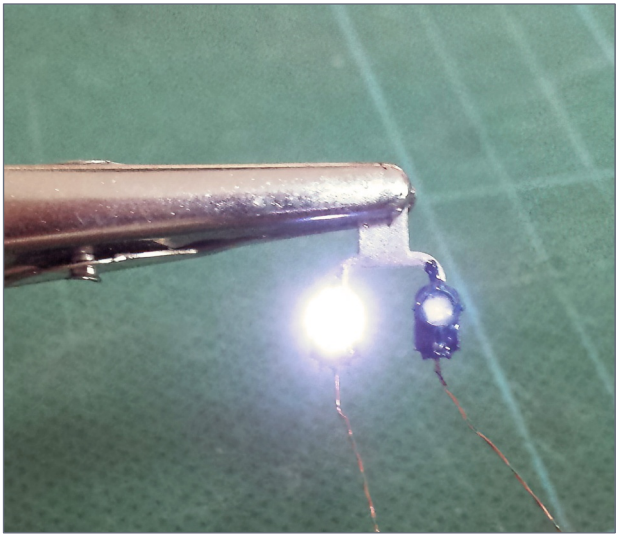
32. Test-fitting LEDs in ditch light casting. Upper light is finished; lower light shows LED being fitted.



33. Lower LED with Krystal Kleer added to form a lens. Upper light has dried already.



34. Finished Ditch light casting once Krystal Kleer has set up.



35. Testing the ditch light casting.

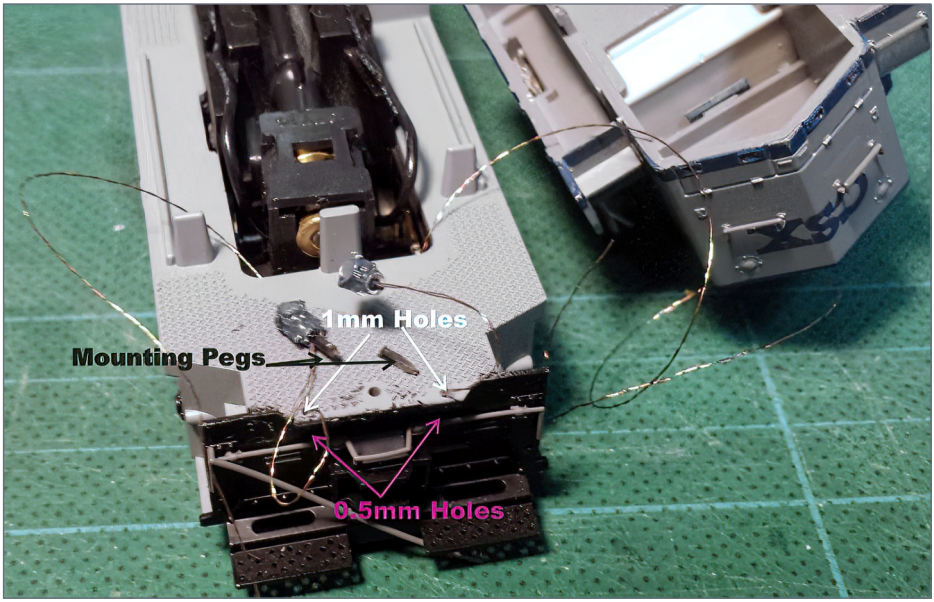
MOUNTING TO LOCOMOTIVE

The Kato SD40's separate foot plate simplifies wiring. Drill 1mm holes through the foot plate for mounting, then 0.5mm horizontal holes through the body for wire routing. Make mounting pegs from styrene rod (NOT carbon fiber – it conducts electricity!). Glue pegs into light bases and foot plate holes [36].

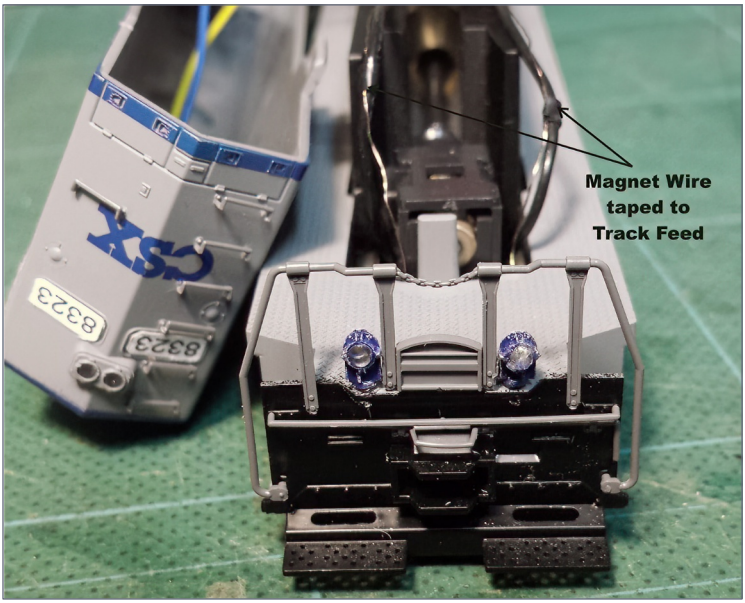
Route wires back to the chassis PC board alongside track feed cables, leaving slack for truck movement. Connect to prepared board locations and test all four lights.

FINAL ASSEMBLY AND RESULTS

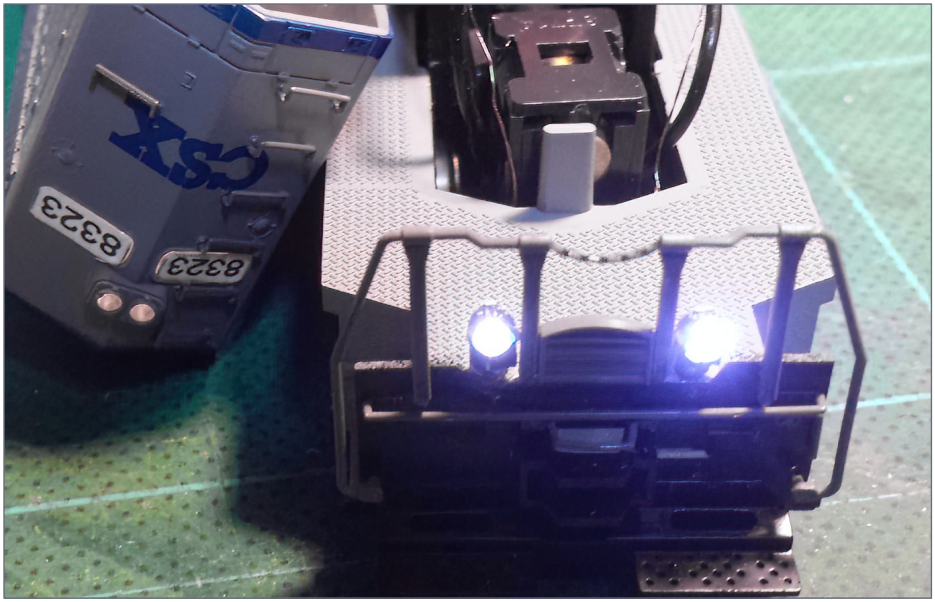
After so much effort, it was nice to finally have it all together and running smoothly on my layout. I'm quite pleased with the results. The yellow light in the cab looks okay – not too bright, just a nice warm glow that suggests someone's in there running the locomotive.



36. Drilling holes in preparation for mounting the ditch lights.



37. Ditch lights installed.



38. Testing the installed ditch lights.

LESSONS LEARNED

This project taught me several valuable lessons that I'll carry forward to future conversions:

On mechanical work: Always pay attention to the orientation of parts during reassembly. Those brass pickup bushes look symmetrical, but they're not. Mark things with arrows if you need to – it's much easier than troubleshooting mysterious derailments later.

On wheel cleaning: Taking the time to polish the wheel treads to a mirror finish really does improve electrical pickup. The 2000-grit wet-and-dry sandpaper followed by buffing compound made a noticeable difference.

On lighting: Don't be afraid to redesign the factory lighting system completely. The original Kato setup with light tubes and central bulbs just doesn't give you the control and realism that individual LEDs provide.

On SMD LEDs: Pre-wired 0402 LEDs are now readily available and are the way to go. They eliminate hours of tedious soldering work and make this type of project accessible to more modelers.

On project planning: The two-phase approach worked perfectly. Having a fully functional DCC locomotive after Phase 1 meant I could use it on the layout while I figured out the complex lighting work. If I'd tried to do everything at once, the locomotive would have been off the rails for months.

On documentation: Taking photos and notes as I went made it much easier to remember what I did when it came time to write this up. It'll also be invaluable when I need to do maintenance or repairs years from now.

Most importantly: Even challenging projects like installing 0402 LEDs are achievable with the right tools, proper planning, and patience.

P. Randerson

COMMUNITY COMMENTS & Q&A

I originally posted a thread about this project on the *MRH* forum – here are some of the more interesting questions and comments:

General project comments

David Calhoun: "These step-by-step articles with photos and narratives help folks like me become more proficient. Clear, easy to understand with helpful hints like the drill holding wheels. Great thread."

Wayne (35tac): "Where do you get parts? That's a big one for me."

My response: Try Kato direct or eBay. I was fortunate to have a suitable replacement spring in my spares box.

Jeff Patterson: "Just a note: It was the initial run of the KATO SD40-2 that had all the pickup problems. KATO tried to use the pickup

design of their N scale locomotives on the first run of HO scale SD40-2's. You'll know if you have one of these older models as soon as you pop the shell off – there will be two power bars running along the top of the frame on both sides of the motor. Power was picked up from the trucks using a wiper system similar to the old Athearns. Hard-wiring the trucks is the best fix, which also requires some slight modification to the frame."

My response: You're absolutely right about the SD40-2s. The SD40 I had came out first without the power bars, which made the pickup mods easier as I didn't have to modify the chassis.

Step 5: Replacement wiring board & motor connections

tomytuna: "I'm following this closely because I'm trying same thing in GP 35.... all looks the same... here is my question. Where you attached black and red wires for track pick up...how do you know which one to go to as all wires four wires inside are black? Thanks for any help."

My response: All four black wires come from the truck pickups – two per truck. Connect both left-side black pickups to the decoder's black decoder lead and both black right-side pickups to the red decoder lead.

Phase 2: Front light circuit board design

Nelson Beaudry (Nelsonb111563): "Great info! I have been contemplating using SMDs for lighting and this really will make my decision a lot easier. Can't wait to see how you do the front lights!"

Ditch Lights: 0402 LED Sources

Paul Mac (espeelark): "Hi Peter - great blog thread! One question – where did you get your 0402 LEDs? What's the source? Thanks again and keep up the great work!"

My response: I sourced 0402 LEDs from eBay – 100 for US$11.75 with free shipping from Chinese sellers. The only issue is no polarity markings, but if wired backward they simply don't light. If you're in

COMMUNITY COMMENTS & Q&A *CONTINUED ...*

the US, try Ngineering's Nano LEDs (www.ngineering.com/nano_white_led_specs.htm) at $2.97 each, though considerably pricier than 11 cents from eBay.

Kevin O. (Sou Rwy): "Hey Peter, Thanks for the reply on the LED source... I happened to notice that the supplied link was for the superbright-white LEDs, and that I could not find a 'warm-white' for that particular seller. Do you use the same source for your WW LEDs? and if so do you have a link for them as well???"

My response: 0402 warm-whites are harder to find. I found a German eBay seller with 10 for 3.99 Euro. Try messaging IC Touch directly or search eBay and Google.

Final comments

Wairoa: "Although you posted this thread to your blog quite a while ago, I just want to say thank you! This is exactly what I am looking for."

This comment really made my day. It's gratifying to know that documentation like this continues to help modelers years after it was written. ■

PARTS AND TOOLS LIST

Here's everything I used for this conversion. I've organized it by phase so you can tackle this project in stages if you'd like.

Phase 1 parts

- **Digitrax DN163 six-function DCC decoder** - This gave me plenty of function outputs for all the lighting I planned
- **Single-sided copper-clad PC board** - I used this to create custom circuit boards for mounting components
- **Wire** - Orange / gray for motor leads, plus wire for truck pickups
- **Nano Oil or equivalent gear lubricant** - Essential for proper gear maintenance

- **2000-grit wet/dry sandpaper** - For polishing wheel treads
- **Veritas honing compound from Lee Valley Tools** - This stuff is amazing for getting a mirror finish on metal. Any good metal polish will work
- **Leather strips** - Cut into 1/8″ wide strips for buffing wheels

Phase 2 parts

- **Details West Ditch Lights** - Four castings (two front, two rear)
- **0603 SMD LEDs** - I tried these first, but they were too large for the ditch light castings
- **0402 SMD LEDs (1mm x 0.5mm)** - bright-white and warm-white varieties. These are incredibly tiny but perfect for ditch lights
- **SMD resistors** - 220-ohm and various other values as needed for the different LED circuits
- **#38 gauge magnet wire in two colors** - About as thick as a human hair. The two colors help keep track of polarity
- **Low-temperature solder** - Melts at approximately 180°C (356°F), which is ideal for working with LEDs without damaging them
- **Micro Scale Kristal Klear** - Used to embed the LEDs in the ditch light castings and create clear lenses
- **1mm styrene rod** - For making ditch light mounting pegs. I initially tried carbon fiber, but it conducts electricity!
- **High-quality paper and high-tack double-sided tape** - For creating and mounting number board numbers
- **Yellow LED** - For cab interior lighting
- **Crew figures** - Two figures to populate the cab
- **Paint** - For painting crew figures and touching up ditch lights

TOOLS REQUIRED

- **Small screwdrivers** - Both flat and Phillip's head in various sizes

- **Flush-cutting pliers** - For trimming wire and component leads
- **Soldering iron (standard)** - For general soldering work
- **Temperature-controlled soldering iron** - Highly recommended, especially for working with SMD components.
- **Optivisor or magnifying headset** - Absolutely essential for working with 0402 LEDs. Even with magnification, these are challenging to see
- **Hobby knife** - For cutting PC board and trimming parts
- **Small files** - For cleaning up cuts and edges
- **Dremel tool with cutting disc** - For cutting PC board and modifying the light tubes
- **Drill bits: 0.5mm, 1mm, 1.5mm** - For drilling holes in the ditch light castings and body shell
- **Pin vise or small drill press** - For precise drilling of small holes
- **Multimeter** - For testing circuits and checking LED polarity
- **Tweezers (fine-tipped)** - Essential for handling tiny SMD components
- **Ngineering LED Holding Tool** - This was a game-changer for soldering 0402 LEDs. Highly recommended
- **Ngineering Small Parts Holding Tools (pair)** - Great for holding small parts and twisting magnet wire leads together
- **Custom soldering station** - I built one as described in the article to make working with 0402 LEDs manageable
- **Decoder Pro software** - Free software that makes decoder programming much easier than using a throttle

Optional

- **Hobby lathe** - I used a hand drill with the wheelset held in a chuck for polishing wheels, but you could substitute a drill press or lathe
- **Isopropyl alcohol** - For cleaning parts and removing flux residue

- **Black plumber's putty** - British modelers use this for preventing light bleed. It stays malleable and can be easily removed. I haven't found a good source in New Zealand
- **Spare motor brush springs** - These are tiny and love to disappear

WHERE TO SOURCE PARTS

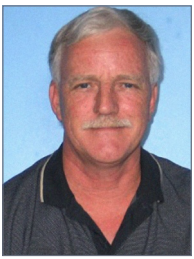
Pre-wired 0402 SMD LEDs are now readily available on eBay, Amazon, and through model railroad suppliers for $1-2 per LED. Available in warm-white and bright-white with wire leads already attached. For SMD resistors and other electronic components, eBay offers reasonable prices with free shipping from overseas sellers.

CONCLUSION

Documenting this project thoroughly makes future maintenance much easier – detailed photos and notes are invaluable when you need to remember wire routing or pickup orientation years later. With pre-wired LEDs now readily available, the lighting portion is much more approachable than when I originally did this conversion. Resources like DuFord Model Works were essential for understanding the pickup issues. If you have questions about this conversion, feel free to reach out.

Now, if you'll excuse me, I have a layout to run, and this SD40 is ready to pull some trains! ☑

PETER RANDERSON



Like many, Peter started in the hobby at a young age. A 34-year career flying Iroquois helicopters and fixed wing transport aircraft in the Royal New Zealand Air Force meant a lot of moves to some diverse parts of the world including Antarctica, Singapore, and the Sinai. After leaving the Air Force, he owned and managed a small business in the

VIEW READER COMMENTS

39. The finished locomotive with ditch lighting action and lit number boards and headlight. It runs very nicely and all the cool lighting functions are great fun.

construction industry for a further eight years.

Following retirement four years ago, he now has the time to devote to model railroading and other interests – which include cabinetmaking along with building and flying radio- controlled aircraft.

Peter has been married for 42 years and has three adult children and three grandchildren. ■

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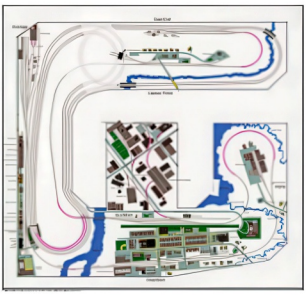
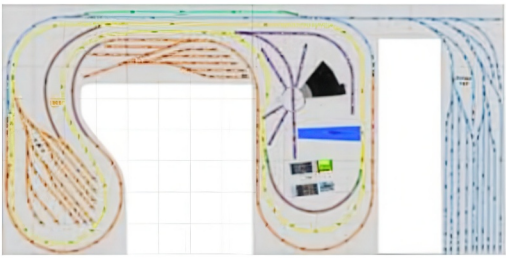
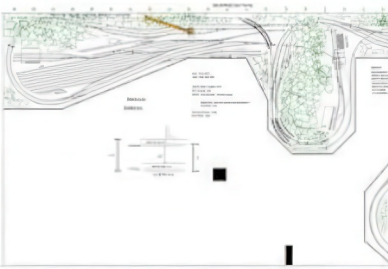
MRH MARKETPLACE

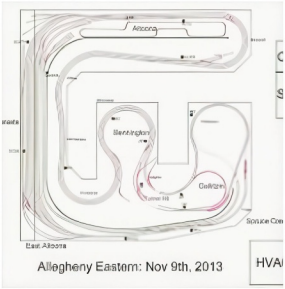
AN IN-DEPTH LOOK AT

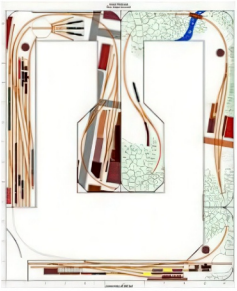
MRH's Track Plan Database



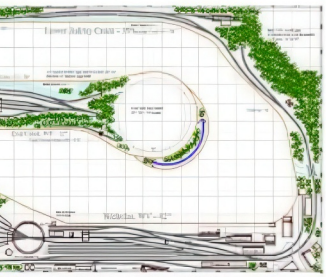


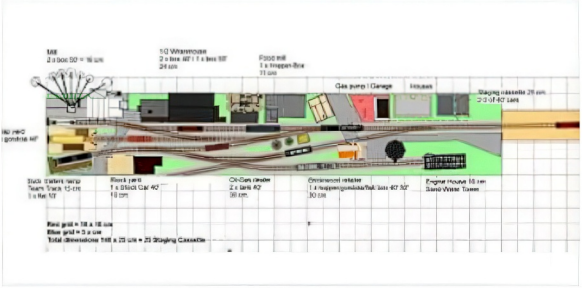


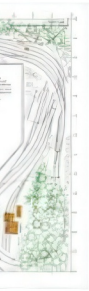


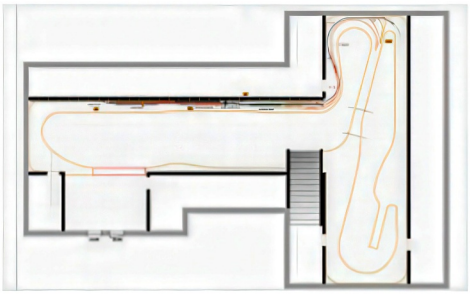


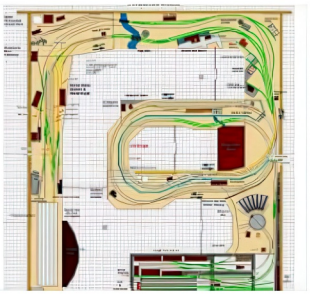
JOE FUGATE DOES A DEEP DIVE ON THE MRH TRACK PLAN DATABASE FORUM THREAD ...

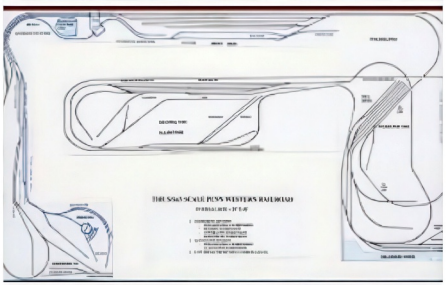


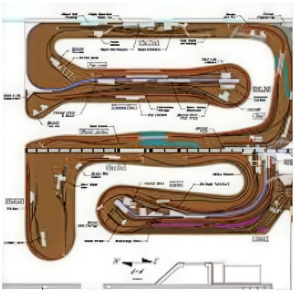












1. There are over 400 track plans in the track plan database thread on the MRH forum, with more being added every week or so. We take a look at what's here and how you can benefit from it.

Model Railroad Hobbyist | January 2026

"I HAVE THIS SPACE FOR A LAYOUT, BUT I'M STUMPED AS TO A TRACK PLAN. ANY IDEAS?"

This question appears often on the *MRH* forum. Here's the good news: the *MRH* community has created something special to help.

Enter the **MRH Track Plan Database** – a remarkable community resource started by forum member Bill Brillinger. This collection of ~450 track plans ranges from quick sketches to polished designs – all free!

What you'll find inside

The Track Plan Database includes fully developed track plans with detailed specs, while others are minimal – just a sketch with little more.

HO scale dominates at about 80% of plans. N scale comes in second. But we've also got plans for On30, S scale, Z scale, and O scale (plus 3-rail).

How it works

The database is a forum thread with one track plan per post. We've set up a companion thread for questions and comments. Our moderators move comment posts there, keeping the main thread focused on plans.

You can browse the plans directly or use our PDF index to scan by specific criteria – like an N scale DRGW plan for example. The index is updated periodically and available in our bonus downloads section.

Got questions about a plan? Head to the discussion thread!

Learning by example

Here's the real magic: the database shows you how other modelers solved space challenges – the same ones you may be facing. There's tremendous value in seeing how someone approached a 12x14 spare bedroom, made a switching layout work in 4x8 space, or created continuous running in an L-shaped basement.

Sometimes you'll find a plan that's perfect with minimal modifications. Other times, you'll see an interesting solution you can adapt like fitting a turntable into a tight corner. Occasionally, you'll see an approach that makes you think, "I never would have considered that!"

Contributing to the database

The database thrives on community contributions. If you've developed a track plan – whether built, building, or dreaming – consider sharing it. We especially welcome well-developed plans with clear dimensions and enough detail that others can understand your design.

Hand-drawn sketches are absolutely welcome, as long as they're clear and legible.

Find the database at **mrhmag.com/track-plan-database** – bookmark it, because you'll want to come back every now and then.

A showcase of possibilities

To give you a taste of what's available, I've selected six particularly interesting plans to showcase in the following pages. These represent a cross-section of scales, sizes, and design approaches – from a compact switching layout to a sprawling basement empire.

We give each plan a star rating and summarize its design. Then we give you an in-depth analysis of the plan, what's great about it, what's good, and what's a concern.

As you browse these featured plans – and then dive into the full database – you'll be amazed at the creativity of our community members. This is model railroading at its collaborative best: modelers helping modelers, sharing ideas freely.

So the next time you're staring at that empty space thinking, "What should I build here?" – head to the *MRH* Track Plan Database. Your answer might be waiting.

---

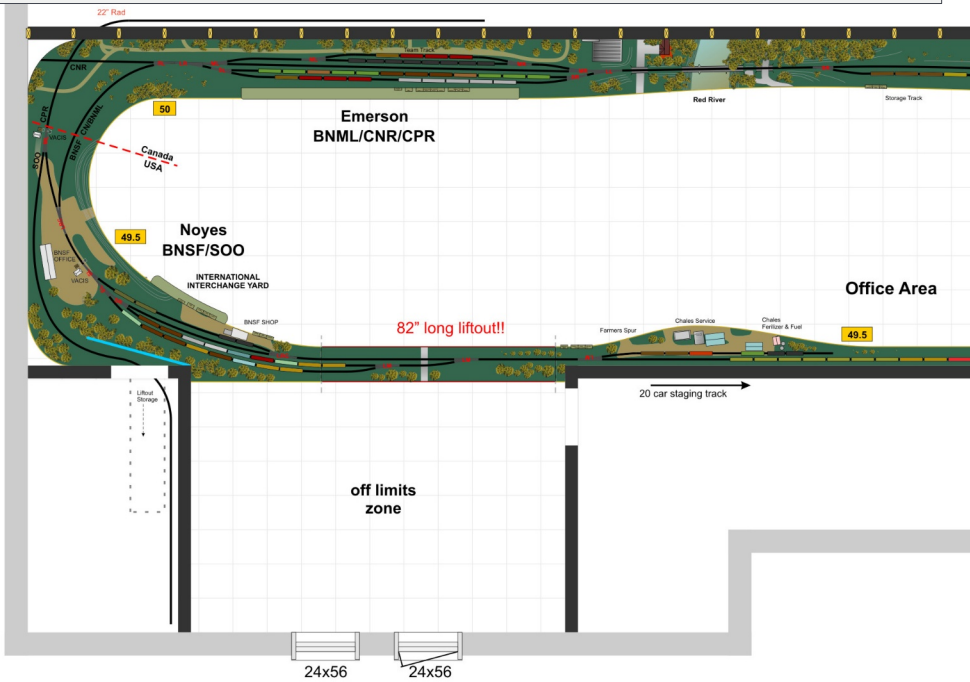
*The **MRH Track Plan Database** is available at **mrhmag.com/track-plan-database** . The PDF index is available in the MRH bonus downloads this month and we plan to update it periodically as new plans are added. The bonus downloads also detail our analysis criteria and provide another four plans plus their analysis.*

1. BNSF Manitoba Limited - Our rating: ★★★★½ (4.5 out of 5 stars)

Strengths: Strong prototype inspiration with unique theme; excellent operational potential for crews; appropriate curves and track for modern era; good industry variety and mainline run length; realistic car forwarding opportunities.

Deductions: Long liftout section (reliability concern); tight aisle width choke points for multi-operator sessions; sheer size/complexity may prevent completion.

The half-star bump is for the uniqueness of the border crossing theme. For someone with the space, skills, and operators, this is outstanding. For the average modeler, it's inspirational but may be impractical.



BNML

BNSF MANITOBA LIMITED

HO Scale
Era: 2008 to Present
Minimum Radius 32.5"
Mainline Run: 152ft
Dimensions: 55ft x35ft

VIEW READER COMMENTS


39" Rad
36.5" Rad
Morris River
47.5
49.5
50
Letellier
Aisle Width 28"
Creek
Agricole
SEED-EX
Aisle Width 28.5"
ADM Corn Processors
49
Morris
33" Rad
42"w x 47"h duckunder
Team Track: Cement Cars Flat Cars Pole cars Box Cars
Lavallee Gravel gons - cement rubble hoppers - gravel
Red River
Farmers Supply
47.5
Seed Services
Aisle Width 33"
Team Track: Flat Cars Pole cars Box Cars Grain Cars
Patterson Grain
St. Jean
47.25
49
Plum River
61.5" Rad

Analysis: BNSF Manitoba Limited
Basic specifications

Scale – HO scale, requiring **55 feet x 35 feet** (**825 square feet**) – a substantial basement-filling "dream layout."

Era and prototype – Modern era, 2008 to present, modeling the **US-Canada border crossing between Noyes, Minnesota and Emerson, Manitoba** with international interchange between BNSF and Canadian railroads (BNML, CNR, CPR, SOO Line). Highly prototypical.

Layout configuration – Around-the-walls with peninsula, point-to-point design with multiple towns (Noyes, Emerson, Letellier, Morris, St. Jean), double-deck with staging below.

Operational characteristics

Operating scheme – Prototype-based point-to-point. Trains originate from staging, work the international interchange yard, switch local industries, and return to staging. The **international border theme** provides unique operational richness – customs inspections, interchange between railroads, and agricultural traffic.

Switching opportunities – Excellent variety across five towns with roughly **15-20 distinct industries**: Noyes features BNSF/SOO interchange, VACIS inspection, team track, shop, and fertilizer/fuel facilities. Emerson has BNML/CNR/CPR interchange and international yard. Letellier includes ADM Corn Processors and grain facilities. Morris offers team tracks and Patterson Grain. St. Jean has Lavallee Gravel and team tracks. Diverse car types include grain cars, hoppers, gondolas, centerbeams, tank cars, boxcars, and cement cars.

Staging and multi-train operation – 20-car visible staging plus hidden staging below. The **152-foot mainline** and multiple towns support simultaneous operations. Built for **4-6 operators**.

Operating session potential – Exceptional. BNSF delivers cars to Emerson for Canadian roads, yard crew sorts by destination, Canadian trains work local industries, grain empties move to elevators with loads

returning, BNSF collects outbound cars. Sessions could easily run **4-8 hours** with proper car forwarding.

Technical considerations

Minimum radius – 32.5 inches minimum, with broader curves up to 61.5". **Generous for HO scale**, allowing full-length modern equipment. One **22-inch curve** near the border serves a spur. Suggests **#6 or larger mainline turnouts**.

Grades and clearances – Double-deck construction requires grades. Track spacing needs **2+ inches on straights, 2.25+ inches on curves** for modern wide cars. No reverse loops, suggesting **straightforward wiring**. **DCC strongly recommended** for multi-train operations.

Space utilization and design

Efficient use of space – Around-the-walls design maximizes run length. The **152-foot mainline** provides over two scale miles of running. **Reach-in distances average 18-30 inches**.

Aisle width concerns – 28" aisles in a few places are tight for multi-operator sessions. More on this in the *Concerns and Limitations* section on the next page.

Scenic opportunities – Outstanding potential: border crossing with customs facilities, grain elevators, prairie landscape, small town scenes, river crossings, and modern structures. Flat prairie allows realistic scenery focusing on structures / details. **Continuous backdrop** essential.

Design strengths

Prototype inspiration – Models real, specific location with genuine operational interest. Modelers can research prototype operations, take photos, and model specific structures.

... More on the next page

Analysis: BNSF Manitoba Limited, continued ...

Realistic operations – Outstanding interchange complexity: multiple railroads meeting, international customs procedures, seasonal grain traffic, mixed freight to local industries, unit trains and locals. Supports **car cards and waybills, switch lists, or computer-generated car forwarding**

Play value – Very high for operators interested in modern railroading and prototype operations. Size allows long mainline runs while industry density provides switching.

Clever solutions – 82" cassette/liftout allows room access while maintaining continuity; double-deck design maximizes operational capacity; international border theme provides unique operational narrative; combination of visible and hidden staging offers flexibility.

Potential concerns and limitations

Access compromises – The **47" high duck-under** and **82-inch liftout** are significant operational compromises. The liftout is extremely long with problematic storage when removed. Frequent duck-under passage can disrupt flow during operating sessions.

Aisle constraints – 28-inch wide aisles in some places force operators to constantly squeeze past each other.

Complexity and cost – Large, complex layout requiring substantial construction time, skills, financial investment, detailed double-deck planning, extensive wiring, and years to complete. Many modelers start projects like this and never finish.

Modern era considerations – Contemporary equipment costs more with limited availability. Large equipment requires broad radius. Detailed modern structures can be expensive or require scratchbuilding. **Prairie scenery can look empty** if not done well.

Overall assessment

Best suited for **experienced modelers** with space, time, and budget; **operators fascinated by modern railroading** and prototype

operations; **groups** for full operational potential; **grain traffic enthusiasts**; modelers interested in **international operations**; someone willing to commit **5-10 years** to construction.

Notable features: Authentic prototype location; international interchange operations; excellent industry variety with agricultural focus; 152-foot mainline run; multiple towns; generous curves (32.5" minimum) for modern equipment; double-deck design; designed for multi-operator sessions.

Adaptation potential is moderate. Prototype-specific nature limits changes. Scale up to O requires double the space (impractical). Scale down to N allows same footprint with longer runs. Era change difficult – industries and equipment are contemporary. Concept (border crossing interchange) could adapt to other locations (Portal ND/Saskatchewan; Rouses Point NY/Quebec). Could model just US or Canadian side to reduce complexity.

Bottom line

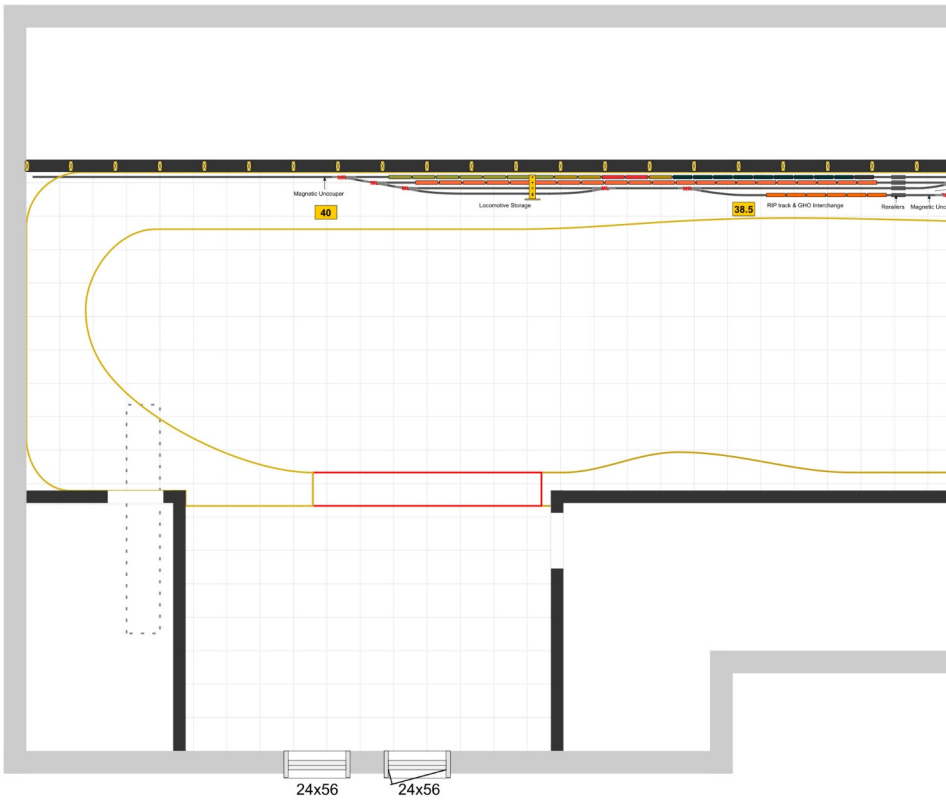
Ambitious prototype-based layout modeling a unique operational theme. International border crossing with multiple railroads is operationally rich and prototypically accurate. Size allows impressive mainline running with substantial switching.

However, not a beginner's layout. The 55x35-foot footprint, double-deck construction, long liftout, and tight aisles present real challenges to those new to building layouts. Sheer scope means many modelers would spend at least a decade building.

For the **right modeler** – someone with experience, resources, space, and operating partners – this could be a dream layout providing years of prototype-based operating sessions.

For **many modelers**, this would be overly ambitious. A scaled-back version (30x20 feet, single deck, one side of border) would be more achievable while retaining operational appeal. ■

2. This is the staging level for the BNSF Manitoba Limited track plan in [1]. Assessment of this plan level follows.



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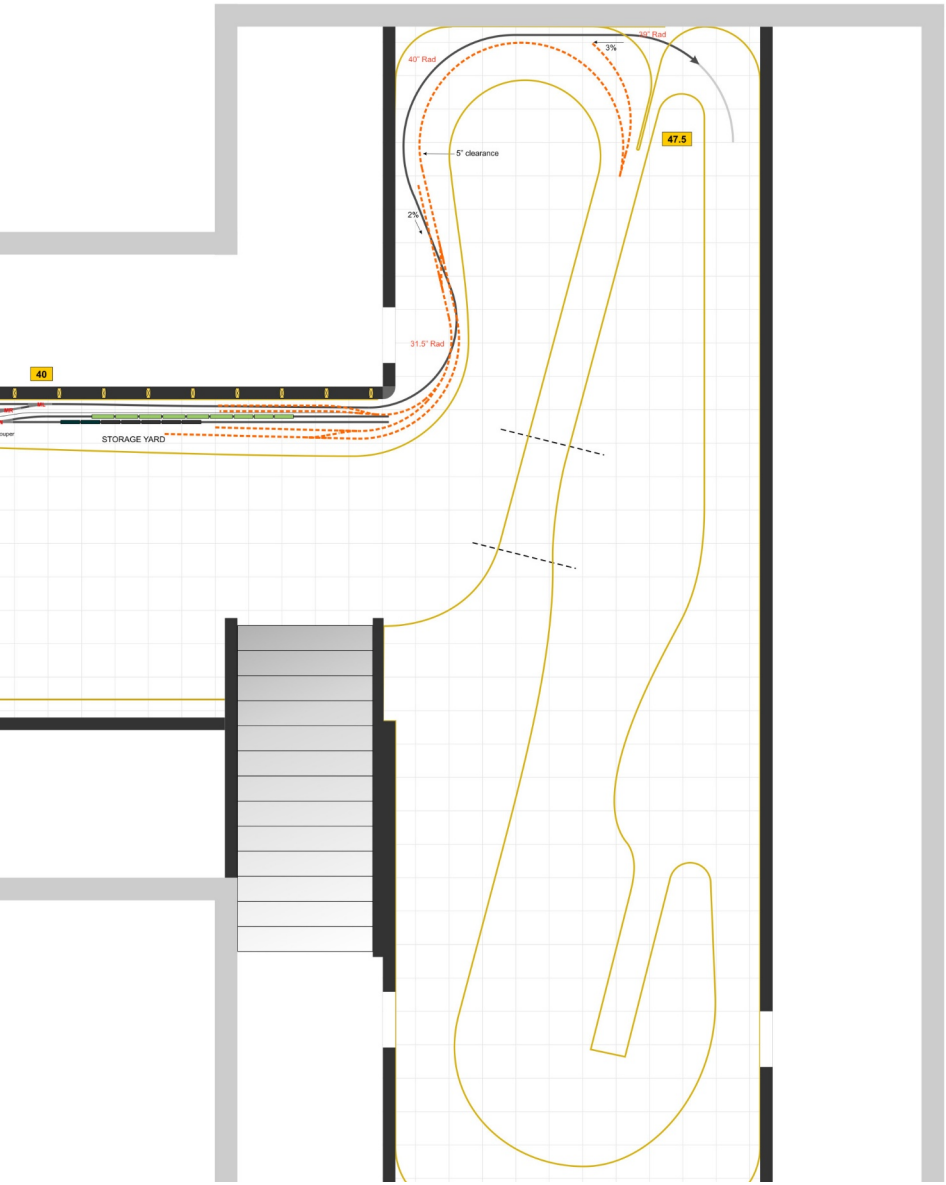

40" Rad
3%
32" Rad
47.5
5" clearance
2%
31.5" Rad
40
STORAGE YARD

Analysis: BNSF Manitoba Limited - staging

The lower staging deck provides staging, which often determines whether a layout operates smoothly or becomes frustrating.

Configuration and capacity

Shows **well-organized linear arrangement** along the room's perimeter with storage yard tracks, locomotive storage areas, RIP track & the GHO Interchange (see plan), magnetic uncouplers and rerailers at strategic locations, and multiple access points to the main level.

The staging offers **at least four tracks** of varying lengths. The **locomotive storage area** prevents power from occupying valuable staging track space. However, capacity appears minimal for the main level's demands (BNSF staging, Canadian railroad staging, interchange trains, through trains). For **4-8 hour operating sessions** with multiple operators, 6-10 staged trains would be ideal, which could be challenging.

Grades and transitions

3% and 2% grades transition between staging and main deck. **3% is the practical maximum** for HO scale: trains must be short or require helpers; modern diesels with traction tires typically handle 12-15 cars; longer trains may require double-heading. **2% is more manageable** but still requires attention to train length and power.

Transitions need **vertical easements** to prevent uncoupling and derailments. Trains must be tested for grade capability and locomotive assignments must consider grades.

Curve radii

Shows curves marked **31.5", 39", and 40" radius**. **31.5" is slightly tighter** than the main level's 32.5" minimum – a common staging compromise. **39" and 40" curves are generous**. The **mix of radii** shows smart optimization. Staging curves should be **tested thoroughly** with longest equipment, especially on combined curves and grades.

Operational function

Staging function: BNSF staging from US side, Canadian railroad staging from north, locomotive servicing and storage, and train makeup and breakdown. Staging effectively **doubles operational scope**.

Critical access concern

Staging only **10 inches below the main deck top** is **problematic**:

Operational consequences: Track laying must be perfect; extensive testing mandatory; equipment standards must be rigorous; staging could become an anxiety source.

Some experienced designers would consider this a design flaw. Limited clearance means staging must work perfectly because fixing problems is extremely difficult.

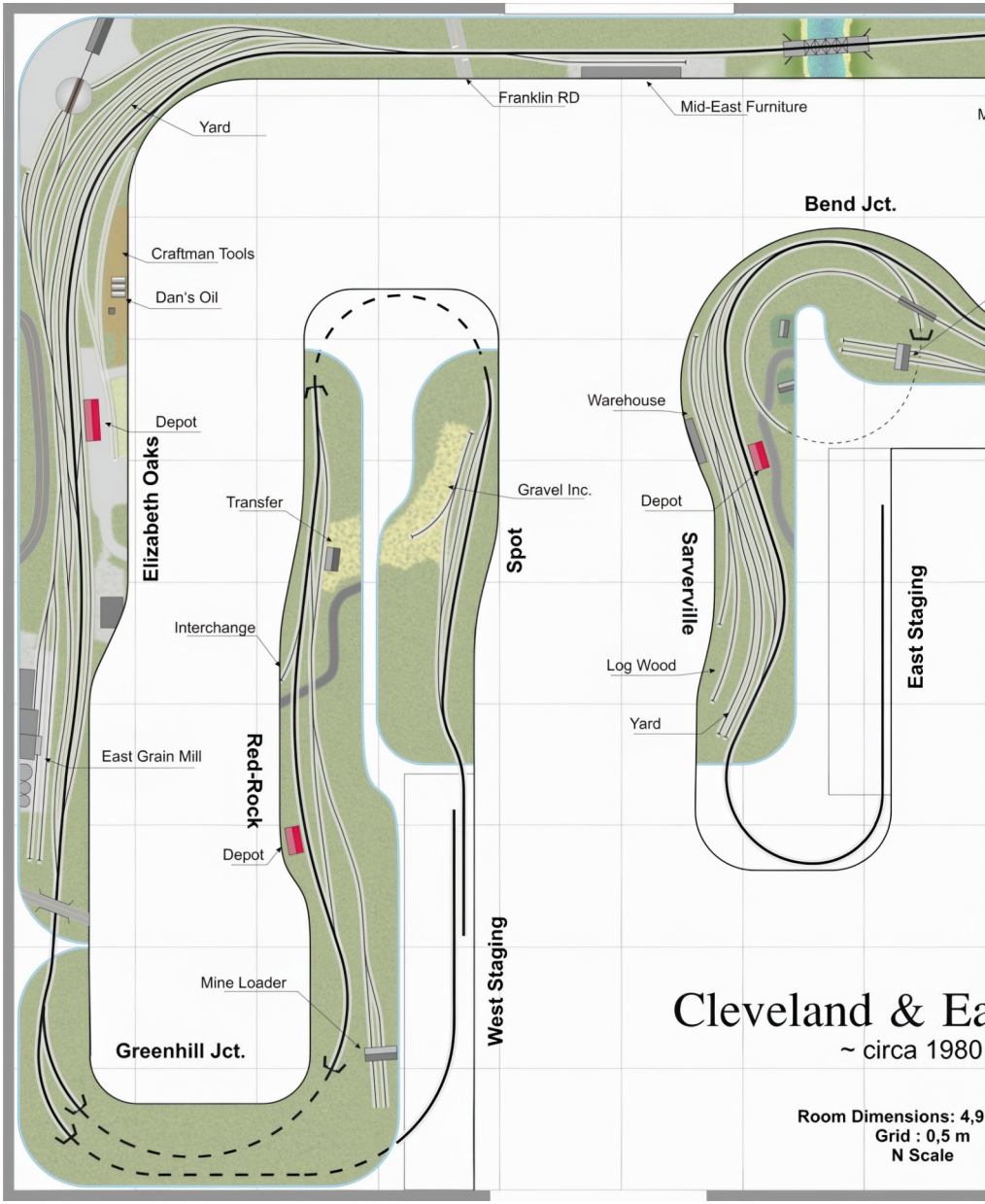
Why this compromise was made: Comfortable staging access (12-18 inches clearance) would require 60-65 inch main deck height – too tall for comfortable operation. Whether acceptable depends on builder's track-laying skill, willingness to do extensive testing, and acceptance that staging problems may end sessions.

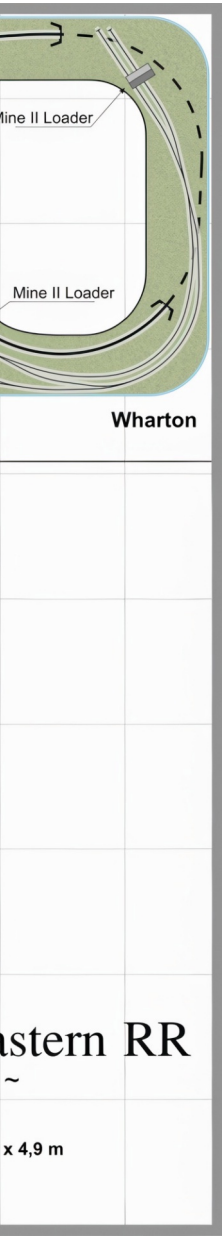
Strengths and concerns

Strengths: Dedicated locomotive storage; through configuration supporting point-to-point operations; generous curves where possible; uncouplers and rerailers marked; RIP track & GHO Interchange adds flexibility.

Concerns: 3% and 2% grades operationally limiting; access during operations disruptive; construction challenges – must install and test staging before building main deck above.

The fundamental tension in double-deck design: making staging hidden but also accessible. This plan makes inherent compromises in that design principle. ■


Franklin RD
Mid-East Furniture
Yard
Bend Jct.
Craftman Tools
Dan's Oil
Depot
Elizabeth Oaks
Transfer
Gravel Inc.
Spot
Warehouse
Depot
Sarverville
East Staging
Interchange
Log Wood
Yard
East Grain Mill
Red-Rock
Depot
West Staging
Mine Loader
Greenhill Jct.
Cleveland & Ea
~ circa 1980
Room Dimensions: 4,9
Grid : 0,5 m
N Scale



2. Cleveland & Eastern - Our rating: ★★★★ (4 out of 5 stars)

Strong operational design with good variety, but the narrow ~24″ aisle width in many spots is a significant constraint. The track density is moderate – could be 5 stars if the aisle width could be pushed to 30" or more at a minimum.

Analysis: Cleveland & Eastern

Scale: N scale (1:160) – excellent for maximizing the railroad in a modest space.

Space: 4.9 x 4.9m (16' x 16') square room with high quality operational potential.

Era: Freelanced 1979-1980, allowing first and second-generation diesels with modern operations.

Configuration: Walk-in design with peninsula, providing multiple viewing angles and operator access.

Operational characteristics

Operating scheme: Point-to-point with staging at both ends, supporting realistic through-train operations with local switching.

Switching opportunities: Excellent industry variety including Elizabeth Oaks, Mid-East Furniture Yard, Craftman Tools, Dan's Oil Depot, Cleveland & Eastern interchange, East Grain Mill, Gravel Inc. Warehouse, Log Wood Yard, two Mine Loaders, and Wharton. Good mix of bulk commodities (grain, gravel, coal/ore, logs, oil) and finished goods (furniture, tools).

Continued on next page ...

Analysis: Cleveland & Eastern, continued ...

Staging capacity: Both ends indicated, though capacity unspecified. Recommend 3-4 trains per end minimum.

Multiple train operation: Designed for at least two operators – one handling through trains, another working local switching. Greenhill Jct. and Bend Jct. provide passing/meeting points.

Operating sessions: Strong potential with 2-3 hour sessions featuring logical car forwarding sequences.

Technical considerations

Minimum radius: 55cm (21") visible, 35cm (14") hidden. Visible radius is generous and handles any equipment; hidden radius is tight but acceptable with careful equipment selection.

Turnouts: #7 and #10 specified – realistic and smooth, superior to typical #6 choices.

Grades: Not specified – needs clarification if elevation changes exist between staging and visible sections.

Space utilization

Layout efficiency: Walk-in peninsula maximizes the square footprint well.

Aisle width: Approximately 24" – minimum width that constrains multiple operators passing each other.

Scene separation: Distinct towns (Sarverville, Wharton) suggest good visual separation with backdrops.

Scenic variety: Industrial areas, mining, agriculture, logging, and small towns provide diverse modeling opportunities.

Design strengths

Prototype realism: Though freelanced, the industry mix and operations feel plausible for a late-1970s regional railroad.

Operational variety: Excellent balance between through trains, yard work, and local switching.

Era choice: Undermodeled period offering late first-gen power, modern equipment, and transition paint schemes.

Quality trackwork: Code 55 and larger turnouts demonstrate commitment to realistic appearance.

Concerns and limitations

Track density: 15+ named locations risk overcrowding. Ensure adequate track length and switching leads per industry.

Hidden trackage: 35cm radius is tight. Reliable trackwork essential.

Missing grade information: If staging is below main level, verify grades stay at 2% maximum for N scale.

Aisle access: 24" width is tight for multiple operators.

Solo operation complexity: Excellent for 2-3 operators but potentially overwhelming alone. Consider limiting active industries per session.

Overall assessment

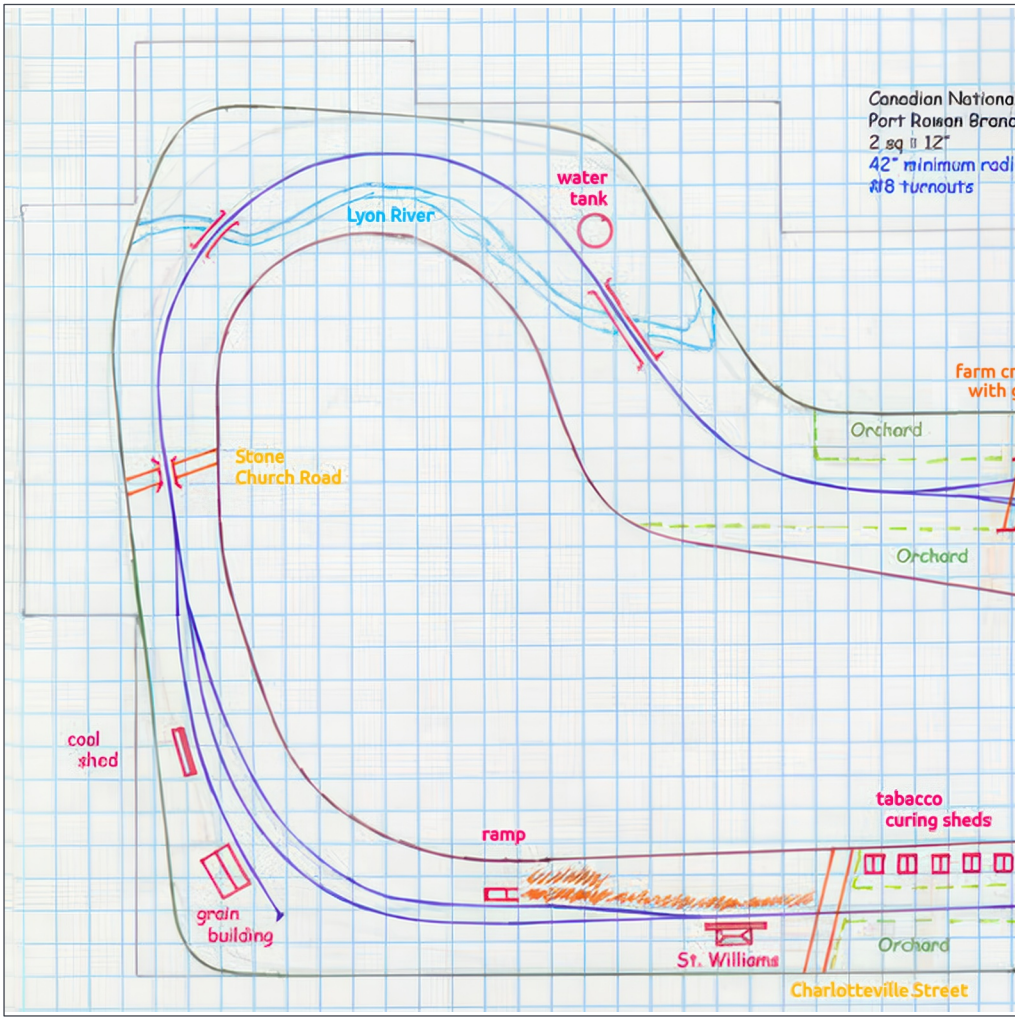
Best suited for: Intermediate to advanced N scale modelers enjoying operational variety and multi-operator sessions, willing to invest in quality trackwork and scenery.

Notable features: Good industry variety, generous curves, quality turnouts, good era choice, nice peninsula design with high operational interest.

Adaptation potential: Adaptable to different regions or eras.

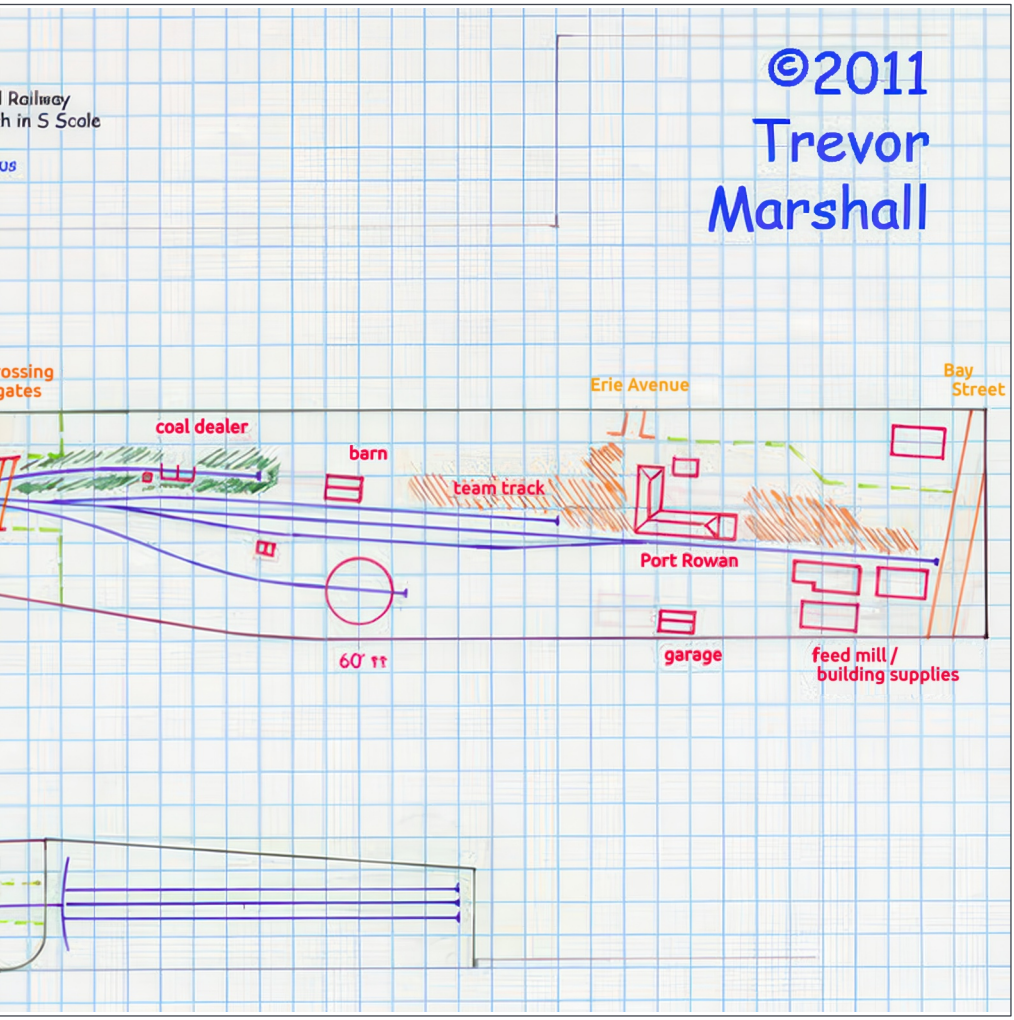
Bottom line: The Cleveland & Eastern RR is an ambitious N scale layout prioritizing operations over simple loop-running. It offers serious switching challenges and through-train action in a manageable space.

Quality specifications and varied industries promise engaging sessions. Main concerns are aisle space, access, and managing complexity. ■



3. CNR Port Rowan branch - Our rating: ★★★★½ (4.5 out of 5 stars)

An exemplary prototype-based branch line design with authentic agricultural character and practical operating sessions in a manageable footprint. The half-star deduction reflects only S scale's inherent limitations (less commercial structure availability, more scratchbuilding required) rather than design flaws. This well-thought-out plan demonstrates how modest space can support engaging, historically accurate operations.



Analysis: CNR Port Rowan branch

Scale: S Scale (1:64) – a "middle ground" scale combining O scale's presence with reasonable space requirements. S scale is experiencing a renaissance with increasing commercial availability and 3D printing enabling quick production of 1:64 models.

Continued on next page ...

Analysis: CNR Port Rowan branch, continued ...

Era and prototype: 1950s Canadian National Railway Port Rowan Branch in southern Ontario. This real prototype served Norfolk County's agricultural heartland, famous for tobacco farming, connecting small farming communities with the main line.

Layout configuration: Linear shelf layout mounting against a wall. Point-to-point design with four-track sector plate staging provides flexibility without requiring separate hidden staging.

Operational characteristics

Operating scheme: Point-to-point with sector plate staging. Trains stage on four parallel tracks, work down the visible branch, and return to staging.

Switching opportunities: Four distinct rural communities:

- Lyon River – water tank for steam locomotive servicing
- Orchard – coal dealer and farm crossing with gates
- Port Rowan – feed mill/building supplies operation
- St. Williams – street running on Charlotteville Street with grain building and tobacco curing sheds

The agricultural industry mix is exceptionally authentic. Norfolk County was Ontario's tobacco heartland in the 1950s. The variety (grain storage, feed milling, coal distribution, farm services) authentically represents the rural economy justifying the branch's operation.

Staging capacity: Four-track sector plate accommodates 4-6 trains in various consists.

Multiple train operation: Single-track without passing sidings limits operation to one train at a time. This is prototypical for rural agricultural branches and keeps operations focused on switching.

Operating session potential: Excellent for prototype-based operations. The local freight spots cars at grain elevators, delivers to tobacco curing sheds, switches the coal dealer, and picks up farm-sourced cars. Street running at St. Williams adds unique operational interest – locomotives sharing roadway space, a genuine small-town branch characteristic.

Technical considerations

Minimum radius: 42 inches – generous for S scale, accommodating any appropriate branch line locomotive and moderate-length cars smoothly.

Grades: Gentle grades would be typical and prototypical.

Turnout sizes: Eight turnouts in varied sizes (#7, #9, #10) add realism – larger mainline turnouts for smooth operation, smaller branch sidings to conserve space.

Track spacing and clearances: S scale equipment is physically similar to HO equipment, allowing adequate spacing for smooth operation.

Reverse loops and wiring: No return loops or wyes, though the sector plate requires carefully planned wiring.

Space utilization and design

Efficient use of space: The 27-foot length creates four distinct communities with authentic spatial separation.

Mainline run length: Approximately 60 linear feet creates reasonable operating length. View blocks and elevation changes enhance the illusion of distance.

Reach-in distances: Shelf configuration means all track is easily reachable for maintenance, uncoupling, and rerailing.

View blocks and visual separation: Four communities naturally separated by rural agricultural landscape. Backdrops showing distant Ontario farmland and proper track curves create visual separation.

Scenic opportunities: Outstanding potential including rolling farmland with fences, tobacco curing sheds (distinctive regional structures), water tower and coal dealer facilities, farm crossings, street running with period storefronts, and grain elevators.

Backdrop placement: Essential. Painted or photo backdrops showing distant farmland, tree lines, and sky significantly enhance rural Ontario scenery.

Continued on next page ...

Analysis: CNR Port Rowan branch, continued ...

Design strengths to highlight

Prototype fidelity: Real railway serving a real region with specific agricultural identity. Tobacco curing sheds are historically accurate to this area and era.

Industry authenticity: Grain storage, feed milling, coal distribution, and tobacco handling create compelling, historically accurate operational patterns.

Builder's modification: Four-track sector plate elegantly solves staging/space problems, providing flexibility without requiring more hidden staging or space-consuming yard ladders.

Scale appropriateness: S scale is ideal for this layout. Larger scale allows impressive structural detail while modest equipment keeps curves and footprint reasonable.

Street running: St. Williams street running adds significant operational and visual interest, adding authentic small-town atmosphere.

Linear progression: Logical operating flow from Lyon River through Orchard to Port Rowan to St. Williams.

Potential concerns and limitations

Linear shelf configuration: No continuous running loop means strictly point-to-point operation. This reflects prototype reality, but operators preferring continuous train watching should understand this limitation.

S scale commitment: Less commercial availability than HO. Structures, detail parts, and some locomotives may require scratchbuilding or assembly as a kit.

Single-track operation: No passing sidings between towns limits visible operation to one train between endpoints.

Space for detail: 2' x 12' doesn't allow sprawling town scenes. Each

location must be represented selectively and compactly.

Limited scenery depth: Narrow shelf limits scenery depth. Careful backdrop placement and selective vegetation necessary to avoid "built-on-a-shelf" appearance.

Overall assessment

Best suited for: Intermediate to advanced modelers interested in prototype Canadian railway history and rural agricultural operations. Particularly appealing to those drawn to S scale's advantages, modelers preferring switching over continuous running, and those interested in Ontario's agricultural character.

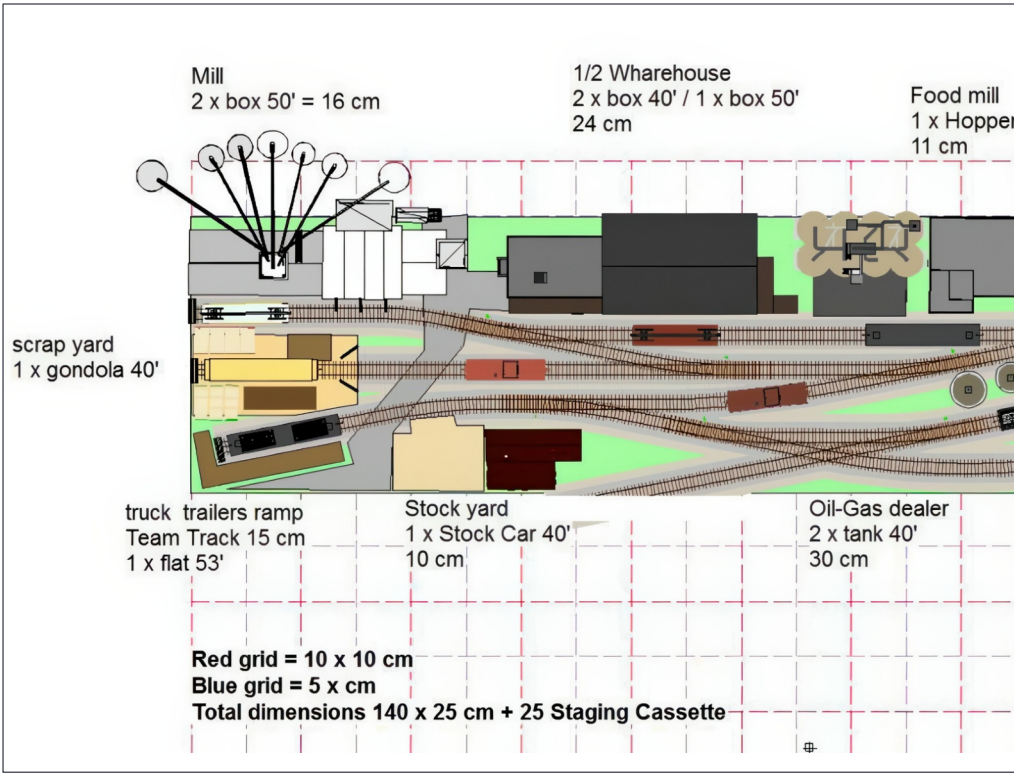
Notable features:

- Authentic prototype with specific regional agricultural character
- Exceptional industry variety capturing real operational patterns
- Elegant sector plate staging solution
- Generous 42-inch radius for smooth operation
- Street running sequence adding operational interest
- S scale allowing impressive detail in modest footprint
- Linear progression creating natural operating flow

Adaptation potential: This design could be adapted to other Canadian agricultural branch lines or similar rural American prototypes. The basic footprint could be compressed to 10 feet or expanded to 15+ feet.

Bottom line: The CNR Port Rowan Branch is a thoroughly researched prototype design celebrating the agricultural railway operations of 1950s Ontario. Rather than modeling a famous mountain railroad, this plan offers the quieter satisfaction of working branch line operations – grain shipments, farm deliveries, and daily rural commerce.

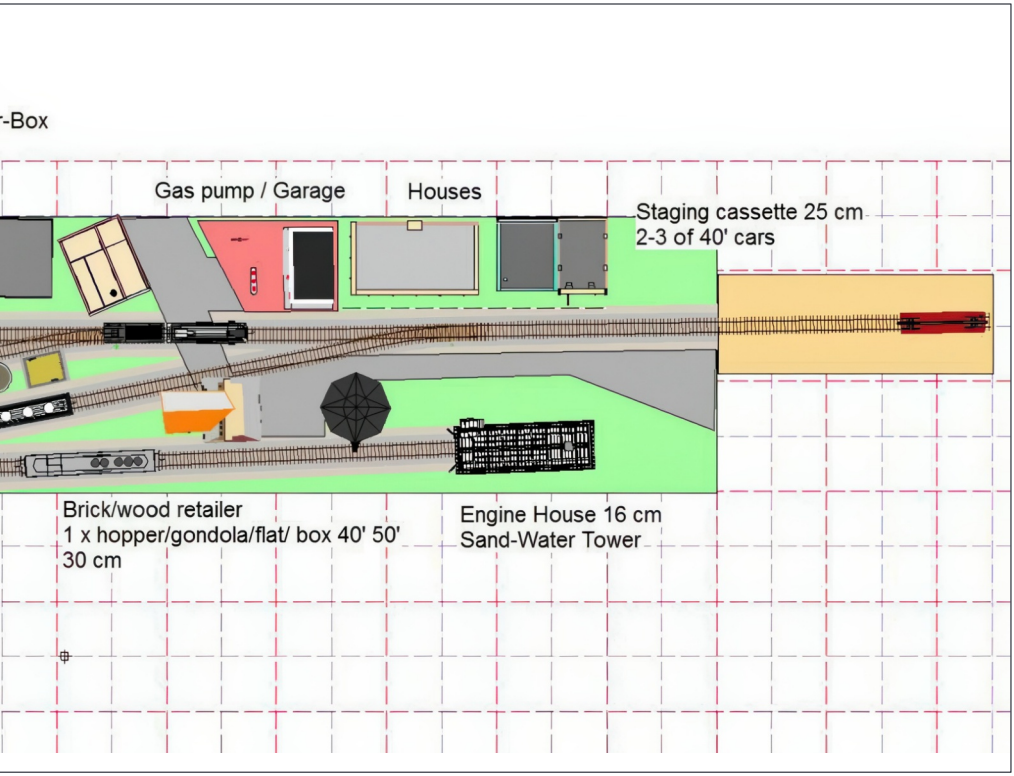
The sector plate staging solution is creative and practical. For modelers willing to embrace S scale and commit to prototype research, this is an exemplary branch line design that rewards careful execution with compelling operations. ■



4. Compact industrial switching layout - Our rating: ★★★★ (4 out of 5 stars)

For its intended purpose, this is a nice design. It's not trying to be a mainline runner or a museum-quality showcase layout. It's a compact switching area that delivers maximum operational value in minimum space, and it succeeds admirably at that goal. The cassette staging is particularly clever and worth stealing for other compact designs.

VIEW READER COMMENTS



Analysis: Compact industrial switching layout

Scale – HO scale, with a **55" x 10" footprint** (140cm x 25cm).

Space and dimensions – 55" x 10" main layout plus a 10" staging cassette (approximately 4.6 feet x 10 inches plus a 10-inch cassette). This is an extremely compact shelf layout, able to fit along a wall or above a desk/workbench.

Era and prototype – North American prototype, likely 1950s-1980s based on the mix of 40-foot and 50-foot cars. The variety of industries (scrap yard, mills, oil dealer, stock yard) suggests a small town industrial district or branch line terminus.

Continued on next page ...

Analysis: Compact industrial switching layout, continued ...

Layout configuration – Shelf layout with a simple switching lead serving multiple spurs. The staging cassette provides train arrival/departure functionality – a clever solution for a layout this compact.

Operational characteristics

Operating scheme – Pure **switching layout**. Trains arrive via cassette, the locomotive sorts and spots cars to industries, then departs with outbound cars.

Switching opportunities – Excellent variety for the size:

- Scrap yard (1 car)
- Mill (2 cars)
- Warehouse (2-3 cars)
- Food mill (1 car)
- Gas pump/Garage (presumably team track?)
- Oil-Gas dealer (2 cars)
- Brick/wood retailer (1 car)
- Team track (1 car)
- Stock yard (1 car)
- Engine house area

That's roughly **12-14 car capacity** on the layout, which is impressive for 4.6' of length. Each industry has different car requirements (gondolas, hoppers, boxes, flats, tanks, stock cars), providing excellent operational variety.

Staging capacity – The **10" cassette holds 2-3 40-foot cars**. Minimal but adequate. Multiple cassettes could be pre-staged with different scenarios.

Crew operation – Single-operator, single-locomotive design. Perfect for lone wolf operation with limited time or space.

Operating session potential – Solid **30+ minute sessions**: bring in local from staging, sort cars, spot inbound cars, pull outbound cars, assemble outbound train, and depart.

A good **30+ minute session** with plenty of moves.

Technical considerations

Minimum radius – Tight curves, likely **18" radius**, limiting equipment to 40-50 foot cars and small locomotives.

Grades – Presumably **flat or minimal** for reliable switching.

Turnout sizes – Small to medium (#4 or #5 in HO), appropriate for slow switching speeds.

Track spacing and clearances – Critical with 10" depth. **Parallel tracks will be close together**; careful clearance planning essential, especially on curves.

Crossovers and turnback loops – Runaround track for locomotive switching. Cassette handles train arrival/departure.

Reverse loops and wiring – No reverse loops, so **simple DC or DCC wiring**. Cassette may need polarity consideration.

Space utilization and design

Efficient use of space – Excellent. Maximum switching in minimal footprint without creating track spaghetti.

Reach-in distances – At 10" deep, **everything is within easy reach** for derailments and uncoupling.

View blocks and visual separation – Low structures or buildings could separate industry areas. Engine house and warehouse provide visual breaks.

Scenic opportunities – Good potential despite size. Forced perspective could enhance depth. Challenge will be avoiding clutter.

Backdrop placement – Simple photo backdrop along back would enhance depth – even a basic sky or industrial cityscape.

Continued on next page …

Analysis: Compact industrial switching layout, continued ...

Design strengths

Prototype inspiration – Believable **small-town industrial district or branch line terminus** with realistic 1950s-80s era industry mix.

Realistic operations – Industrial switching with varied car spotting.

Play value – Extremely high for its size. High-density switching with maximum operational interest in minimum space.

Clever solutions – Cassette staging is brilliant – removable, pre-stageable, represents outside world without consuming a lot of layout space. Multiple cassettes can multiply variety.

Operator ergonomics – Excellent with 10" depth. Everything visible and accessible.

Potential concerns and limitations

Tight curves – Force **very tight curves** limiting equipment to **40-foot cars maximum**. 50-foot cars may not track reliably.

Cramped track spacing – Parallel tracks very close together. Clearance between cars on adjacent tracks needs careful planning.

Limited staging – Only **2-3 cars on cassette** means limited variety without swapping cassettes or respotting same cars.

Small locomotive required – Tight curves demand **small industrial switcher** (44-tonner or small 0-6-0 maximum).

Fiddly operation – Uncoupling and spotting require precise control. Magnetic uncouplers or manual tools essential.

Structure placement challenges – Fitting appropriate structures without clutter requires **selective compression or suggestion with flats** rather than full modeling.

Cassette connection – Must be **perfectly aligned** for reliability.

Overall assessment

Ideal for:

- Beginners to intermediate modelers developing switching skills
- Operators with very limited space
- Those who enjoy switching puzzles over mainline running
- Modelers wanting to complete a layout quickly
- European modelers familiar with compact design

Notable features

- Impressive industry density in minimal space
- Clever cassette staging solution
- Excellent reach-in access
- Authentic industrial character
- High operational interest for size

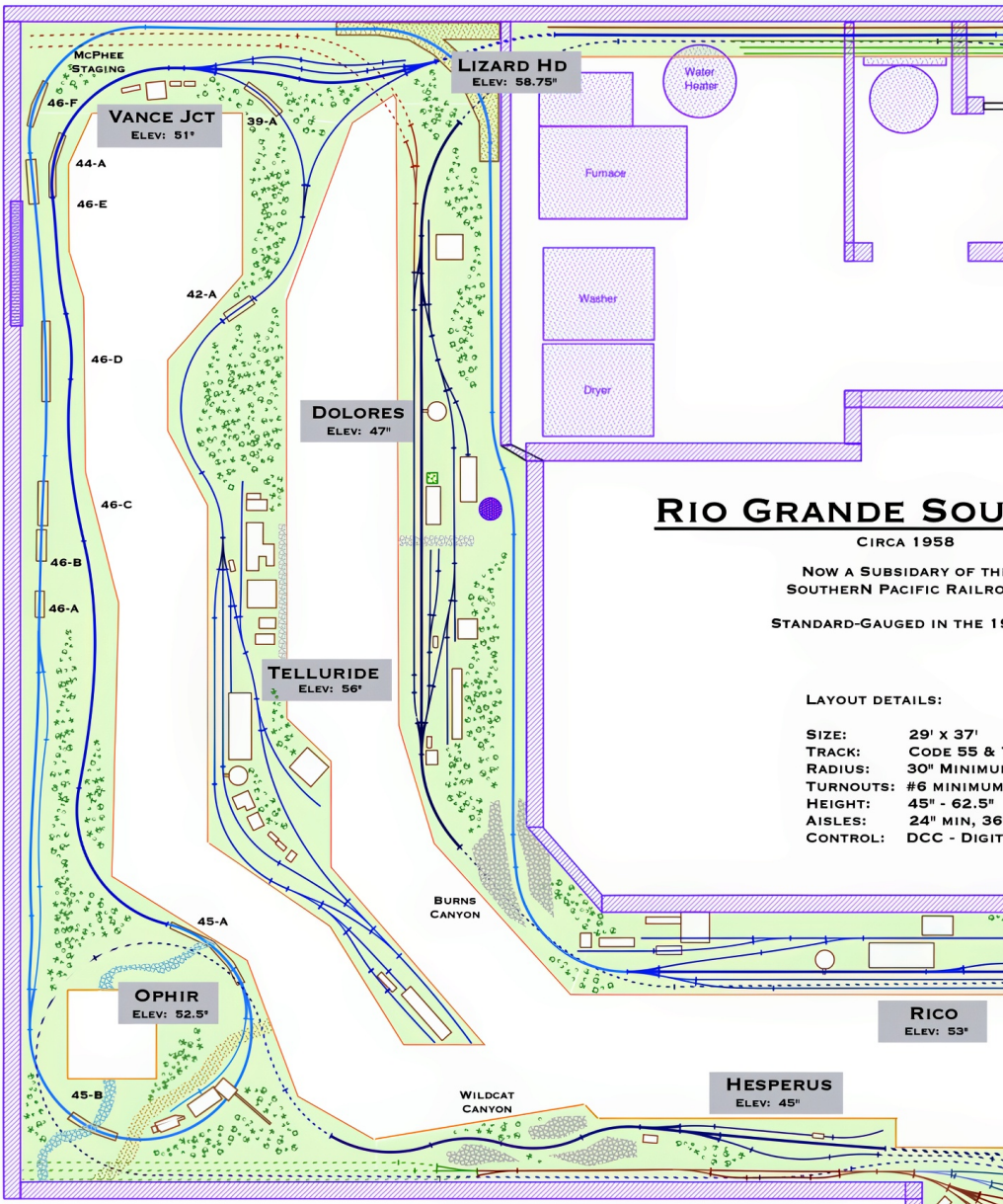
Adaptation potential

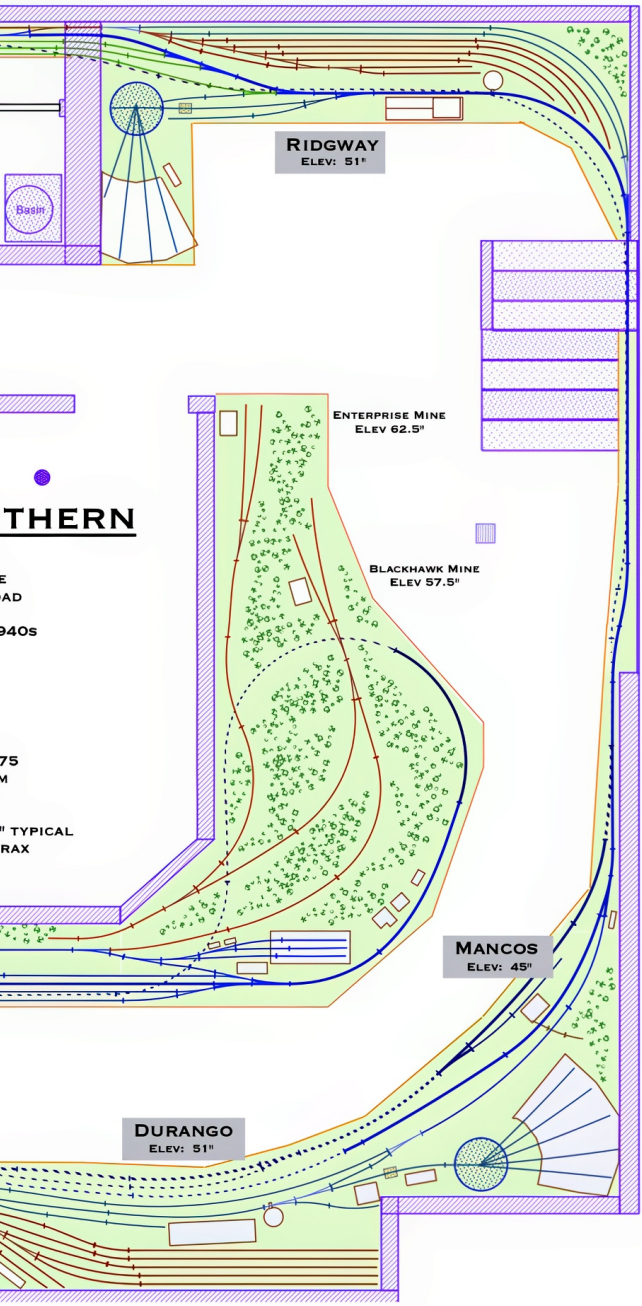
- Lengthen to 5-6' for more industries or gentler curves
- Mirror or flip for different room arrangements
- Swap industries for different eras or regions
- Build as modules for easier transport
- Works in N scale (same size), or scale up to S or O proportionally
- Replace cassette with fiddle yard or hidden staging if space allows

Bottom line

A **textbook example of high-density industrial switching** in minimum space. Proves you don't need a basement for engaging operations.

For limited-space modelers who want to operate trains rather than watch them circle, this is an excellent starting point. Build it, detail it, and have a complete, satisfying layout in months – something many basement empire builders never achieve. ■





5. Rio Grande Southern reimagined - Our rating: ★★★★ (4 out of 5 stars)

Four stars for excellent operational design, prototype inspiration, and scenic potential. One star deducted for substantial scope and complexity that may prove overwhelming, and significant space and financial requirements limiting accessibility. For experienced modelers with appropriate resources, this could easily be five stars.

Analysis: Rio Grande Southern reimagined

Scale: HO scale

Dimensions: 29' × 37' (approximately 1,073 square feet)

Track: Code 55 / Code 75 rail, representing mainline and branch/ industrial trackage

Minimum radius: 30" - reasonable for HO scale

Turnouts: #6 turnouts throughout

Continued on next page ...

Analysis: Rio Grande Southern reimagined, continued

Benchwork height: Variable elevation from 45" to 62.5"
Aisle width: 24" minimum, 36" typical
Control system: DCC (Digitrax)
Historical era: Circa 1958, representing the Rio Grande Southern after fictional conversion from narrow gauge to standard gauge in the 1940s (the actual RGS abandoned operations in 1952)

Prototype basis: Rio Grande Southern Railroad, southwestern Colorado, reimagined as a standard-gauge Southern Pacific branch

Operational characteristics

This point-to-point layout with multiple staging yards captures mountain railroading with significant grade changes and diverse traffic.

Primary traffic flows: Through freight between Durango-Ridgway staging; mine traffic from Enterprise (62.5") and Blackhawk (57.5"); local switching at Telluride, Ophir, Rico, Dolores, Hesperus, and Mancos; interchange, agricultural, and timber products.

Operating crew: 4-6 operators: 1 dispatcher/yardmaster, 1-2 through freight crews, 2-3 local/mine crews. Supports solo or group sessions.

Grades: 17" elevation change creates 2-4% grades requiring helpers.

Technical considerations

Vertical clearance: Single-deck design with tracks from 45" to 62.5" creates dramatic elevation changes.

Helix and hidden track: Elevation changes require accessible hidden track with consistent grades and detection systems.

Electrical considerations: DCC requires multiple power districts with adequate bus wiring, circuit breakers, boosters, and wireless throttles. The Vance Jct wye demands reverse loop wiring for polarity changes.

Track geometry: 30" radius and #6 turnouts ensure reliable operation of articulated steam and 50'+ freight cars.

Space utilization and design

Room: Requires dedicated 30' × 38' space with climate control, lighting, and storage.

Layout configuration: Walk-in design with peninsulas maximizes access, eliminates duck-unders, and provides multiple viewing angles.

Elevation strategy: Lower levels (45-51") feature valley towns; upper levels (52.5-62.5") feature mountain locations and mines, creating visual drama and maximizing operational length.

Design strengths

Prototype fidelity with creative license: The layout authentically captures Colorado mountain railroading through a clever "what-if" premise: the narrow gauge RGS converted to standard gauge in the 1940s, now operated by the SP in 1958. This plausible scenario – many narrow gauge lines were indeed standard-gauged during this era – opens tremendous modeling possibilities.

Allows standard gauge Southern Pacific equipment: classic steam 2-8-2 Mikados and 4-8-4 GS engines, first-gen diesels including F-units in "Black Widow" livery, Alco road-switchers, and early EMD Geeps.

This transforms a potentially limiting narrow gauge prototype into a layout with full range of HO standard gauge equipment.

Operational variety: Fun diversity including through freights, mine runs with steep grades, local way freights, helper operations, multiple simultaneous trains, and mainline running with intensive switching.

Realistic train lengths: Through freights of 20-30 cars, local freights of 10-15 cars, mine runs of 8-12 ore cars plus caboose.

Scenic potential: Colorado mountain setting with canyons, mining structures, Victorian towns, forests, and seasonal modeling.

Era selection: 1958 transition-era provides steam and diesel power, classic freight cars, vintage automobiles and structures, and photographic documentation.

Continued on next page ...

Analysis: Rio Grande Southern reimagined, continued

Potential concerns and limitations

Space requirements: 1,100+ square foot footprint demands dedicated, climate-controlled space.

Construction timeline: Decade-plus project requires phased construction to maintain momentum and prevent burnout. Excellent TOMA candidate.

Grade challenges: Significant elevation changes demand attention to rolling stock weight and trackwork.

Hidden track accessibility: Helixes and hidden sections require access hatches, good equipment detection, and adequate lighting.

Aisle width: 24" minimum aisles may challenge larger operators or make passing other operators tricky during sessions.

Maintenance: Extensive trackage requires significant upkeep commitment.

Overall assessment

This Rio Grande Southern layout represents an ambitious, well-conceived design capturing Colorado mountain railroading's drama and operational interest.

Operational and technical excellence: Point-to-point design with multiple staging yards supports realistic operations with varied traffic – through freights, mine runs, locals, and helper operations.

The solid specifications (30" radius, #6 turnouts, Code 55/75 track, DCC) ensure reliable operation with comfortable viewing heights and dramatic vertical separation.

Challenges: Primary concerns are scope and complexity. This long-term project requires sustained commitment, substantial investment, and dedicated space.

Grades need careful construction; hidden trackage requires thoughtful accessibility design.

Suitability: Ideal for experienced modelers with dedicated space, ability to organize operating sessions, and fascination with Colorado railroading.

Less suitable for beginners, those seeking quick results, limited space, solo operators, or tight budgets.

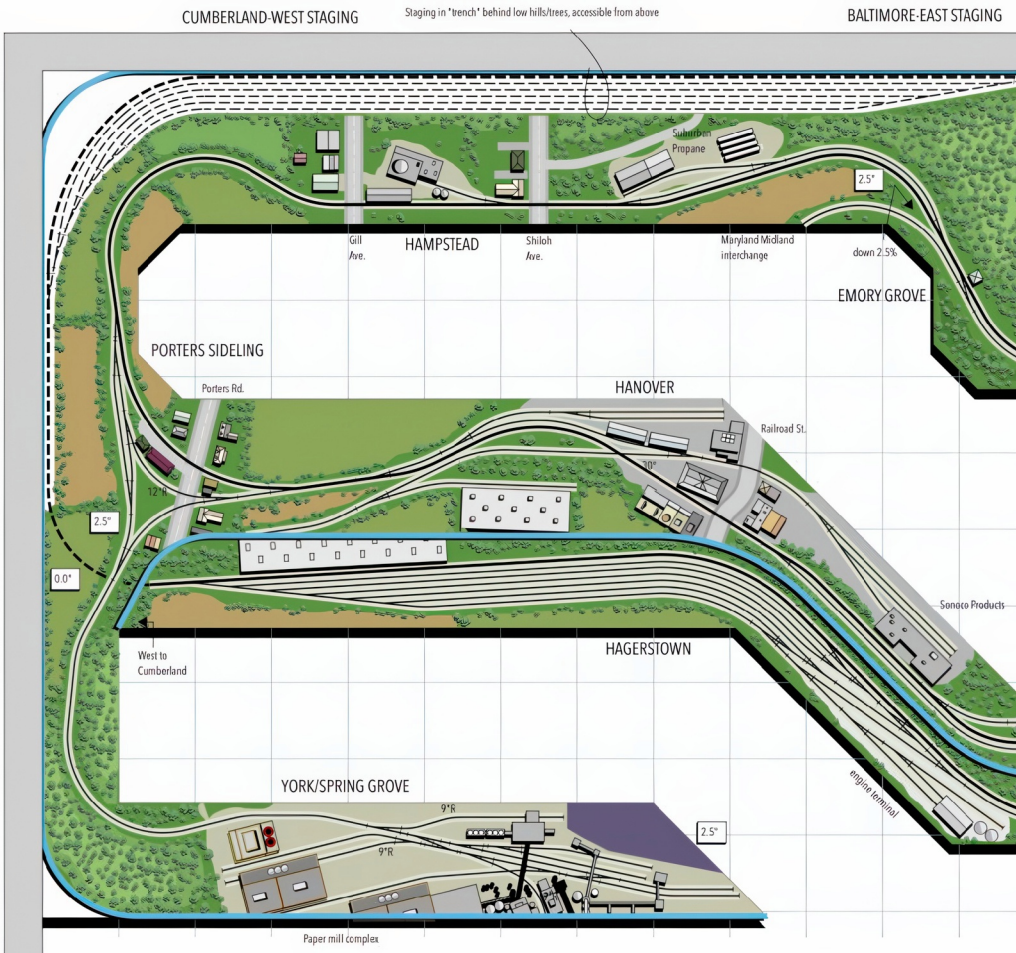
Recommendations for success:

1. **Phased construction:** Complete in sectional/modular manner using TOMA (consider Durango-Mancos-Hesperus as phase one)
2. **Prototype research:** Study the actual RGS to inform modeling decisions
3. **Hidden track design:** Ensure adequate access, lighting, and detection systems
4. **Ops system:** Develop car cards, waybills, and timetables early
5. **Budget planning:** Create realistic budget with contingency funds
6. **Documentation:** Maintain construction and wiring records
7. **Flexibility:** Modify details as construction reveals practical needs

Final Verdict: This outstanding design successfully translates Colorado mountain railroading into a practical (if ambitious) model railroad. The operational variety, scenic potential, and prototype inspiration could provide decades of enjoyment.

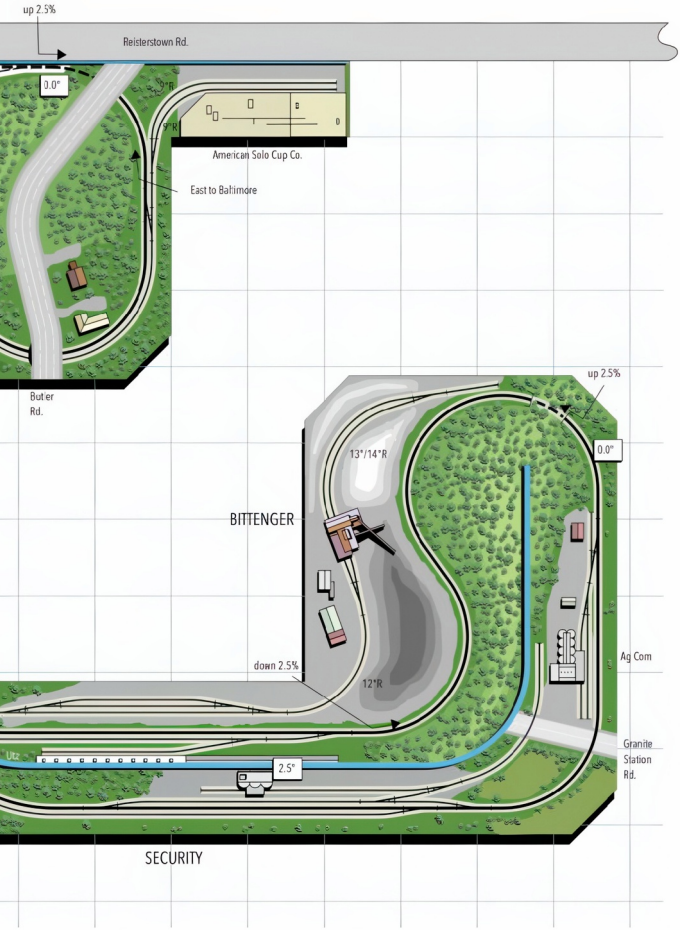
However, the scope demands serious consideration of available time, space, and resources. For experienced modelers with appropriate dedication, this represents an opportunity to create a truly impressive layout.

For those uncertain about the commitment, consider scaling back or developing clearly-defined phases (TOMA enables this nicely) with early operational capability as a key goal. ■



6. CSX Hanover Sub - Our rating: ★★★★ (4 out of 5 stars)

This layout excels at delivering realistic prototype operations within a compact footprint, featuring generous track standards and a diverse range of industries. The real-world CSX basis offers useful guidance on potential layout ops. We deducted one star due to limited scenic opportunities and narrow benchwork that restricts scenic depth, but it's still a solid choice for modern Class I railroading enthusiasts. With thoughtful planning and disciplined operations, you'll enjoy years of engaging, prototype-focused op sessions.



CSX Hanover Sub
- Adam Henry

N Scale
3/8"=1 foot
Min. radius 15" main
9" industrial
All turnouts #6
Max grade 2.5%
(paper mill design after B. Kempinski)

designed by Robert W. Sprague
www.annapolisjunctionrr.com

VIEW READER COMMENTS

Analysis: CSX Hanover Sub

Scale: N scale – offers longer trains and broader scenes in limited space with good detail.

Dimensions: 11' × 21' (~231 square feet) – fits a spare bedroom, garage bay, or basement area.

Continued on next page ...

Analysis: CSX Hanover Sub, continued ...

Era and prototype: Modern CSX Hanover Subdivision, Maryland/ Pennsylvania – real-world Class I railroading with clear guidance for operations, rolling stock, and industries.

Track standards: 15" minimum mainline radius, 9" minimum industrial radius, #6 turnouts throughout – generous standards for N scale that eliminate operational compromises.

Staging: Cumberland (West) and Baltimore (East), both concealed in trenches behind scenic fascia.

Layout configuration: Point-to-point with continuous running connection for extended sessions.

Operational characteristics

Operating scheme: Point-to-point between two staging yards representing major CSX terminals, with continuous running .

Switching opportunities: Eight distinct communities with diverse industries: Porters, Hampstead, Hanover, York/Spring Grove, Hagerstown, Emory Grove (with engine terminal), Security, and Bittenger. Strong industry mix includes a paper mill complex, Sonoco Products, American Solo Cup, and Suburban Propane, generating diverse car types.

Staging capacity: Multiple parallel tracks at both ends, though exact capacity unspecified.

Group ops: Should handle 2-4 operators comfortably.

Crew operation vs. lone wolf: Designed for crew operations: one dispatcher, one or two road crews, and one or two local/switching crews. Mirrors prototype ops and keeps all participants engaged.

Operating session potential: Excellent. Industry variety generates diverse traffic patterns – unit trains, manifest freight, and special movements. The Maryland Midland interchange adds routing complexity.

Technical considerations

Minimum radius: 15" mainline, 9" industrial – generous for N scale, equivalent to ~21" in HO. Handles modern diesels and full-length 89-foot flatcars, auto racks, and articulated intermodal cars without restrictions.

Grades: 2.5% maximum is manageable for modern diesels.

Turnout sizes: #6 throughout ensures reliable operation and allows higher speeds.

Track spacing and clearances: N scale's small size allows prototype spacing without consuming excessive space.

Reverse loops and wiring: The wye creates a reverse loop requiring an auto-reverser for DCC or careful block wiring for DC.

Accessibility: Continuous perimeter accessibility allows operators to follow trains without duck-unders. However, some areas require reaches across benchwork.

Staging design: Concealed in trenches behind scenic fascia, maintaining visual illusion of distance.

Space utilization and design

Efficient use of space: The 11' × 21' footprint maximizes operational potential. Point-to-point configuration with staging creates impression of a much larger railroad.

Mainline run length: Good for N scale, allowing trains to develop speed and create impression of distance.

Reach-in distances: Generally good with perimeter accessibility, although some interior tracks may present challenges.

Continued on next page ...

Analysis: CSX Hanover Sub, continued ...

Aisle width: Around-the-walls design provides comfortable aisles.

Visual separation: Multiple towns give natural separation, but flat Maryland/Pennsylvania terrain lacks dramatic elevation changes.

Scenic opportunities: Modern prototype lacks visual drama of mountain railroads or steam-era operations. However, offers opportunities for contemporary industrial facilities, modern signaling, and Mid-Atlantic urban/suburban scenery.

Benchwork depth: Relatively narrow in several locations, limiting scenery depth and creating "shelf-like" appearance.

Design strengths to highlight

Prototype basis: Real CSX operations on an actual subdivision. Modelers can research prototype, study traffic patterns, and replicate authentic consists and procedures.

Industry variety: Exceptional for this size. Paper mill alone could occupy an ops crew for an entire session. Industry mix generates diverse traffic preventing repetitive operations.

Generous track standards: 15" minimum radius and #6 turnouts. Handles prototype-length trains and modern equipment.

Staging yards: Provide essential "rest of railroad" connections.

Engine terminal: Emory Grove facility adds operational depth beyond freight movements—locomotive assignments, servicing, power management.

Modern era flexibility: Diverse diesel roster from multiple generations—Geeps, SD40-2s, C40-8s, Dash-9s, GEVOs.

Multiple operating districts: Eight communities create natural districts accommodating several crew members simultaneously.

Potential concerns and limitations

Scenic limitations: Modern prototype and flat terrain lacks visual drama of mountain railroads or steam-era operations.

Benchwork depth: Narrow in several locations, limiting scenery depth.

Paper mill modeling challenge: Large, complex facility requires substantial scratchbuilding or kitbashing.

Reach issues: Some areas require reaches across benchwork, particularly challenging for operators with limited mobility.

Staging capacity: Appears modest relative to online industries, potentially limiting train variety during extended sessions.

Continuous running temptation: Loop design may tempt operators away from more realistic point-to-point operations.

Overall assessment

Best suited for: Modelers interested in modern Class I operations wanting prototype fidelity without a basement-filling empire. Ideal for those valuing operational realism over scenic drama. Intermediate to advanced modelers will appreciate prototype basis, while generous track standards make it accessible to those developing trackwork skills.

Notable features: Real CSX prototype • Exceptional industry variety • 15" minimum radius • Point-to-point staging • Eight distinct communities • Engine terminal • Modern era diesel roster • Concealed staging • Perimeter accessibility • Manageable 231-square-foot footprint

Adaptation potential: Basic design adaptable to other Class I prototypes (NS, BNSF, UP) or regional railroads. Footprint modifiable for different rooms. Industry mix adjustable for different regions. Could adapt to earlier diesel eras (1950s-1970s).

Bottom line: Excellent modern prototype layout balancing mainline running with diverse industrial switching in manageable space – ideal for modelers prioritizing operational realism over scenic drama. ■

Adaptive layout building

Model Railroad Hobbyist | January 2026

VIEW READER COMMENTS

MRH STAFF CASE STUDY: HOW TIM DUDLEY TURNED LAYOUT CONSTRAINTS INTO OPPORTUNITIES ...

WHAT DO YOU DO WHEN YOUR LAYOUT DREAM OUTGROWS YOUR space? Most modelers face this dilemma eventually, and the conventional wisdom suggests starting from scratch. Tim Dudley's Florida Central project demonstrates a more clever approach, transforming limitations into design advantages while salvaging hundreds of dollars in materials and countless hours of previous work.

Tim's journey from a portable Camas Prairie layout to a wall-mounted Florida Central switching layout offers lessons for any modeler facing

constraints in space or budget, or otherwise needing to pivot modeling direction.

Let's examine how intelligent material reuse, constraint-driven design thinking, and modern research tools combined to create a layout that's potentially better than the original.

MATERIAL REUSE: WHY GOOD FOAM NEVER DIES

Tim's starting point was a collection of modules from his Camas Prairie layout, featured in the November 2021 issue of *MRH*. They were built on four-inch insulation foam. Rather than viewing these as "used up" sections locked into a specific track arrangement, he recognized them as premium raw material.

Four-inch foam isn't cheap – expect to pay $80-100 per 4′x8′ sheet depending on your market. Tim had already invested in cutting, shaping, and finishing these sections. The track arrangement was specific to Camas Prairie, but the foam itself was reusable with some out-of-the-box thinking!

Tim cut the sections longitudinally into narrower pieces, and flipped them over. The underside of the foam, protected during the original layout's construction, provided a fresh, smooth surface. This approach works because polystyrene foam is homogeneous – unlike plywood or Homasote, there's no "good side" or structural grain to worry about. You're essentially getting two layout surfaces from every section you originally built.

The practical considerations matter here. When cutting foam, use a fine-tooth saw or hot wire cutter to minimize mess. The flipped sections may have minor imperfections from storage or handling, but these fill easily with lightweight spackling or additional foam scraps.

Tim's approach of filling gaps with spray foam and reinforcing joints with 1″x2″ strips demonstrates engineering insight – the foam provides the surface, but dimensional lumber adds structural integrity where sections meet.

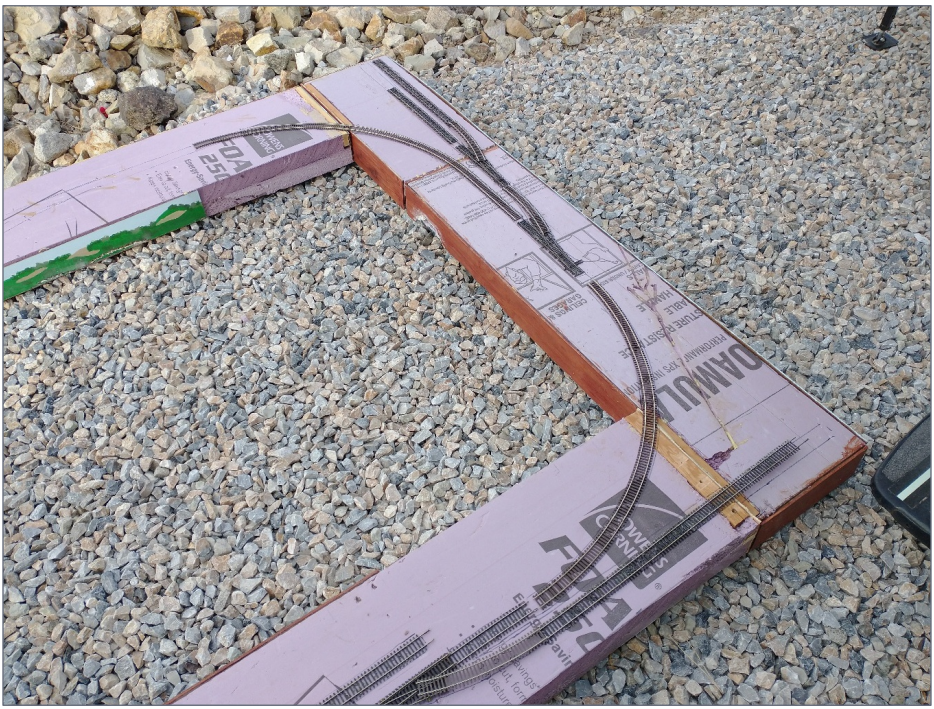
Why this matters for you: If you're contemplating a layout change, don't automatically assume your existing benchwork is worthless. Foam sections, in particular, are remarkably adaptable.

Even if you're not reusing the exact footprint, foam can be re-cut, combined, or repurposed for industries, yards, or scenic areas on a completely different layout. The money you've already spent on materials needn't be lost.

1. Smart material reuse in action: These repurposed foam sections from Tim's Camas Prairie layout (November 2021 *MRH)* simply were flipped over to provide fresh surfaces. Note the spray foam filling gaps and the 1″x2″ wood strips creating solid joints – this combines the light weight of foam with the structural strength of lumber where it counts most.

WHEN CONSTRAINTS IMPROVE YOUR DESIGN

Here's where Tim's story gets really interesting. His original plan called for a rectangular continuous-run layout in the middle of the one-car garage, measuring approximately 2'x14' when assembled – a modest footprint by many standards, but still a significant chunk of garage real estate. When his wife vetoed the floor space request (a scenario many modelers will be familiar with), Tim could have scaled back his ambitions or negotiated for a smaller rectangle.



2. Track planning with mixed resources: Tim combined salvaged flex track with new sectional track, demonstrating another cost-saving principle. If your old track is in good condition (no kinks, solid rail joiners, clean ties), there's no reason not to reuse it. The key is testing each piece for proper gauge before committing it to your new plan.

Instead, he made a design pivot that actually improved the layout: wall-mounting. More optimization than compromise, wall-mounted shelf layouts offer operational advantages middle-of-the room layouts can't match:

Access: You can reach every part of the layout without ducking under benchwork or crawling into access pits. This is a must for a switching layout where you're constantly coupling and uncoupling cars.

Viewing angle: Shelf layouts naturally allow creating scenes higher from the floor, offering realistic viewing perspectives and better photography opportunities.

Space efficiency: The floor beneath remains usable for storage, workbenches, or (in Tim's case) keeping the garage functional for its intended purpose.

Expandability: Wall-mounted sections can grow incrementally as space allows, without requiring a complete rebuild.

The lesson here: Rather than view space limitations as problems, consider possible opportunities to rethink and develop a better design. Tim's wall-mounted layout is more operationally interesting and more practical to build and maintain than his original rectangular plan was.

MODERN RESEARCH TOOLS: GOOGLE EARTH AS LAYOUT PLANNING PARTNER

Tim's third smart decision involved his approach to prototype research. He started with a track plan by Robert Chant for the Florida Central Railroad set in the Orlando area. Tim used this plan as a framework for his own research into actual Orlando-area industries.

This step is where Google Earth becomes invaluable for modern modelers. Here's the process Tim followed, that you can replicate:

1. Identify the prototype area: Tim focused on Orlando's industrial districts served by Florida Central. Google Earth lets you explore these areas virtually, identifying businesses with rail sidings.

3. Track planning on the first section, where the Orlando Coca-Cola plant and Redi-Gas Propane facility will be. Tim's use of Elmer's White Glue and pushpins is time-tested – the glue provides a strong bond to foam, while pushpins hold everything in place during drying without damaging track or ties. This method also allows for adjustments during the test-fitting phase.

2. Document structures: Using Google Earth's Street View, you can capture building facades, loading dock configurations, and track arrangements from multiple angles. Capture and save screenshots for reference.

3. Create structure flats: For background buildings or industries where full 3D modeling isn't necessary, these photos can be printed and mounted on foamcore or cardstock to create convincing structure flats. Tim used this technique extensively.

4. Verify operations: Google Earth's historical imagery feature lets you see businesses at different times, sometimes revealing

4. The completed first module demonstrates the wall-mounted concept: The industries are positioned for easy reach and clear viewing. This section establishes the visual rhythm of the layout – industries separated by scenic breaks, with track arrangements that suggest purpose.

what commodities they handled based on visible rolling stock or loading patterns.

This research method offers several advantages over traditional prototype modeling:

Accuracy: You're working from actual structures, not generic "industry" buildings.

Variety: Real industrial areas have visual diversity that makes a layout more interesting.

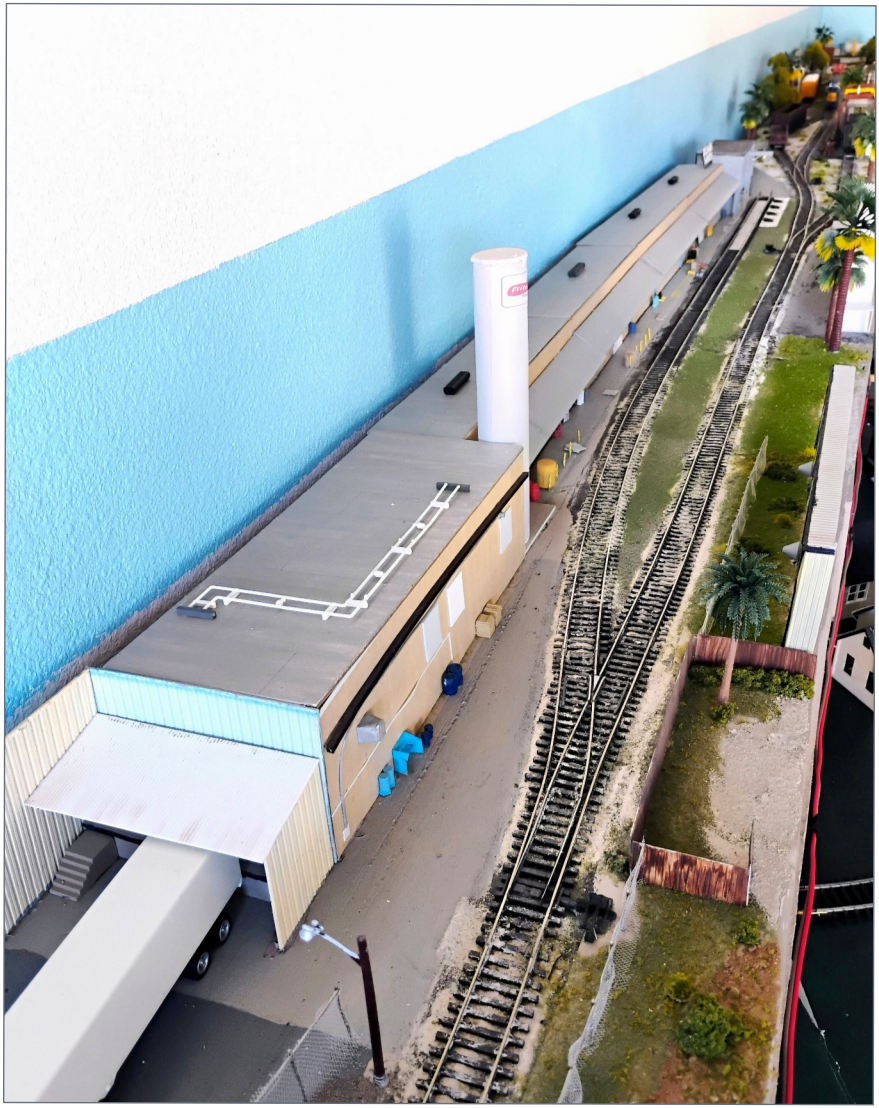
Operational justification: When you model actual businesses, you can research what they receive and ship, making your car routing more realistic and possibly better than you might devise with freelancing.

Cost efficiency: Structure flats cost much less than commercial kits, and they provide convincing buildings.

Tim's willingness to switch prototypes entirely – from Idaho's Camas Prairie to Florida's industrial Orlando – demonstrates another important principle: good modeling techniques transcend specific prototypes. His foam sections, track-laying skills, and scenery methods were suitable for either choice. The prototype provides the theme and operational character, but the fundamental modeling skills remain transferable.

The structure flat creates a convincing industrial presence without the expense or space requirements of a full 3D structure. This selective compression works because the track arrangement and loading area are modeled in three dimensions where the railcars go, while the building facade provides a believable visual context.

This photo also demonstrates effective scene design – the fenced foreground industry is fully accessible for switching [see 6], while the background industry adds visual depth and suggests a larger industrial area beyond the modeled space. Both industries justify different car types, enriching operations.



5. Second module track layout for the Frito-Lay plant. This section shows Tim's planning process – track positioned to serve the industry logically while maintaining clearances and operational flow. The Frito-Lay plant is a great choice for a switching layout – it receives grain cars and ships finished product in boxcars, providing varied car movements.

6. Module 3 features Florida Potato & Onion (FP&O) with Tri-Vest Piping in the fence-enclosed area in the foreground. This composition demonstrates effective scene design – the background industry is fully accessible for switching, while the fenced foreground industry adds visual depth and suggests a larger industrial area beyond the modeled space. Both industries justify different car types, enriching operations.

The structure flat creates a convincing industrial presence without the expense or space requirements of a full 3D structure. This selective compression works because the track arrangement and loading area are modeled in three dimensions where the railcars go, while the building facade provides a believable visual context.

VIEW READER COMMENTS

7. Another view of the Florida Potato & Onion (FP&O) area. CSX 6211 leads a local past spotted boxcars. This view illustrates why shelf layouts work so well for photography – the eye-level perspective and uncluttered background create realistic images. For operators, this viewing angle also makes coupling operations and reading car numbers effortless.

This photo also demonstrates effective scene design – the fenced foreground industry is fully accessible for switching [see 6], while the background industry adds visual depth and suggests a larger industrial area beyond the modeled space. Both industries justify different car types, enriching operations.

8. This high-angle view shows how Tim uses vertical elements (the overpass) and empty "negative space" to create visual interest and suggest a larger world. The distant boxcar at Hood Lumber draws the eye and implies ongoing operations beyond the immediate scene.

9. On the other end of the fourth module sits Landers Metal Recycling. Metal recyclers are ideal switching layout industries – they ship and receive scrap in gondolas and hoppers, and typically have interesting track arrangements with multiple spots. The visual clutter of a scrap yard also provides excellent scenic opportunities. A small interchange yard (visible staging) sits behind Landers, with the two tracks supposedly going off to another railroad line. An interchange can take any car, adding a lot of operational interest at the cost of very little space.

10, 10a. Two views of the connecting module with Outdoor Living Products. This section bridges the Frito-Lay and Hood Lumber modules, demonstrating how Tim maintained operational interest throughout the layout. Rather than treating this as mere “track between industries,” he added another switching destination, maximizing the layout’s operational density.

11. Banker Steel South is an opportunistic addition. When Tim discovered available space on the Frito-Lay section's frontage, he researched and added this steel service center. This illustrates an important planning principle: build flexibility into your design so you can add industries as space and inspiration allow. Steel service centers receive structural steel on flatcars and bulkhead flats, adding another car type to your roster needs.

VIEW READER COMMENTS

TAKEAWAYS: APPLYING TIM'S APPROACH TO YOUR LAYOUT CHALLENGES

Tim Dudley's Florida Central project offers a master class in adaptive layout building. Here are the key principles you can apply to your own modeling:

1. View existing materials as resources, not constraints. Foam, lumber, or even track from a previous layout represents both money already spent and skills already developed. Before buying new materials, audit what you have and consider how it might be repurposed.

2. Let constraints drive creativity. Tim's wall-mounted design is more interesting than his original plan precisely because space limitations forced him to think creatively. When you face a constraint, ask: "How might this lead to a better solution?"

12. Detail view of Banker Steel South during unloading operations: The bulkhead flatcar being unloaded provides operational interest and photo opportunities. Notice how even this late addition maintains the layout's standard of realistic industry placement and purposeful track arrangements.

3. Leverage modern research tools. Google Earth, Street View, and online historical resources give you prototype access that previous generations of modelers couldn't have imagined. Use these tools to model actual businesses and create convincing scenes at minimal cost.

4. Good techniques transcend specific prototypes. Tim's willingness to switch from Camas Prairie to Florida Central demonstrates that fundamental modeling skills – benchwork, track laying, scenery, operations planning – work regardless of your chosen prototype. Don't feel locked into a prototype choice just because you've started building.

5. Build incrementally with flexibility. Tim's modular approach allowed him to adapt his plan as he built, adding Banker Steel South when space became available. Design your layout so you can expand, modify, or enhance it without requiring complete rebuilds.

6. Optimize for operations and access. The wall-mounted configuration puts every industry within easy reach and easily allows setting an ideal viewing height. When planning your layout, prioritize how you'll actually use it.

FINAL THOUGHT

Tim's Florida Central layout proves that constraints, material limitations, and mid-project changes don't have to compromise your modeling goals.

With creative thinking and out-of-the-box resource management, you may actually discover better solutions than you'd have found otherwise. The next time you face a layout challenge, remember it might not be a problem to solve, but an opportunity to discover an even better layout hiding there. ☑

TIMOTHY F. DUDLEY

Timothy's Dad gifted him a trainset when he was a boy. The rest was history.

He and his brother then built a 4x4-foot oval layout on a piece of plywood that barely fit under their bunk beds. Since then Timothy has built a dozen or so layouts in N and HO scales.

Timothy served in the US Navy from 1984-1990 and is now a licensed Assemblies of God pastor (www.newlifestgeorge.com), in Hurricane, Utah. He enjoys playing on the worship team, train watching, and writing. ■

Savvy Modeler Online

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How to model awesome looking concrete

YouTuber Craig of **Craig's Modeling Corner** demonstrates step-by-step how he models his fantastically realistic concrete.

VIEW READER COMMENTS

Craig shows the entire process of modeling the concrete for a scene he made for his Fine Scale Miniatures kit he built. The entire process is fairly easy but it's hard to argue with the results. One note: the music is kind of annoying, so we scrolled down in the video description and got the YouTube auto-generated transcript, then muted the sound. ☑

GREAT MODELER VIDEOS ON THE WORLD WIDE WEB

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RICHARD BALE AND JEFF SHULTZ
REPORT THE LATEST HOBBY
INDUSTRY NEWS ...

INDUSTRY NEWS

The owner of **LaBelle Woodworking Company** has announced his intention to retire effective June 1, 2026. Absent an offer to purchase the company, the company will cease business on that date. LaBelle produces models in the LaBelle, Silver Streak, Red Ball, Mainline Models, Ye Olde Huff and Puff, OnTrack, and Valley Car Shops lines in HO, HOn3, S, O, and On3 scales and gauges. It began business in 1947 in Oconomowoc, Wisconsin and is now located in Cheyenne, Wyoming. Inquiries and requests for additional information can be made to info@labellemodels.com. Info: labellemodels.com

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The **Roomettes** line of building interior and lighting products has been sold to Miniature Interiors. The website will remain roometteslighting.com.

THE LATEST MODEL RAILROAD PRODUCTS, NEWS & EVENTS

CLUB CARS

The **Eastern Maine Model Railroad Club** has announced the availability of the club's 50th anniversary car. Decorated for the Katahdin Valley Railroad, two Atlas 50′ rib side box cars with road numbers 1976 and 2026 have "50th Anniversary" on the door, with an additional four separately numbered cars available without the 50th Anniversary marking.
Info: easternmainemodelrailroadclub.square.site

HO SCALE PRODUCT NEWS

The 3-pack Chesapeake & Ohio open hopper set #8186 from **Accurail** is stated to be in production with a shipping date of mid-January.

As part of Accurail's December announcement, it was announced that a limited run of three Baltimore & Ohio 50-ton 2-bay offset hopper kits were also being prepared for production. One car will have the 1941 "Wartime Kuhler" paint scheme, the other two will have the 1947 "13 Great States" paint scheme.

Also in the December announcement is a Lehigh & New England 40′ PS-1 steel boxcar kit with a build date of 3-56.

The final item in the December announcement is a Conrail 2-Bay ACF covered hopper kit dated 10-80. All Accurail kits come with Accumate couplers and Delrin wheelsets in appropriate trucks.

Products in the December announcement are expected to be produced in March/April 2026. Info: accurailinc.com

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J. Shultz

GE DASH-9

The General Electric Dash-9 locomotive line was produced between 1993 and 2005 as an improvement on the Dash-8 locomotive series from the mid-1980s that had lead General Electric past EMD as the largest locomotive manufacturer in North America. Powered by a turbocharged 16-cylinder 7FDL 4-stroke diesel prime mover, the standard Dash-9 produced 4,400hp and was equipped with a North American safety cab. Norfolk Southern was an outlier, ordering 125 C40-9s with standard cabs and prime movers set to 4,000hp before switching to safety cabs for 1,090 additional C40-9W locomotives. Norfolk Southern upgraded all of its 4,000hp locomotives to 4,400hp, AC traction, and new cabs beginning in 2015, with the resulting locomotive dubbed the AC44C6M.

With an anticipated arrival date of June 2027, **Athearn** has announced a new run of Genesis GE Dash-9 locomotives. Road names in the run include BNSF (Primed for Grime), Santa Fe (as-delivered), Union Pacific (ex-SP and ex-SP patch Primed for Grime), Southern Pacific (as-delivered), BC Rail, and Kaiser Steel (Legendary Liveries).

The locomotives will be available both in Quick Plug with a 21-pin NEM connector and

SoundTraxx Tsunami2 sound versions with full Genesis lighting features and details.

Included in the Genesis line for the June 2027 schedule is a run of EMD FP7 locomotives. Locomotive road names for this run are Atlanta & West Point, Canadian Pacific, Georgia Railroad, Louisville and Nashville, Reading, SEPTA, VIA Rail, and Western Railway of Alabama.

As well as the Sound and DCC-ready Quick Plug versions, models will include road name specific details including ditch lights as appropriate.

Three Wheeling and Lake Erie SD40-2 locomotives are part of the announcement for June 2027, with two in the black and orange “Flying Letter” scheme and a third in a Semiquincentennial red, white, blue, and gold scheme for the 250th Anniversary of the United States. The Athearn line locomotives are DCC-Ready with a 21-pin NEM plug or sound equipped with SoundTraxx Econami DCC/Sound.

A Genesis ACF 4600 Cu. Ft. covered hopper is also part of the scheduled June 2027 release, with models lettered for BNSF, Burlington Northern, Burlington, Pennsylvania, Santa Fe, and Union Pacific. Three separate body styles are part of this release, the early style with high side ladder and brake wheel, a mid-style with a low brake wheel and short side ladders on both ends, and a late (post-1971) style that added double side stiffeners.

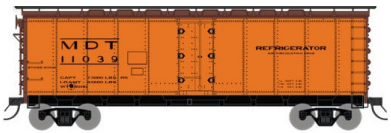
The announcement for the Athearn 60-foot Gunderson boxcar includes several Legendary Liveries paint schemes. Prototype road name paint schemes are BNSF, Canadian National, and Railbox (TBOX), with Legendary Liveries paint schemes being New York Central "Pacemaker", Southern Pacific "Overnight" (black) and "Overnights" (gray), CB&Q, Maine Central, Northern Pacific, and New Haven. The ACF 4600 covered hoppers and 60-foot Gunderson boxcars will be available for sale individually and in three-packs.

A car described as a "26-foot PC&F ore car low side tight-bottom with load" will be available in Bessemer & Lake Erie, Cartier Railway, Conrail, Kaiser Steel, Southern Pacific, and Vale Inco Ltd. Suitable from 1960 to today depending on the road name, the cars were designed to haul iron ore exclusively. The load is removable and the cars will be available in four-packs.

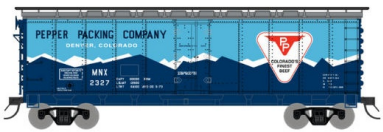
A new run of "beer can" tank cars finishes up the June 2027 schedule, with the 30-ft NACC 8K tank car being announced in several paint schemes, including Dow Chemical Company (DOWX), General American Marks Co. (GATX), North American Tank Line (NATX), Union Carbide Corp. (RAIX), and Union Tank Car Co. (UTLX). The GATX car is in a Primed for Grime scheme and all cars will be available for individual sale. Orders for all products in this announcement are due February 27, 2026.
Info: athearn.com

ClassOneModelWorks.com has released a new load kit suitable for a depressed center flatcar, the Terex Truck Bed with Tires. The kit includes the Terex truck bed with overhead cab protector, a rear axle with cribbing, cribbing for the truck bed, two stacks of tires with cradles, and cabling for securing the load to the flatcar.
Info: classonemodelworks.com

English's Model Railroad has introduced several new HO Real Coal loads, including a Real Ore load for the Bowser G39 ore car. New anthracite loads include the WaltersMainline 100-ton 4-bay hopper, WaltersTrainline offset hopper, Walthers Gold Line 100T 3-Bay, Athearn Bethgon, Bachmann 40-foott Quad Hopper, Bachmann 55-ton USRA hopper, and Bachmann 100-ton 3-bay hopper.
Info: www.bowser-trains.com

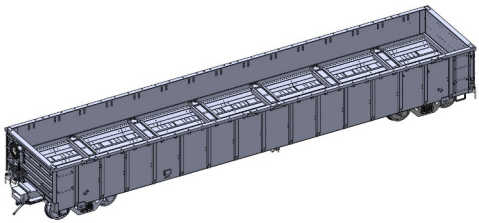


InterMountain Railway has announced a new run of the R-40-23 40′ steel ice reefer in HO scale. Introduced in the post-WWII years, the current release includes cars with paint schemes ranging from 1949 into the 1970s.



Road names in this release are Armour Refrigerator Line, Bangor & Aroostook, Burlington Northern, Gulf Mobile & Ohio, and Illinois Central. Also included are Merchant Despatch, New York Central, Northern Pacific, Pacific Fruit Express (3 schemes), and Pepper Packing Company.
Info: www.intermountain-railway.com

Lines West Products has released an undecorated Southern 50′6″ Pullman Standard double-door waffle boxcar kit in four different door variations. The first variation has the as-built original Pullman Standard doors, with additional versions including Superior 5 panel, Superior 6 panel, or both Superior 5 and 6 panel replacement doors. Decals for two styles of Southern "Green Light" and both Southern and Norfolk Southern lettering are available. Trucks and couplers are not included; Tangent 70-ton Barber S2 Birdsboro trucks (with Hyatt bearings) and Kadee #156 long shank couplers recommended.
Info: lineswestproducts.com



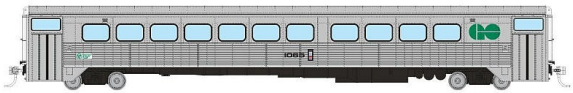
Maple Leaf Trains has announced their first freight car project, 52'6" Hawker Siddeley and National Steel Car gondolas. Featuring a 3D-printed shell, eight versions of the cars will be produced, including As Delivered, coil cradle, rebuilt, and with other modifications. Trucks and couplers will not be included.
Info: mapleleaftrains.com

Rapido Trains has made several recent announcements about new model projects. Leading the way are the HO scale GO Transit GMD GP40TC (Toronto Commuter) locomotives, a GP40 on a lengthened frame to accommodate a second smaller prime mover for head-end-power (HEP). Serving just over twenty years from 1967 to 1988 with GO, the eight locomotives were sold to Amtrak where they were in service primarily in the upper Midwest and east coast.

They are still in service on Amrak as the GP38H-3, working maintenance of way. Paint schemes include:

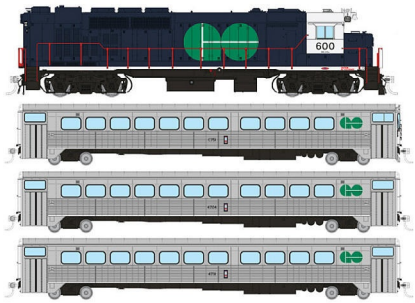
- Dark blue with red handrails and small CN on cab
- Dark blue, white cab, red handrails, large green GO on the long hood
- Traditional green and white GO scheme
- Amtrak Phase III

The locomotives will be available with Sound/DCC and a MoPower capacitor or DC/DCC ready.



To accompany the GP40TCs, Rapido has also announced the single level Hawker Siddeley RTC-85 commuter coaches. Scaled from blueprints and measurements of a car at the Toronto Railway Historical Association Roundhouse, the RTC-85 series has both a coach and a cab car version.

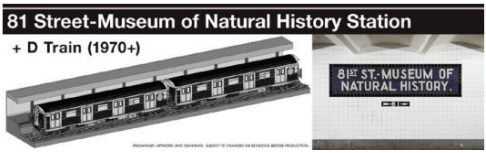
After their service on GO, RTC-85s were leased to the MBTA in Massachusetts and MARC in Maryland, with 23 sold to Ontario Northland for their passenger trains and Montreal's AMT acquiring most of the rest in 1994, retiring them in 2010. Multiple GO and AMT paint schemes are available for preorder.



The GP40TC, 2 coaches, and the cab car will be available in a boxed set with multiple paint schemes and numbers available.

The last part of the GO equipment announcement is the Auxiliary Power Control Units (APCUs). Built from the cores of former Ontario Northland FP7s with 900hp HEP generators, the APCUs were used as cab cars and to provide electricity for trains with non-HEP-equipped locomotives. In addition to their Canadian service, they were loaned to Los Angeles' Metrolink along with several multilevel coaches in the aftermath of the 1994 Northridge earthquake. One was also sold, along with a non-HEP-equipped GP40-2W, to Florida's Tri-Rail, after which the APCU was donated to the Gold Coast Railroad museum. They are available in a DC/Silent or with a LokSound V5 DCC/Sound decoder.

Continuing with the passenger orientation of Rapido's December announcements is the HO scale Budd R32 "Brightliner" NYCTA subway cars. In service from 1964 through 2020, most of the 600 R32s were used to create artificial reefs off the coast of Delaware, with several being preserved.



The cars will be available in two car sets, either powered or unpowered, with the powered units available both without and with sound. Multiple lighted display platforms will be available, including 34-Street Penn Station, 81 Street – Museum of Natural History Station, Broadway – 23rd Street Station, and the Broad Street Station, as either just the platform or the platform including two unpowered lighted cars.

VIEW READER COMMENTS

J. Shultz

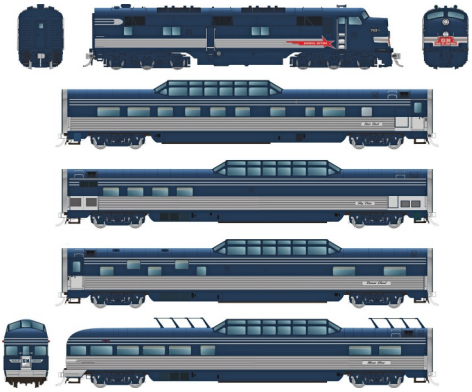
EMD E7 Passenger Loco

The EMD E7 passenger locomotive was created during WWII, entering service in 1945. Before it was superseded in mid-1948 by the E8, 428 A-units and 82 cabless B-units were built. Featuring a bulldog nose in place of the more sharply slanted nose of the previous E-series locomotives, the E7 had square windows along the sides of the locomotive instead of the F-series' round portholes. The E7 was equipped with two 1,000hp 12-cylinder non-turbocharged 567A prime movers, each driving its own generator. Each generator powered the two traction motors on one of the two A1A 3-axle trucks.

Adding to Rapido's stable of EMD E-unit locomotives, they now developing an HO scale model of the E7. Beginning in 1945, over 500 E7A and E7B units were built before being superseded by the E8 in 1949. One E7, former PRR #5901, has been restored and is on display at the Railroad Museum of Pennsylvania.

Road names and paint schemes in this first run are Baltimore & Ohio, Boston & Maine, Chicago and North Western, Burlington, Maine Central (2 schemes), New York Central (A&B), Pennsylvania (A&B), Seaboard (A&B), Southern, Southern Pacific (A&B), Spokane Portland & Seattle, and Union Pacific (A&B). Both Phase I and Phase II carbodies are being produced, with both DC and DCC/Sound units available for preorder.

Also in HO scale, Rapido is using the new E7 model to create the General Motors *Train of Tomorrow,* an all-dome passenger train that toured the United States and Canada between 1947 and 1950 before being sold to the Union Pacific. The passenger



cars are the dome coach *Star Dust,* the dome sleeper *Dream Cloud,* the dome diner Sky View, and the dome lounge/observation *Moon Glow.*

Running between Portland, Oregon and Seattle, Washington, the Union Pacific train was informally known as the *City of Seattle.* The *Train of Tomorrow* and the Union Pacific trainset will only be available in boxed sets with both DC and DCC/Sound versions available.
Info: www.rapidotrains.com

All artwork and graphics are courtesy of Rapido Trains

ScaleTrains is taking preorders for Norfolk Southern #8099, a Heritage unit in the Southern Railway paint scheme. Recently added to the run currently scheduled to arrive in June 2026, the ES44AC includes all of the standard Rivet Counter features and will be available in DC with a 21-pin plug or with included ESU LokSound 5 DCC/Sound.
Info: scaletrains.com

Tangent Scale Models' January 2026 release is a run of 3400 cu. ft. quad coal hoppers. Originally ordered by the Bessemer & Lake Erie in 1975, some received rebuilds in the 2000s but most are still in service on the B&LE and Canadian National today. 24 new numbers are available in the 1975 delivery paint scheme and 24 numbers in a post-2005 repaint that includes conspicuity stripes.

Two cars have been released in an orange paint scheme to represent two experimental hoppers built in 1976 with modified outlet gates. However, the outlet gates on the models are the same as the 1975 delivery cars. A painted but unlettered car in black is also available.
Info: www.tangentscalemodels.com


J. Shultz

AMTRAK VIEWLINER

The Amtrak Viewliner I sleeper cars were designed to replace the Heritage Fleet sleeper cars inherited from the now freight-only railroads. Used on Eastern US routes where low clearances prevented the use of Superliner cars, the Heritage and Viewliner cars are single-level cars. Originally designed in cooperation with the Budd Company, the cars employed an innovative assembly method, using self-contained modular interiors that were separate from the external shell. 50 Viewliner I sleepers were built between 1995 and 1996 by Morrison-Knudsen and were completed by Amerail when M-K went bankrupt. These cars allowed Amtrak to retire its Heritage Fleet sleeper cars, which were becoming problematic for environmental reasons. The cars were originally alphabetically named "Xxxxxx View", beginning with American View and ending with Winter View. As the cars were being refurbished to Viewliner II standards in the 2020s they were renamed as part of the "River" series and received the Phase VII paint scheme.


Previously released version shown

Announcements from **Walthers** in December include a run of HO scale WalthersProto 85′ Amtrak Viewliner Sleeper cars. Featuring new road numbers and improved tooling, the Viewliners are available in both lighted and unlighted versions. Paint schemes are Phase IV, Phase VI (early), Phase VI, and Phase VII (lighted only). Multiple numbers are available in each scheme.

Also announced by Walthers are new WalthersMainline EMD SD70, SD70M, and SD75I locomotives. Created with new tooling and road name specific details, the models

come in either a Sound/DCC version with ESU LokSound or a standard DC version with a 21-pin NMRA standard plug. Paint schemes on the SD70M include the Union Pacific's *Abraham Lincoln* and standard armor yellow schemes, Lake States Railway's American Semiquincentennial (250th anniversary) and *Pere Marquette* Heritage locomotives, EMD Demonstrator, and Southern Pacific.

The SD75I, which was built with an isolated "whisper cab" and a slightly more powerful prime mover, is available in BNSF with two road numbers. The last version in this release is the spartan cab SD70, which comes in Conrail, Illinois Central, and Norfolk Southern.

Also announced is a WalthersMainline 5-unit 48′ spine car. The car can fit containers or trailers and is equipped with a heavy diecast body. Originally built to Trailer Train specifications, the 48′ All-Purpose Spine Car comes in paint schemes for ATSF, Burlington Northern, Conrail, TTX, and Union Pacific.

Another WalthersMainline announcement is the 50' Bethgon Coalporter gondola. Available as singles or in three-packs, the cars are decorated for BNSF, CSX, CPOX, Conrail, and Norfolk Southern. Additionally, a flexible coal load for the car is available separately in Walthers' Chooch product line.

The SD70/SD70M/SD75I are expected to arrive in Fall 2026, with the Viewliner, Spine car, and Bethgon Coalporters expected Summer 2026.
Info: www.walthers.com

N SCALE PRODUCT NEWS

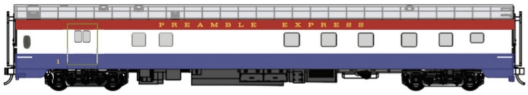
English's Model Railroad has introduced several new N scale Real Coal loads for the Bowser H21 hopper, Bowser Gla hopper, Bluford 2-bay 8 panel and war emergency hoppers; Bluford 3-bay offset side hopper, Bachmann 40ft Quad hopper, and Bachmann 100-ton hopper. The loads are made with finely ground anthracite coal on a 3D-printed base.
Info: bowser-trains.com

InterMountain Railway has announced a new run of the R-40-23 40′ steel ice reefer in HO scale. Introduced in the post-WWII years, the current release includes cars with paint schemes ranging from 1949 into the 1970s.

Road names in this release are Armour Refrigerator Line, Bangor & Aroostook, Burlington Northern, Gulf Mobile & Ohio, and Illinois Central. Also included are Merchant Despatch, New York Central, Northern Pacific, Pacific Fruit Express (3 schemes), and Pepper Packing Company.

InterMountain has announced a run of N scale SD40-2 locomotives in special paint schemes. The three locomotives in this run are the Wheeling & Lake Erie Semiquincentennial (250 years) unit and Union Pacific's Desert Storm and United Way locomotives. The models come in both DC only and ESU LokSound DCC versions.
Info: www.intermountain-railway.com

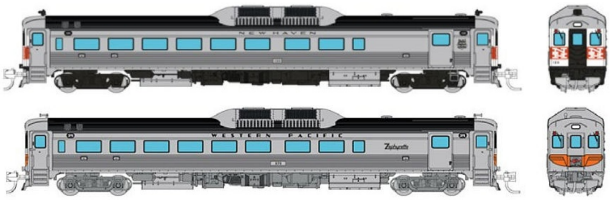
Kato is producing a new run of N scale GG1 locomotives. Capable of running through 249mm radius S curve, it is also powerful enough to pull 15 Broadway Limited cars up a 4% grade. Paint schemes in this run are Conrail #4800 ("Rivets") in its short-lived Bicentennial paint scheme and two road numbers in Amtrak's Phase I paint. The models will be available both in DC and with DCC installed.
Info: www.katousa.com



Railsmith has announced a new body style in the N scale Build-A-Train series, the Dormitory Baggage car. Preorders are open for two different Northern Pacific Dormitory-RPO North Coast Limited paint schemes and Dormitory Baggage cars in Illinois Central's scheme, Great Northern Big Sky Blue, and the American Freedom Train Preamble Express.
Info: lowellsmith.net

As a result of the extremely successful launch of the RDC-1, **Rapido** has announced N scale models of the Budd RDC-2 and RDC-3 in both Phase 1 (1949-1956) and Phase 2 (1956-1962) body styles. While the RDC-1 is an all-coach car, the RDC-2 and RDC-3 include space for baggage or a Railway Post Office section. Road names for the RDC-2 are Alaska Railroad, Baltimore & Ohio, Boston & Maine (two schemes), BC Rail, Canadian National/CN (two schemes), Canadian Pacific/CP (two schemes), Long Island RR, New York Central, New Haven (two schemes), Northern

Pacific, VIA Rail, Western Pacific, and painted/unlettered (two phases).



The RDC-3 will be produced for Alaska Railroad, Boston & Maine (two schemes), British Columbia/BC Rail (two schemes), Canadian National/CN (two schemes), Canadian Pacific/CP (two schemes), Great Northern, Missouri-Kansas-Texas, New York Central, New Haven (two schemes), Northern Pacific, Rock Island, VIA Rail, and painted/unlettered for both phases. Since these models are already tooled, there is a firm order date of March 16, 2026, with an anticipated arrival before the end of 2026.
Info: www.rapidotrains.com
All artwork and graphics are courtesy of Rapido Trains.

STRUCTURES & SCENIC SUPPLIES

A new kit from **Berkshire Valley Models,** Sonny's Shack is available in HO, N, and O scales. The kit consists of laser-cut peel & stick "tarpaper" over laser-cut wood walls and roof. Windows may be assembled with intact or cracked glazing. In HO scale the finished kit measures 4.5″ long x 2. 5″ wide x 1.75″ high.
Info: berkshirevalleymodels.com

Frenchman River Model Works has introduced a set of three cast resin HO scale truck docks. The unpainted castings depict three unique concrete docks with wooden bumpers.

The docks are approximately 1.34″ wide x 0.3″ deep x 0.55 tall. Info: www.frenchmanriver.com

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Inter-Action Hobbies has released two new related kits, Hickey's Diner Truck and Flo's Diner in HO scale. Hickey's is a laser-cut diner structure mounted on a 1954 two-ton Chevy COE truck frame. It includes a full interior including a 3D-printed counter, griddle, fridge, stools, and a coffee urn. The truck parts, including the body, interior, chassis, lights, wheels, and tires are also 3D-printed. Hickey's Diner Truck measures 1.1″ wide x 3.9″ long x 1.8″ tall

Flo's Diner is the Hickey's Diner Truck without the truck and includes additional 3D-printed exterior details such as garbage cans and crates. Flo's measures 1.1″ wide x 2.9″ long x 1.4″ tall.

Info: www.interactionhobbies.com

JL Innovative has introduced modern Mountain Dew vending machines in N, S, and HO scale. The 3D-printed model comes fully decorated and is pre-lit, which requires 12VDC. Info: www.jlinnovative.com

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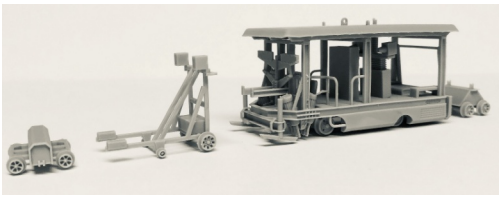
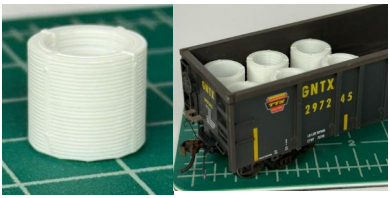
ScaleModelPlans.com has released Plan 2620: Abandoned Ohio Factory. With an HO scale footprint of 10 5/16″ x 5 5/16″,

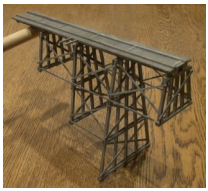
the structure is a two section structure with one part two stories and the other three story, both have the appearance of being constructed with textured concrete block. The Plans for the building are available for download in N, HO, OO, or O scale and print on standard letter sized paper.
Info: www.scalemodelbuildings.com



Recently announced from **Silver Spike Designs** is an undecorated 1960s Tamper, available in O, HO and N scales. The unpowered 3D-printed kit consists of a one-piece body, roof, wheels, and multiple buggy components. The kit can be assembled in transport mode or with the buggies deployed when in use. Paint and decals are not included.
Info: silverspikedesigns.com



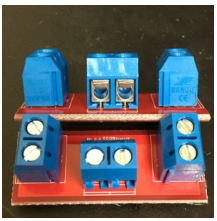
Wallace Locomotive Works has introduced HO scale 3D-printed coiled rebar loads. Sold in six-packs, the white primed coils may require some sanding on the bottoms to sit flat.
Info: store.wallacelocoworks.com



ZYX Creative has added timber trestle components to the Build-A-Trestle series of products. Available in HO and N scales they are 3D-printed in PLA plastic. Bents with bracing and decks are sold in assorted lengths and

heights to construct a trestle to meet your particular needs.
Info: www.zyxcreative.com

ELECTRONICS

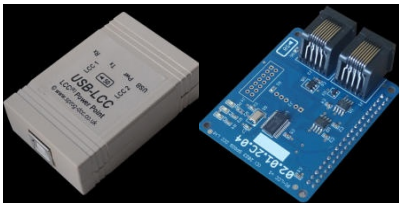


Acculites has introduced the Vampire II, which uses 2-pin screw terminal blocks to connect a two wire connection to up to two others. Intended to be used in place of two suitcase connectors, it can be used to wire a track drop from a DCC bus or any similar connection. They are sold in singles or 10-packs and are reusable.
Info: acculites.com

Berrett Hill Shops has released the Touch Toggle Panel Power Base, which allows a layout owner to turn their entire Touch Toggle system on and off with a single always-on Touch Toggle. When the panel is off, a red indicator on the always-on Touch Toggle remains on and touching it will turn everything connected to it on. With additional hardware the Panel Power Base can control the AC power to the entire layout.
Info: www.berretthillshop.com

Hobby Trax has introduced the Eye Choo camera car. A self-contained camera car, it uses a rechargeable battery and records either 1080p30 or 720p60 video to an SD card. The camera car is not self-powered and will require a locomotive for motive power. The car is equipped with HO gauge metal wheels and a magnetic knuckle coupler. The car does not broadcast live video – the

recorded video must be downloaded from the Eye Choo car to a computer via the SD card or USB. For larger than HO scales it is recommended the modeler remove the trucks from the car and place it on a suitable flatcar.
Info: hobbytrax.us

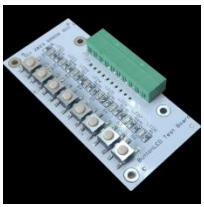


Sprog DCC has recently released a line of Layout Command Control (LCC) products. They are compatible with the NMRA LCC standards and configurable through JMRI or other Configuration Description Information (CDI) programs. The first product is the USB-LCC connector, which allows the modeler to connect their computer via a USB cable to the LCC network for configuration. Similar to that is the Pi-LCC connector that mounts on a Raspberry Pi computer to connect to the LCC network.

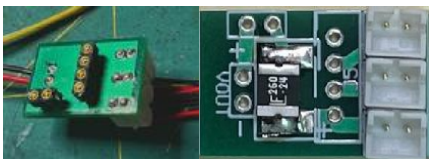
The PWR-LCC connector is a power connection for the LCC network to support LCC devices that use the network connection for their power. Using a 12V 1A power supply it supplies 500 mA to each leg of the LCC network plugged into it.

The IO-LCC module is a general-purpose 16 channel IO board, with two banks of eight I/O ports each. The first bank can support eight servo outputs with additional hardware, and all 16 I/O channels offer jumper selectable pull-up/down and flexible configuration through the CDI. The I/O ports can consume its own generated events for event chaining. It is powered from the LCC network.
The ServoIO-LCC module is equipped with three-pin headers for servo output on the first bank of eight I/O ports, and screw

terminals supporting all sixteen channels. In addition to supporting event generation for the servo start-, mid-, and end-points and saving the servo positions between power cycles, the ServoIO LCC module has the same capabilities as the IO-LCC module.



The ButtonLED test board contains eight LEDs and buttons to generate or monitor inputs and outputs on the IO-LCC and ServoIO-LCC modules.
Info: sprog.us.com



A recent product from **Tam Valley Depot** is the Battery Buddy, which supports installing, charging, and turning on/off up to three separately available rechargeable Lipo batteries equipped with JST-PH connectors. The Battery Buddy is a PCB board that includes a four-wire charging port, a plug that can be configured as an on-off switch, three JST-PH battery sockets, and a resettable fuse. Some assembly, including soldering, may be required.
Info: tamvalleydepot.com

BRIEFLY NOTED AT PRESS TIME ...

Eastern Seaboard Models is expanding their bulk pack line of N scale trucks and wheelsets to include 60-packs of 33″ diameter/.553″ axle, 36″ diameter/.540″ axle and 36″ diameter/.553″ axle wheelsets. The current 12-packs of these sizes will remain available.

Lowell Smith's Railsmith line has opened orders for dormitory cars decorated for the Rock Island/Southern Pacific Golden State, the Union Pacific The Portland Rose, The Union Pacific/Southern Pacific City of San Francisco, and Southern Pacific's 1958 Cascade General Service scheme.

State Tool & Die has released two new Southern Railway radio cars, #905942 and #905925. 3D-printed resin kits, the models are painted and decorated and include metal wheels, brass antennas, and Kadee #158 couplers.

The **Around The Layout** Podcast is taking pre-orders for a custom ATLP 2027 Prairie Shadows HO scale Trinity 6235 cu. ft. 50′ high-cube boxcar. Originally only 100 were to be produced but the response to this model has been so strong an additional 50+ models have been added to the run. Preorders run through February 1st, 2026.
Info: aroundthelayout.com/2027 ■

SELECTED EVENTS

JANUARY

Please submit your event information, including website, to model-railroad-hobbyist.com/contact/News_event_-_product_announcement

Ongoing Online and In-Person

ONLINE, Zoom & YouTube, Wednesdays at 7pm Eastern. New Tracks Modeling Live Weekly
Info: newtracksmodeling.com
YouTube: www.youtube.com/channel/UCMA_VhPb5pjdkAYTdXLceJA

ONLINE, Zoom, Second Tuesdays, 8pm Eastern. "Off the Beaten Track" featuring Narrow Gauge layouts, clinics, and manufacturers.
Info: groups.io/g/NNG

ILLINOIS, CALEDONIA, Monthly Meetings of the Rock River Valley Division, Midwest Region. Paulson's Agriculture Museum of Argyle, 6950 Belvidere Rd. See Events page on website for dates.
Info: rrvd-nmra.com

January – February 2026

CANADA, ONTARIO, BARRIE, February 14-15, 2026. Barrie Allandale Model Train Show. Bradford Greenhouses, 4346 Cty Rd 90 (Springwater).Info: barm.ca

CANADA, SASKATCHEWAN, PRINCE ALBERT, January 17-18, 2026. Prince Albert Model Railroaders Club annual Model Trains and Hobby Show. Gateway Mall, 1403 Central Avenue.
Info: riverxingnorth@gmail.com

CANADA, SASKATCHEWAN, SASKATOON, February 14-15, 2026. 41st All Aboard Model Train Show. World Trade Center Saskatoon at Prairieland Park Hall D, 503 Ruth Street West.
Info: prairierailworkshop.com/train-show

CALIFORNIA, SANTA CLARA, January 30 – February 1, 2026. PCR Bay Area Layout Design & Operations Weekend. South Bay Historical Railroad Society, Santa Clara Caltrain Depot. Online via Zoom.
Info: bayldops.com/2026/index.html

KANSAS, LAWRENCE, February 28-March 1, 2026. 24th Annual Train Show and Swap Meet, sponsored by the Lawrence Model Railroad Club. Crown Toyota, 3400 South Iowa St.
Info: lawrencemodelrailroadclub.org/2026-train-show

KANSAS, WICHITA, February 7-8, 2026. The Wichita Train Show and Swap Meet sponsored by Chisholm Trail Division, NMRA. Cessna Activity Center, 2744 George Washington Blvd.
Info: www.nmrachisholmtraildivision.org/best-train-show.html

MASSACHUSSETTS, WEST SPRINGFIELD, January 24-25, 2026. Amherst Railway Society Railroad Hobby Show. Better Living Center, Young, Stroh, and Mallary Buildings at The Eastern States Exposition Fairgrounds – Home of the Big E. 1305 Memorial Avenue.
Info: www.railroadhobbyshow.com/index.php

MICHIGAN, BRIGHTON, January 24, 2026. 5th Annual Model Railroad Sale, hosted by Division 6, North Central Region, NMRA. 2142 Church Community Center, 7526 Grand River Ave.
Info: www.ncrnmra.org/model-railroad-sale

NEW JERSEY, CINNAMINSON, January 17-18, 2026. Burlington County Model Railroad Club 2025-2026 Winter Open House. 808 Pomona Road, basement of the Footlighters Theatre.
Info: bcmrc.org

NEW JERSEY, MAGNOLIA, January 17, 2026. Magnolia Train Show, hosted by the Strasburg Model Railroad Club of NJ. Magnolia Community Center, 425 W. Brooke Avenue.
Info: www.facebook.com/StrasburgModelRailroadNJ

NEW YORK, ROCHESTER, February 21-22, 2026, RocRPM – Rochester Railroad Prototype Modelers Meet. Edgerton Community Center, 41 Backus St.
Info: www.facebook.com/RocRPM

NORTH CAROLINA, NEW BERN, February 21-22, 2026. 30th Annual Train Show, presented by Carolina Coastal Railroaders. New Bern Riverfront Convention Center, 203 S. Front St.
Info: www.carolinacoastalrailroaders.org/trainshow

OHIO, CANFIELD, February 14, 2026. Canfield Train & Toy Show. Event Center, Canfield Fairgrounds, Gate 9 State Route 46.
Info: www.facebook.com/canfieldtoyandtrainshow

OREGON, EUGENE, February 15-16, 2025. 36th Annual Swap Meet and Train Show, hosted by the Willamette Cascade Model Railroad Club. Lane County Events Center, 796 West 13th Avenue.
Info: wcmrrc.com

OREGON, PORTLAND, February 28, 2026. Willamette Model Railroad Club annual swap meet. Kliever Armory, 10000 NE 33rd Avenue.
Info: wmrrc.com

PENNSYLVANIA, BEAVER FALLS, February 7, 2026. Frosty Rails 2026, sponsored by the Beaver Lawrence Railway Historical Society, Inc. Chippewa TWP VFD Social Hall, 2568 Darlington Road.
Info: blrhsinc.org

TEXAS, PASADENA (Houston), February 21, 2026. Greater Houston Train Show, sponsored by the San Jacinto Model Railroad Club. Pasadena Convention Center, 902 Fairmount Parkway.
Info: sanjacmodeltrains.org

TEXAS, PLANO, January 17-18, 2026. Dallas Area Train Show, sponsored by the North Texas Council of Railroad Clubs. Plano Centre, 2000 East Spring Creek Parkway.
Info: dfwtrainshows.com/page/dallas-area-train-show

WASHINGTON, KENNEWICK, January 24-25, 2026. Great American Train Show. Benton County Fairgrounds, 1500 S. Oak St., Building #20.
Info: pnr.nmra.org/events.html

WASHINGTON, MONROE, February 21-22, 2026. The 33rd Washington State Train Show & Market Place, presented by the United NorthWest Model Railroad Club. Evergreen State Fairgrounds, 14405 179th Avenue SE, Buildings 600, 604, and 501.
Info: www.unwclub.com/unwshow

WASHINGTON, PUYALLUP, January 17-18, 2028. Great American Train Show. Washington State Fair Event Center, Blue Gate, 110 9th Avenue SW.
Info: www.thefair.com/events/great-america-train-show

Future 2026 by location

CANADA, ALBERTA, CALGARY, April 25-26, 2026. Supertrain. Olympic Oval at the University of Calgary, 288 Collegiate Blvd NW.
Info: www.supertrain.ca

CANADA, BRITISH COLUMBIA, BURNABY (Vancouver), May 22-24, 2026. Online Kickoffs April 30, May 14th. Railway Modellers Meet of British Columbia. 3rd Floor, West Mall Centre, Simon Fraser University.
Info: railwaymodellersmeetofbc.ca

CANADA, ONTARIO, HAMILTON, April 18, 2026. 2026 Steel Town Railway Prototype Modelers Meet. Eva Rothwell Centre, 460 Wentworth St.
Info: steeltownrpm.wordpress.com

ALABAMA, MOBILE, March 7, 2026. SWARM Model Train Show. Mobile Via Health, Fitness, & Enrichment Center, Arlene F. Mitchell Campus, 1717 Dauphin Street.
Info: www.facebook.com/profile.php/?id=100070094629309

COLORADO, DENVER, April 11-12, 2026. Rocky Mountain Train Show. National Western Complex, 4655 Humboldt St.
Info: rockymountaintrainshow.com/Default.aspx

GEORGIA, MACON, March 27-28, 2026. Central Georgia Railroad Prototype Modelers. Lundy Chapel Church, 2081 Forest Hill Rd.
Info: centralgarpm.com

INDIANA, NAPPANEE, March 21, 2026. 21st Annual Elkhart Model Railroad Club Nappanee Train Show. Claywood Event Center, 13924 N 1100 W (County Line Road).
Info: emrrc.com

KENTUCKY, LOUISVILLE, March 21, 2026. 36th Year - Division 8 Train Show & Sale. Holy Family Parish Saffin Center, 3938 Poplar Level Rd.
Info: div8-mcr-nmra.org/site/index.htm

NORTH CAROLINA, March 27, 2026. 24th Annual Hickory Train Show. Hickory Metro Convention Center, 1960 13th Ave SE.
Info: newtondepot.org/event/24th-annual-hickory-train-show

OHIO, WEST CHESTER (Cincinnati), March 7, 2026. Annual Spring Model Train Market. Lakota West Freshman Campus, 5050 Tylersville Rd.
www.cincy-div7.org

OKLAHOMA, TULSA, March 13-15th, 2026. 2026 Layout Design and Operations Weekend, presented by the Indian Nations Division of the NMRA. Locations: Various around Tulsa
Info: ldopsigmeet.tulsanmra.org

OREGON, ALBANY, March 28, 2026. Winterail – 48th Anniversary Railroad Photography Exposition & Collectibles Sale. Russell Tripp Performance Center, Linn Benton Community College (LBCC), 6500 Pacific Blvd, SW.
Info: www.winterail.com

OREGON, PORTLAND METRO, June 20, 2026. Railroads in the Garden Summer Tour, presented by the Rose City Garden Railway Society. Booklets available online, at local hobby shops, and some garden centers beginning May 1st, 2026.
Info: rcgrs.com

OREGON, TIGARD, May 13-16, 2026. Oregon Rails 2026, the 2026 Pacific Northwest Region NMRA annual convention. Embassy Suites By Hilton Tigard-Portland, 9000 SW Washington Square Road.
Info: oregonrails2026.com

PENNSYLVANIA, MALVERN, March 19-22, 2026. RPM Valley Forge, The Desmond Malvern, a Doubletree by Hilton, One Liberty Blvd.
Info: www.rpmvalleyforge.com

SOUTH DAKOTA, SIOUX FALLS, March 21-22, 2026. Greater Sioux Falls Model Train Show, presented by the Dakota Southeastern Division, NMRA. Grand Ballroom, Sioux Falls Convention Center, 1201 N West Ave.
Info: dakotasoutheastern.org/event/greater-sioux-falls-model-train-show-march-22-2026-sioux-falls-sd

TENNESSEE, CHATTANOOGA, July 27-August 2, 2026. 2026 Scenic City Express, NMRA National Convention. Chattanooga Convention Center, 1 Carter St.
Info: www.nmra2026.org ■

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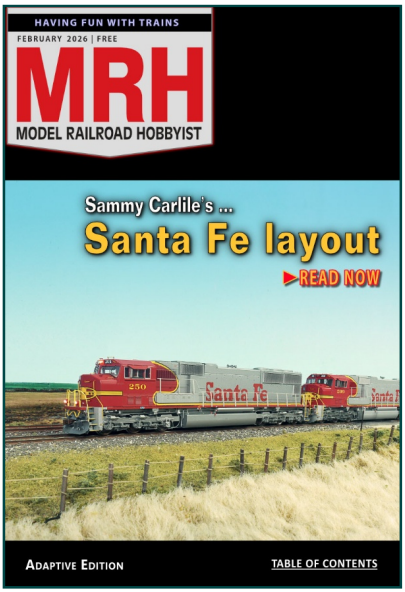
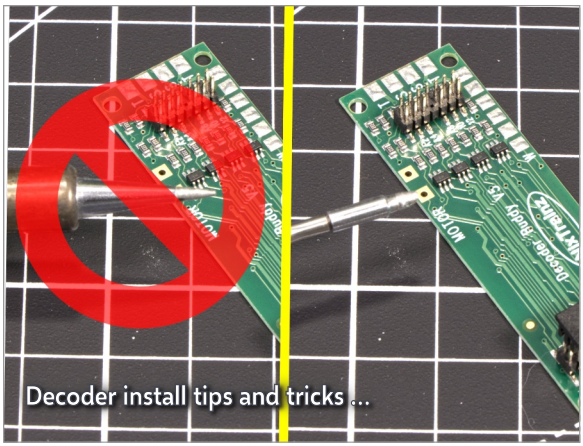
Coming next month in MRH ...





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Coming next month in Running Extra ...

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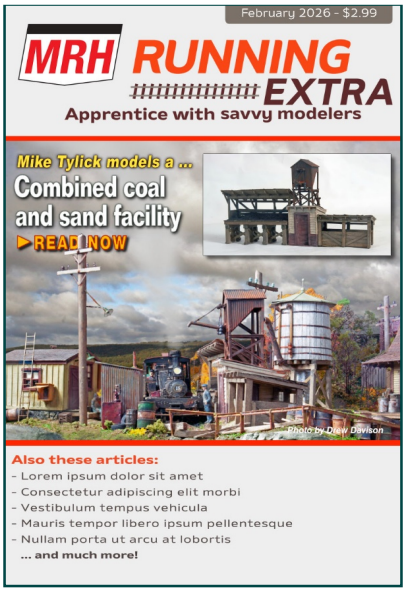

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