HAVING FUN WITH TRAINS

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MODEL RAILROAD HOBBYIST

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- Multimeters for model railroaders
- Easy track weathering tricks
- More building a 4x8 starter layout
- Ops: What trains to run, part 2

... and more inside!

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MRH
MODEL RAILROAD HOBBYIST

Model Railroad Hobbyist | January 2025 | #179

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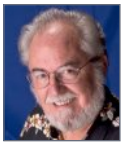
James Regier, Assistant Editor


Patty Fugate, Pasteup and Layout


Richard Bale, News and events


Jeff Shultz, News and events, Tech Assistant


Mike Dodd, Copy Editing

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ASST EDITOR'S MUSINGS

Model Railroad Hobbyist | January 2025

James Regier : talks about Trainfest and the model railroading bug ...

VIEW READER COMMENTS

This past November, Trainfest once again graced Milwaukee, held in the Baird Center downtown. I was eager to go, having last been in 2019. One of the major announcements during the show was that Trainfest would be returning to its annual schedule, under NMRA control, and would be held at the Wisconsin State Fairgrounds once again.

The show was well-attended this year, and as always it was a pleasure to meet and talk to the many people. Andrew Bobbis, there with his phenomenal Santa Fe All the Way modular layout, graciously offered to host me at the show, giving me insider access to his layout and a place to store my bag and coat [1]. Beyond the model trains, it's that wonderful community that really keeps me going in the hobby.

Since I didn't have any official responsibilities for this show, I thought it would be fun to bring my family along. Both of my girls Renate (10) and Anneliese (7) have enjoyed running trains, and even doing prototypical operations with me at K-10's Model Trains in Maryville, IL. I knew they enjoyed seeing the layouts at local shows. Allison, my wife, had come along with me to Trainfest in 2019, and we saw there were numerous activities for kids to enjoy.

Both Allison and the kids were agreeable to going. Anneliese had her seventh birthday that weekend, and was looking forward to going to a

hotel with a swimming pool. Allison's condition was that we go to one of our favorite restaurants, Three Brothers.

At least a dozen layouts were set up in all scales from Z to G, and even L (Lego). The girls really enjoyed touring the layouts, and especially had fun identifying the various buildings and kits on the Lego layouts. Perhaps the most exciting part of the show for Allison and the girls was the Kato-hosted mini diorama T-Track module workshop.

MRH has been advocating TOMA for some time, and these mini diorama T-Track modules were certainly in that spirit. For about $10, participants (or their parents) could buy an N scale diorama kit with one section of Kato Unitrack – curved or straight – and a laser-cut section of benchwork. We bought one curved and one straight diorama.

1. Andrew Bobbis' Santa Fe All the Way modular layout is based on the Museum and Santa Fe Railway that once graced Chicago's Museum of Science and Industry. This module represents Santa Fe's Barstow Shops, and is one of many prototypical scenes of the Santa Fe's run from Chicago to California. Andrew brings his layout to many shows, so be sure to check it out if it comes to your neck of the woods.

Publisher's musings | 3

Kato designed the diorama sections such that they could connect to each other end-to-end for nearly endless possibilities of modular fun. Since the kits are standard Unitrack, they are also compatible with Kato's other Unitrack offerings. Each kit includes two supports to bring adjacent rails to matching height.

With help from T-Track club volunteers, participants assembled their modules [3], and then the real fun began. Show sponsors and vendors had donated a variety of scenic materials, and the rest was left to the participants' imaginations. The only rule was that the scenery had to be placed such that the scenery gauge included in the kit could pass along the rails unobstructed.

Here's where it became a bit challenging for me. I had all sorts of ideas of my own about what would look good on a diorama, what might constitute a realistic scene, and what advice I might give the girls. A

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2. Kato mini diorama. Kato photo

3. Anneliese works to assemble her diorama kit.

THE UNION PACIFIC HISTORICAL SOCIETY PRESENTS THIS COMMEMORATIVE EDITION OF THE 5077 PULLMAN STANDARD BOX CAR

The Union Pacific Historical Society is pleased to announce that North American Railcar Corporation will make a commemorative edition of the new 5077 Pullman Standard Box Car, for the Union Pacific Historical Society. Limited Edition - there are only 50 of these cars that were produced and they will not be released again once they are sold out.

Lot 9832 was Pullman's fourth order for their 5077 cubic-foot single door box cars, built at the Bessemer, Alabama plant 4=6/76. 600 cars were built for American Rail Box Car Company for general service and placed into series RBOX 21000-21599 (class XPF11A). In 1983, 360 cars from RBOX 21000-21359 were transferred to Union Pacific ownership and put into the UP 130800-131159 series, while RBOX 21360-21599 (240 cars) were transferred to UP 130400-130637.

This highly detailed replica of Pullman Standard's 5077 cubic-foot single door box car (Lot 9831) has been meticulously researched and designed and produced in plastic with accurate details in plastic, wire and etched metal. North American Railcar is pushing the technology envelope and offering model railroaders cars that they could otherwise never expect to be produced. The Lot 9831 PS 5077 cubic-foot box car is another example.

FEATURES:

- PS 5077 Cu Ft - 50ft Boxcar - Lot 9832-3 - Union Pacific (UP) (Mineral Red with White Lettering / small UP shield)
- Type 2 body with 10 side posts (5 on each side of the 10-foot centered door) with all 10 side posts being fabricated from hat-section channels
- Type 2 side sill
- Pullman's proprietary 15-panel "bow-tie" roof
- Pullman's 5/5 "sine-wave" corrugated ends
- EZ-Roll replacement 7-panel sliding doors
- Universal hand brakes
- Type 3 stirrup steps
- Rigid (non-cushioned) underframe
- Horizontal-lever brake gear
- NARCorp high performance/low friction 70-ton ASF Ride Control trucks with 33" diameter metal wheels
- Body-mount Micro-Trains couplers
- Mineral red livery with small UP shield

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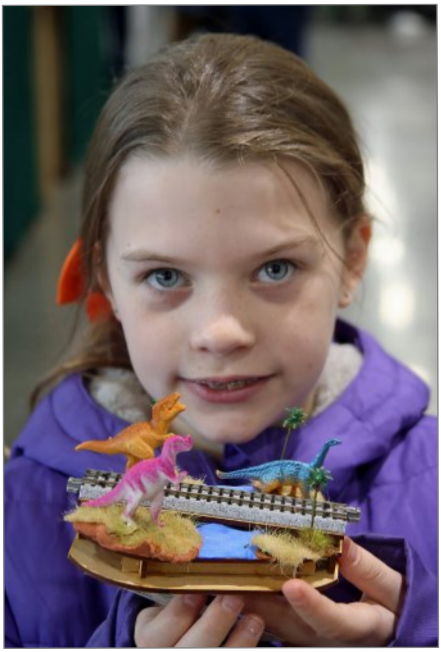
wiser voice in my head intervened and said, "There's a spark being lit here. Shut up, Dad, and let it happen."

The girls had great ideas of their own. They were having a marvelous time forming the foam clay, laying it down, and adding scenery. In the end, both were very pleased with their creations, and excited to do more [4].

Allison was enthusiastic about the dioramas, too. When we made the obligatory stop at



4. Renate holds her completed diorama, a Jurassic scene.

Lombard Hobbies on the way home, Allison went straight to their Unitrack display to look for track to complete a loop. Since we had one straight and one curved diorama, we needed one additional straight and seven more curved sections.

Finding matching Unitrack straight sections was not a problem. Unfortunately, the curved track Kato uses for their mini dioramas is a tighter radius than what seems to be readily available – I checked several stores.

We wound up buying two four-packs of a slightly larger radius track for a complete circle instead. I ordered three more curved dioramas from Kato, giving enough curved diorama sections that we could use them, but still maintain proper loop alignment.

Allison and the girls thought the modules would make fine group activities for future birthday parties, and they might also be fun to do with their cousins over Christmas break. So, I ordered 10 more straight diorama kits to find out. Keeping things simple, our scenic supplies

5. Allison works on her module, Anneliese sculpts with foam clay. Her completed module is front-and-center. We gathered cedar twigs and grasses from around Allison's parents' farm.

were limited to foam clay and whatever we could scrounge at our families' houses [5].

We learned that while the cousins had fun doing the scenicking, the initial module assembly was a slog. Pre-assembling the dioramas helped get straight to the fun of scenicking, and had the added benefit that we could simply connect the built modules and run trains, even before scenicking.

The kids had a lot of fun decorating their dioramas, and it was awesome to see the creativity flowing. It was rewarding to see them connect into a little layout [6]. Once things were finished and the track assembled, the kids enjoyed taking turns at the throttle.

Kato has really come up with a splendid system for getting people involved in model railroading. Not only is it great for train shows, but our experience was that it worked just as well for family gatherings. They seem like a wonderful way to plant the seed. ☑

James

6. Renate assembles the dioramas she, Anneliese, and her cousins decorated. Mountains, trees, whitewater rapids, and candy land were all reasonable possibilities in this world. The modules included two track supports each, which proved plenty to support eight curved sections of Unitrack at the proper height.

Last issue likes

Most liked articles in December 2024 issue of *MRH* are:

1st Let's talk ops: What trains to run, part 1
2nd Modeling a more accurate D&H U23B
3rd Assembling a DPM/Roomettes Combo, part 1

Most liked articles in December 2024 issue of *Running Extra* ...

1st Realistic conifers made easy
2nd Limited Modeler: Fleshing out the Ballville Branch
3rd Publisher's Welcome: The wonders of ethyl acetate

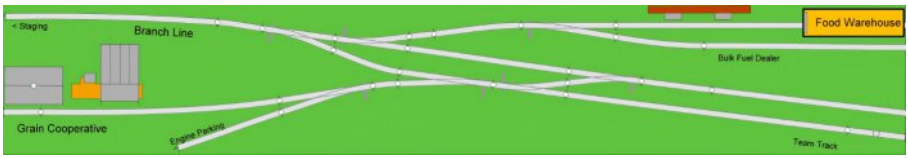
If you want more of this type article, then like the article! Click the *Give us a like* or *comments* button on each article and press the like button on the article's forum page if you want to see more articles like these. ■

Best of the MRH FORUM THIS MONTH

Forum MRH mrhmag.com

Model Railroad Hobbyist | January 2025

Compiled by JOE FUGATE



Switching layout track plan

VIEW READER COMMENTS

MRH forum member **Ed in Maine** (Edward D.) posted various iterations of his switching layout track plan and asked *MRH* forum members to critique it.

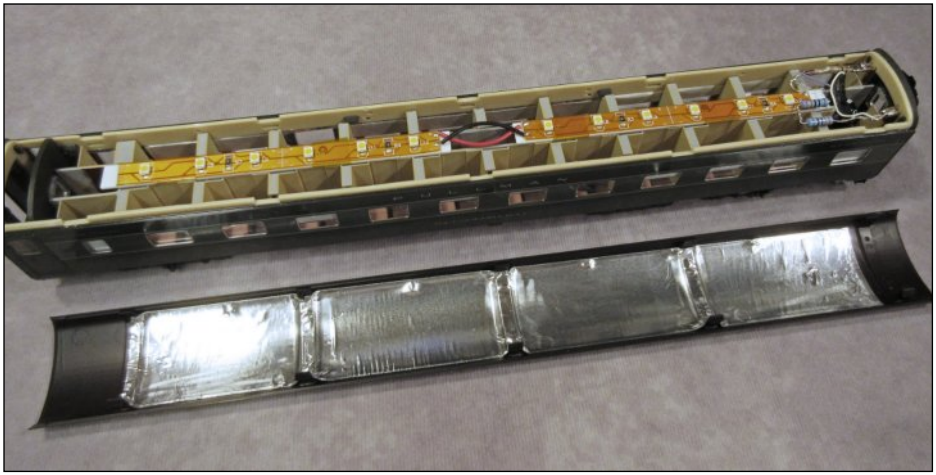
Ed posted his final track plan above. Ed says:

"I decided I would be better off limiting my space to 9ft x 18 inches for the shelf, and will be building either two 4.5 foot modules or one 5 and one 4, depending on where it would be easier to section everything in half ... I'm going for an end of branch line in a medium sized city in 1970 (shortly after the BN merger) vibe."

We really like this small track plan with its "angled mainline" through the scene. Nicely done, Ed. Follow along as Ed builds the layout!

View the full blog on the MRH website

▶ *MRH'S* MONTHLY GREAT MODELER POSTS



1. *MRH* forum member **gmpullman** (Edmund T.) posted this very clever passenger car lighting trick. Read the text below for details.

Passenger car lighting trick

MRH forum member **gmpullman** (Edmund T.) posted this really cool (but slightly off-topic) idea for passenger car lighting on a thread about tiny DIY stay alive circuits started by **Thaag** (Tom H.). Edmund says:

"I get excellent results by aiming the LEDs toward the roof with reflective foil applied. This is a 22 roomette car and this allows nice even lighting in the rooms."

How cool is that idea? The thread got onto this topic because someone asked if stay alive circuits will help get flicker-free passenger car lighting. Edmund posted a DIY circuit to get flicker-free LEDs, and then posted this gem of an idea.

To see all the DIY circuit suggestions, view the full thread!

View the full thread on the MRH website

2. *MRH* forum member **Ken Heywoood** posted these two end-of-track bumper examples on an *MRH* forum thread asking for photos of how you terminate a spur track. Hayes bumper, left; Hayes wheel stops, right.

Post your end-of-track bumper examples

MRH forum member **Ken Heywoood** posted some photos [3] of his track bumpers on a thread started by MRH forum member **BATMAN** asking for folks to post examples of end-of-track bumpers.

The variety of end-of-track bumper photos on this thread covers the entire spectrum from virtually no bumper (track ends in a weed-ridden ballast pile) to fancy bumpers complete with a coupler.

If you're wondering how to terminate that track on your layout, check out the full thread on the *MRH* forum for ideas. You have plenty to choose from!

View the full thread on the *MRH* website

Recent Prototype photos

These prototype photos posted on the *MRH* forum have one thing in common: they're pictures of things you're not supposed to do!

View this prototype photos thread

3. *MRH* forum member **messinwithtrains** (Jim O.) posted this prototype photo showing poorly ballasted track that's weed free, and telegraph poles that are not lined up!

4. *MRH* fourm member **Chuck P** posted this photo showing freshly ballasted track. If you look closely at the area inside the red circle, you will note the ballast sits on top of the ties to the point that it completely covers them, with only the ends of the ties barely poking out. So much for never having ballast on top of the ties.

Model Railroad Hobbyist | January 2025

Getting started with realistic ops: determining what trains to run, part 2

VIEW READER COMMENTS

Real railroads don't move cars for fun, those cars are being used to transport goods and people at a profit. Last time we talked about the kind of trains railroads run, we looked at the 50,000 foot level, if you will. Now let's go to the most granular level and look at the smallest unit of transport, the railcar.

The basic flow of a railroad freight car is:

- Rail car is empty
- An industry contacts the railroad to ship product
- Railroad sends empty car to industry
- Industry loads empty car
- Railroad picks up loaded car and delivers it to where it needs to go (typically another industry)
- The rail car is unloaded and the process repeats.

Obviously, moving one loaded rail car at a time from its source to its destination is not very efficient, so the prototype collects those cars and makes them into trains, with all the given cars in a train going to a similar destination.

1. Logs and various raw materials get delivered to the Dillard forest products facility on my Siskiyou Line. The local switching crew has to sort through each car and get it delivered to the proper mill building spot location out of a dozen possible spots.

It's more efficient to collect the rail cars in the west going to points east of the Mississippi and make them into one or more through trains going to Kansas City, for instance.

Once in Kansas City, the cars will be reclassified in a yard into through trains sent further east. Meanwhile, cars destined for the Kansas City region will be made into local trains and delivered to their final destination.

If you look at what kinds of freight you want to move from point A to point B, you can start to get an idea of what specific trains the railroad may run and why.

Keep in mind railroads move products in quantity – a boxcar full of something is a lot of stuff. If you can think of some place with lots of product of a certain kind, then where will there be a lot of demand for lots of that product?

For example, raw timber is a product used for making lumber, making plywood, and making paper. Now look at where timber is harvested and where lumber mills, plywood mills, and paper mills are located – and ask what kinds of through trains will be needed to get the timber to a rail yard near where it's needed?

And from the yard, what local trains get it delivered to the mills? Let's look at some real examples in my next column. ☑

WHAT'S NEAT column

Model Railroad Hobbyist | January 2025

KEN PATTERSON COVERS THIS MONTH:

- KEN'S UPCOMING LAYOUT UPGRADE PROJECTS FOR 2025
- LOCOMOTIVE PULLING TEST WITH BLI'S DIECAST SD70ACe
- NEW PRODUCTS WITH BACHMANN'S MATT STERN

VIEW READER COMMENTS

click to play video

PHOTOS AND VIDEO OF SUPERB MODELS

THIS MONTH, Ken stays in the basement as he walks around to describe the sections of his layout he's planning on changing in 2025 and then stress-tests Broadway Limited's new cast metal SD70ACe locomotives in HO scale. Bachmann's Matt Stern is featured in the last segment of the show with some new product samples of current and upcoming products.

Upcoming layout construction projects for 2025

1. Those who have been keeping up with "What's Neat This Week" will have seen that Ken was really inspired by Tom Johnson's Cass County RR layout, to the point that Ken is going to cut this scene back by at least half, so he can concentrate on the scenery in the smaller area.

VIEW READER COMMENTS

2. This section by the windows is often in the background of the" What's Neat This Week " videos and has undergone at least three or four major overhauls. Ken has an idea what he'd like to do for the next one.

3. The third section of the layout that Ken wants to rebuild he wants the viewer's input on. He's had various thoughts about what he should put here but has never been happy with it. What would you do with this section?

Locomotive pulling test with BLI's diecast SD70ACe

4. Broadway Limited sent Ken two of the first diecast SD70ACe locomotives in HO scale. With metal shells the locomotives each weigh about 1lb-14.7oz. The locomotives are decorated in Union Pacific and Montana Rail Link's Essential Workers scheme.

5. Dirk Reynolds joined Ken as a cameraman to conduct pulling tests with these locomotives, discovering that while one locomotive could pull about 165 cars, it was more comfortable with about 150.

6. With both locomotives in the train, they could pull 261 cars with difficulty, which was about 3/4 of the 157-foot length of the mainline around the basement. With 231 cars, the two locomotives cruised around the basement pulling the train easily. Info: broadway-limited.com

New products with Bachmann's Matt Stern

7. Bachmann's Matt Stern dropped by via Skype to show some samples of new and upcoming products. In HO scale the shade of gray used in the CSX Bright Future/YN2 paint scheme on the GP38-2s has been lightened.

8. Bachmann's excursion car in HO scale is coming out in two schemes to commemorate two narrow gauge tourist railroads, the East Broad Top and the Roaring Camp & Big Trees Railroads.

9. In N scale, Matt showed off two upcoming N scale coil cars with two different hood styles, Conrail with the older angled hood and CSX with the modern rounded hood. The hoods are removable and swappable between cars, and the cars contain removable loads.
Info: bachmanntrains.com

To see all of Ken's plans for his layout in 2025, the pull test of the BLI SD70ACe locomotives, and all the upcoming models from Bachmann, click on the video link at the beginning of the article. ☑

Multimeters for Model Railroaders

Model Railroad Hobbyist | January 2025

Electrical Impulses

Joe Fugate on working with a trusty electrical multimeter at your side ...

VIEW READER COMMENTS

Picture this: you're working on your layout and suddenly your train stops completely. You've checked the tracks and wheels, and everything looks fine, but it still won't move. The track is clean, so that's not it. Now what?

A multimeter can assist you as a trusty sidekick. It can help you do:

1. **Precise troubleshooting:** With a multimeter, you can pinpoint the exact issue. Without one, you're left with guesswork. Is it a bad power supply? A faulty connection? A short circuit?

2. **Saving time and money**: Imagine if to troubleshoot an electrical issue your only option were to swap out various components to pinpoint what's wrong. By using a multimeter, you can avoid most of this painful trial-and-error approach. It's a one-time investment that pays off by preventing unnecessary replacements or repairs.

3. **Enhanced performance:** Want to get the most out of your model railroad? A multimeter helps you fine-tune your setup. Ensure your locomotives receive optimal power, your wiring is operating correctly, and your layout's various components get exactly what they need so they don't fail at the worst possible time.

4. **Better hobby satisfaction:** Having the right tool to diagnose and fix electrical issues gives you the confidence that you're prepared for hiccups and can keep your model railroad running well.

5. **Growing your hobby skill set:** Learning to use a multimeter equips you with the know-how to tackle most any electrical challenge that comes your way. It's not just a tool; it's part of your growing expertise as a savvy model railroader.

In short, I would argue a multimeter is not an accessory – it's an essential tool needed to maintain, troubleshoot, and optimize your model railroad's electrical side. In this article, I'm assuming you somewhat know what a multimeter is, but you may not know all the cool things you can do with one. As a side benefit, a multimeter can be handy to have around the house for those "honey-do" projects!

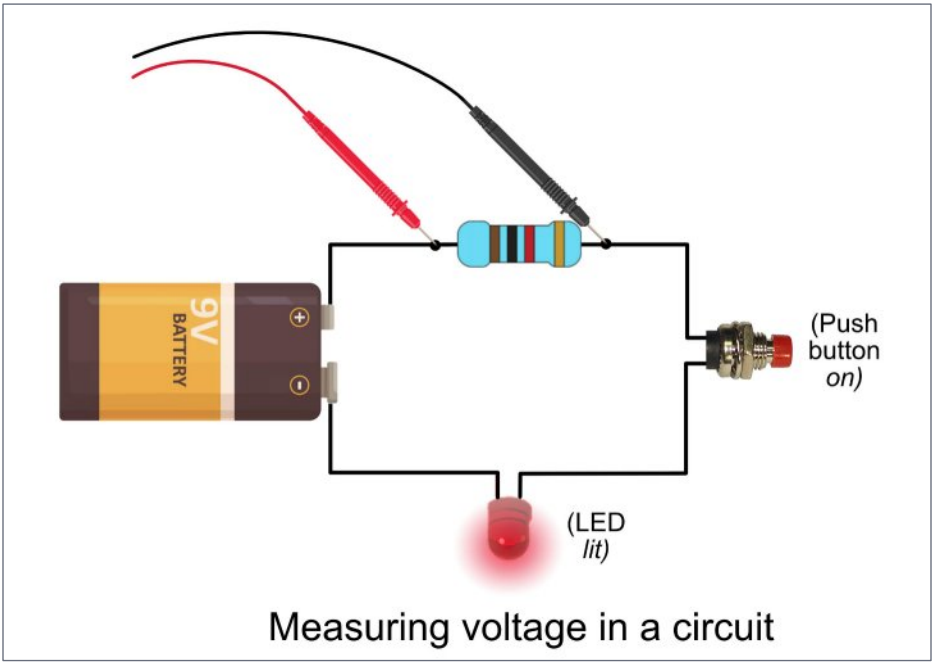
I have an old analog multimeter I got from Radio Shack (remember them?) decades ago and it's still going, but recently I upgraded to a new auto-range digital meter with many new features – so I will also discuss what to look for when shopping for a hobby multimeter.

WHAT CAN YOU DO WITH A MULTIMETER?

Using a multimeter might seem a bit daunting if you've never used one before, but they're easy enough to figure out with a little guidance. Here's a list of the things we as model railroaders can do with a multimeter.

Measure voltage: Checking voltage helps in diagnosing issues like serious voltage drops that can cause your trains to slow down or stop unexpectedly. To measure voltage, turn the circuit on, then place the probes along the circuit at two different points to measure the voltage present [1].

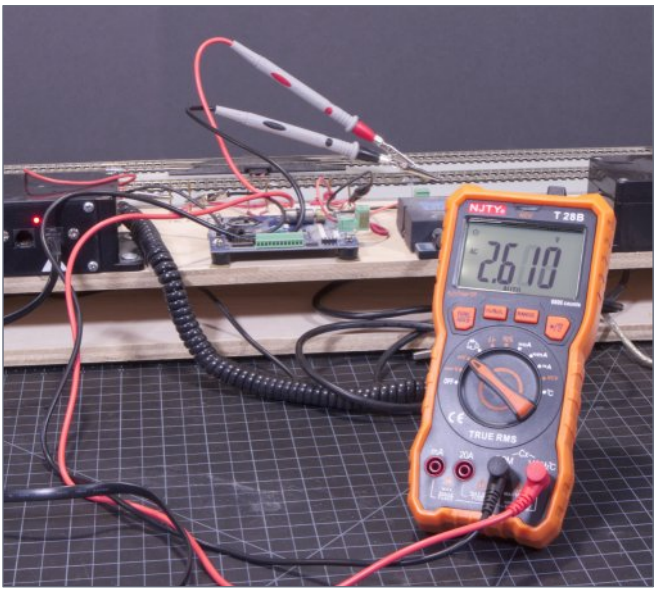
If you're running DC, you can use a multimeter to measure the DC voltage on your tracks. Measuring track voltage with DCC can be



1. To measure voltage in a circuit, turn it on, then place the probes at two different points along the circuit route to read the voltage present.

tricky with a multimeter. You can get an approximation of the track voltage on the meter's AC setting. A true RMS meter will be close to correct [2] while a non-RMS meter [3] will generally be on the high side when compared to the actual DCC voltage [4].

With a DCC locomotive put on the track and with the shell off, you can use a multimeter to test the function lead voltage touching the blue wire (common –) with the black probe and put the red probe (+) on the function wire color you're interested in, such as the white wire for the headlight, the yellow wire for the rear light, or the green wire for F1, and so on. Function lead voltage measured this way is straight DC, so the meter value is the exact correct voltage.



VIEW READER COMMENTS

2. When using a multimeter to check DCC track voltage, put one probe on each rail and set the meter to AC. On this auto-range "true RMS" meter (see the side note), the value is roughly double what a non-RMS meter will show. Also on this auto-range meter you need to move the decimal over one, reading 26.1 volts AC in this case, or 13.05 volts when halved. See the non-RMS manual range meter in [3], and the actual DCC voltage in [4].

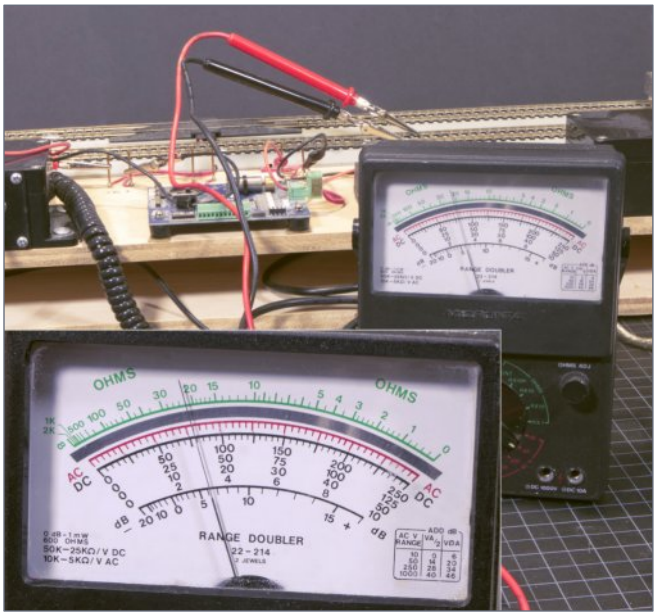
M. Dodd

AC vs. DCC

Normal household AC electrical power alternates in a smooth "sine wave" – so-named because the voltage is proportional to the trigonometric sine of the angle of the generator shaft rotating at the power station – aren't you glad you now know that! Anyhow, DCC track voltage alternates as a kind of square DC wave.

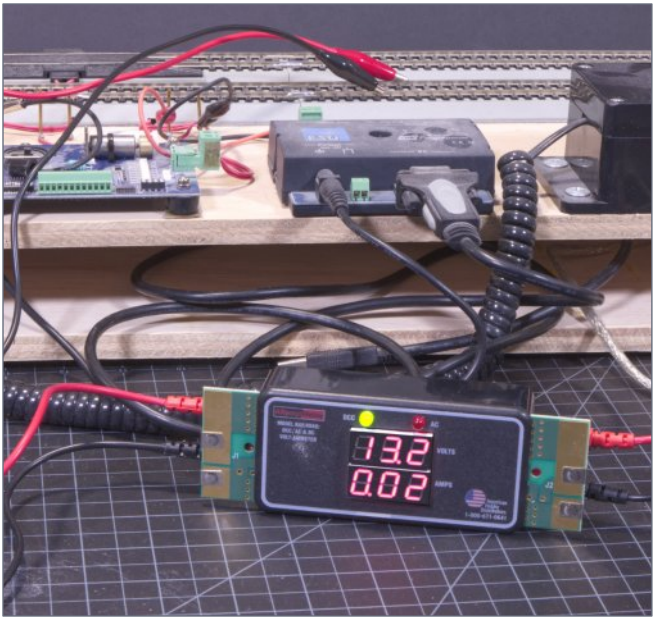
Most multimeters are designed to display an accurate reading if the AC is a sine wave, so they don't display DCC square wave voltage accurately. But a more sophisticated "true RMS" meter can accurately measure both pure sine waves and get reasonably close with complex waves like DCC.

Bottom line: A normal multimeter works fine if all you just want to know that DCC voltage is present, but use a true RMS multimeter if you need to know the actual voltage.



3. My old analog manual-range meter set to AC-range 50 volts reads 15.8 v on the DCC track (closeup, lower-left).

VIEW READER COMMENTS



4. An RRampMeter specifically designed to read DCC voltage, displays 13.2 volts. Note the true RMS meter reads close to this value at 13.05 [2] while the non-RMS meter reads 15.8 [3], so it's not as correct as a meter designed specifically for DCC.

Test resistance (Ohms): Measuring resistance can help you identify potential problems in your wiring and components, or can help you get just the right brightness on LEDs in your locos, signals, or in structure lighting on the layout.

Measure current (Amps): Although less commonly needed, measuring current can help you determine how much power your locomotives and accessories are drawing. This is useful for ensuring that your power supplies are adequate and you're not overloading your circuits.

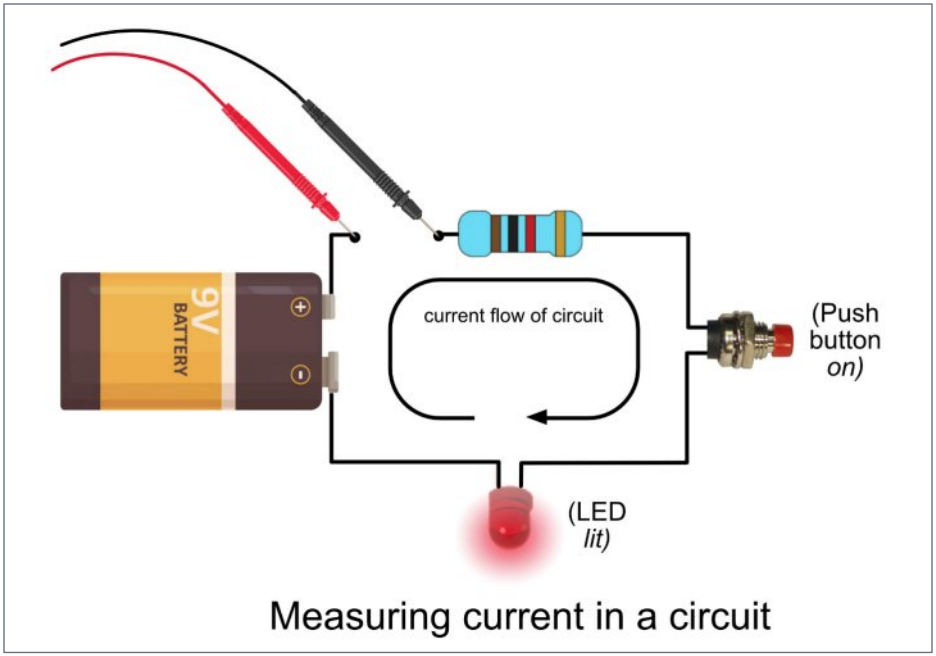
If you expect the current to be below 400mA, you can use the normal VΩmA input socket on most meters for the red probe [5]. Above 400mA expected current, move the red probe to the 10A socket. This can vary depending on the brand of multimeter, see [5]. Just be aware that to measure higher current, you generally need to move the red probe to a different socket.

5. Most meters have standard sockets for the black probe (COM) and for the red probe (INPUT or VΩmA) (yellow arrows). For anything above about 400mA, you should move the red probe to a different socket (10A on left meter). The T28B meter on the right is unique in that it also has an mA socket when measuring low current, and a 20A socket for high current. You cannot use the right probe socket to measure current on the T28B.

Measuring current with a multimeter can be a bit tricky because you need to put the meter in series with the circuit [6], which means disconnecting a wire somewhere and inserting the meter into the circuit. Just putting the probes onto a couple of test points like you did to check voltage will not work.

If you want to measure current draw in a locomotive, use a DC power pack to power a 3-foot section of flex track and run one feeder wire (say the positive red feeder) to a meter probe (red in this case) and then connect the other black probe to the track. Run the loco a short distance at various speeds and note the current draw.

To test stall current, briefly press down on the loco hard enough that the wheels stop turning, then note the current level. Do this quickly (10 seconds or so) to avoid overheating the motor.



Measuring current in a circuit

6. To measure current, make the meter part of the circuit. To do that, break the circuit and insert the meter into it so the current flows through the probes to the meter.

Check continuity: The continuity function allows you to verify your electrical connections are solid and unbroken. This is especially useful for checking the integrity of layout wiring as you are doing the wiring. Continuity testing can help you find breaks or bad connections that could be causing operational problems.

When checking continuity, make sure the regular power is off.

Diagnose short circuits: Related to checking continuity is the flip side: checking for *unexpected continuity* between different parts of your layout. This helps you locate and fix shorts that could cause operational issues or even damage your equipment.

I find this side of continuity testing to be one of the most valuable features of a multimeter when doing layout wiring. I connect the

meter probes with alligator clips to the rails near where I am wiring and make sure track power is off.

As I connect wires, if I get a "beep" then I know immediately *that connection* will cause a short. This makes it easy to troubleshoot and correct the problem on-the-spot.

Before I discovered this trick, I would spend several hours wiring, only to find I had a short at the end when I turned the power on. I would then spend a very frustrating hour or more trying to locate the connection causing the short, pulling my hair out all along the way! The audible continuity trick works far better because I know *immediately* which connection is triggering a short.

Verify component functionality: You can use a multimeter to test individual components like resistors, capacitors, and LEDs to ensure they are functioning correctly before installing them. This helps in preventing faulty components from giving you headaches later on.

KINDS OF MULTIMETERS

Based on their display, you can divide multimeters into two categories: digital and analog. Analog meters use a moving needle over a scale, while digital meters use an LCD display with numerals. Most consider a digital multimeter to be easier to use.

7. This digital multimeter uses manual range setting. For example, we suspect the resistor we want to test has a value of something-K, so we start with the 200K range. From here we can go up or down on the dial depending on the initial reading to get more precision.

VIEW READER COMMENTS

Multimeters also fall into two categories based on their measurement setting: Manual-range, and Auto-range.

Manual-range: To use this kind of meter, you must first select the approximate range for what you want to measure. For example, say you want to measure resistance (indicated by the Ω symbol) and we suspect the resistor is something K-ohms.

In [7], we see the meter has several ranges you can select. We choose one of the ranges using the knob – in this case we have selected *200K*. Based on the initial meter reading, we can turn the knob up or down to get more precision on the reading.

Generally speaking, you want to start just above the range you suspect and then move down. If you don't have any idea, start at the very highest range and work down.

Auto-range: These multimeters simplify things by automatically selecting the appropriate range .

For example, to measure resistance, set the selection knob to the Ω mode, and the multimeter handles the range automatically [8]. Some meters let you adjust the range precision up or down by adding or removing zeros after the decimal from the display.

8. With an auto-range meter, you select the desired unit to measure and the meter does the rest. In this case, we want to measure resistance, so we select the ohms (Ω) option.

WHAT SHOULD YOU LOOK FOR IN A HOBBY MULTIMETER?

Among the multimeters on the market, there's a wide variation in price. The more expensive multimeters are designed for use by electricians and professionals, and are built for extreme precision and durability. For hobby use, we don't need these pricey meters.

The basic functions you want in any hobby meter include the ability to measure voltage, continuity, resistance, and current. Given the current levels we can use in the hobby, you want a meter that includes the ability to measure up to 10 amps, and the ability to do 20 amps is a bonus. All the meters I list in the suggested meters section have these features, and more.

The inexpensive meters suitable for hobbyists are understandably less durable than professional meters. That said, you get what you pay for – I've seen meters in the $5-$10 range but I'd avoid those. While you can find a decent multimeter in the $10-$20 range, aim to spend $30-$50 for a better hobby multimeter – or if you want to splurge, go for $50-$100.

Manual-range meters generally cost less than auto-range meters, so if you don't mind making an educated guess when you start measuring, you can save a few dollars with a manual-range meter.

One thing you can do to upgrade an inexpensive meter is to invest in some high-quality probes, especially if you expect to use the meter to test higher-voltage house wiring. For instance, I like to run a series of extension cords and power strip drops around the layout to provide places to plug in power tools. I sometimes use a multimeter to check these.

Then there are accessories for turnout control, structure lighting, signaling, or animation, all driven by programmable boards such as Arduinos. Adding 5V USB-style power blocks at each town around the layout becomes super-easy with AC power strips located at each town. You also can avoid running a 12V bus around the layout by putting inexpensive buck converters at each town off

the power strip. The multimeter can be used to check voltages on these power feeds as well.

But do be safe when testing house power using one of the low-cost hobby multimeters. Consider upgrading to a set of professional-quality double-insulated probes to help avoid dangerous shocks. See this article's shopping list for where to get these more robust meter probes. For other safety recommendations with regarding layout wiring, see the sidebar, *Model railroad wiring safety.*

SOME SUGGESTED HOBBY MULTIMETERS

I've done some shopping for you, and built a shopping list of multimeters I believe to be good for model railroad use. I actually own two of these: the AstroAI DM130B and the DEASOMIYE T28B. I also have purchased the professional double-insulated test lead kit in the shopping list to upgrade my meter safety when I want to test house wiring.

9. Here are four of the five hobby multimeters I recommend in this article's shopping list.

Here are my recommendations, listed by price from lowest to highest.

AstroAI digital multimeter, manual range ($14): This entry-level digital multimeter [10] uses a manual range switch which reduces cost a bit. It includes the ability to test AC/DC voltage, DC current, resistance, diodes, and has an audible continuity feature. Includes a kick-stand to position the meter for easy reading. As a bonus, it has direct 1.5V, 9V, and 12V battery testing

AstroAI digital multimeter, auto-range ($19): This entry-level digital multimeter [11] uses auto-range setting, making it cost a bit more than the previous meter. It includes the ability to test AC/DC voltage, AC/DC current, resistance, diodes, capacitance, and has an audible continuity feature. It also can do non-contact-voltage present testing, minimizing exposure to live wires. Includes a kick-stand to position the meter for easy reading. It also has direct 1.5V, 9V, and 12V battery testing.

RuoShui 3010 analog multimeter, manual range select ($22): This entry-level analog multimeter [12] uses manual range setting, lowering the cost somewhat. It includes the ability to test AC/DC voltage, AC/DC current, resistance, and has an audible continuity feature.

10. Entry-level AstroAI digital multimeter, manual range ($14).

Deasomiye True RMS digital multimeter, auto-range ($27): This digital multimeter [13] uses auto-range setting. It includes the ability to test AC/DC voltage (true RMS on AC), AC/DC current, resistance,

11. AstroAI digital multimeter, auto-range ($19).

12. RuoShui 3010 analog multimeter, manual range select ($22).

13. Deasomiye True RMS digital multimeter, auto-range ($27).

diodes, capacitance, frequency, temperature C, and has an audible continuity feature. It also can do non-contact-voltage present testing, minimizing exposure to live wires. Includes a kick-stand to position the meter for easy reading.

Fluke 106 digital multimeter, auto-range ($81): Fluke meters are considered top-of-the-line professional meters and often cost hundreds of dollars. At under $100, this is one of the more affordable Fluke meters [14], Fluke calls it a "palm Fluke meter." It includes the ability to test AC/DC voltage, AC/DC current, resistance, and has an audible continuity feature.

Professional double-insulated test lead kit ($25): ***Important!*** Seriously consider this test lead kit if you intend to use any of these multimeters to test house wiring (other than the Fluke, which is made to test house wiring). Risking your safety is not worth it. Investing in a set of high-quality double-insulated test leads is not very costly. Choose to stay safe!

14. Fluke 106 digital multimeter, auto-range ($81).This is marketed as a "palm Fluke meter" (inset).

VIEW READER COMMENTS

These test leads also include a number of spring-loaded clip-on options, making it super easy to connect the probes to various components and have them stay put while testing.

SUMMARY

I hope you have found this month's "Electrical Impulses" on multimeters helpful. We want to assist you in finding the right multimeter for your hobby use, to get the most out of it, and to do so safely.

If you've never used a multimeter, give one a try – you'll wonder how you ever managed without it! ☑

You can [access this article's shopping list here.]

15. Professional double-insulated test lead kit ($25).

MODEL RAILROAD WIRING SAFETY

It's important to stay safe when working with any kind of wiring, including model railroad wiring. We would be remiss to not list these tips on staying safe with your layout's electrical elements:

1. **Use proper insulation:** Always use insulated wires and connectors. This prevents accidental short circuits and minimizes the risk of electrical shock. Ensure that all connections are securely covered with heat shrink tubing, Kapton tape, or electrical tape. Ideally, use double-insulated multimeter test leads.

2. **Correct gauge wire:** Use the proper gauge wire for the task. Larger wires (lower AWG numbers) work best for main track power feeds, while smaller wires can be used for short connections to accessories and inside locomotives for internal wiring. Using wires that are too small of a gauge can cause overheating and voltage drops – or worse, damage the layout or your equipment.

3. **Label and organize:** Keep your layout wiring organized and clearly labeled. Use standard colors for internal DCC loco wiring. This makes it easier to troubleshoot issues and prevents damage from making the wrong connections. On your layout, consider using color-coded wires for different functions (e.g., red for power, black for ground).

4. **Avoid overloading:** Make sure your power supplies/boosters can handle the total load of the trains, accessories, or lights they're powering. Overloading a power supply can cause it to overheat and potentially fail. Use multiple power supplies for different sections of your layout and for different functions, such as a separate bus for structure lighting.

MODEL RAILROAD WIRING SAFETY *CONTINUED ...*

5. **Use circuit breakers:** Install fuses or circuit breakers in your layout wiring to protect against short circuits and overloading. DCC layouts need circuit breaker boards for this kind of protection. Proper protection can prevent damage to your equipment and reduce the risk of a fire in the layout room.

6. **Secure wiring:** Ensure that all wires are neatly routed and secured using clips, ties, or adhesive mounts. Loose or dangling wires can cause accidents and are more prone to wear and damage.

7. **Correct issues right away:** Watch for signs of wear, loose connections, or corrosion. Address any issues promptly to maintain a safe and reliable electrical system.

8. **Turn off power:** Always turn off the power before making wiring changes or repairs. This minimizes the risk of electrical shocks and accidental short circuits. Also make it easy to see when things are turned on by providing a visual indication such as a lighted main power switch for the layout.

9. **Use quality components:** Do not cheap-out when it comes to wiring, connectors, and power supplies – get high-quality components. Cheap components can fail and pose safety risks.

10. **Read the manual:** Adhere to the instructions and guidelines provided by manufacturers for all your electrical components and devices. Make sure you're using them correctly and safely.

By following these recommendations, you can create safe and efficient wiring for your model railroad, allowing you to enjoy your hobby with no worries. ■

MRH Marketplace

Kansas City Southern second and third Subs

Joe Fugate visits Steve Davis' expanding mushroom layout ...

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1. A KCS “ghost paint scheme” GP30 switches cars on the north end of Sallisaw.

VIEW READER COMMENTS

STEVE DAVIS HAS AN HO SCALE LAYOUT IN THE GREATER Tulsa area that regularly hosts operating sessions. The original third subdivision is in a 30x60 space within a 45x60 prefab steel building. Recently, Steve retired and added on another 45x60 extension and is now building the second subdivision.

I visited Steve and toured the layout, taking photos and video. I am particularly fascinated with Steve's layout because he's using the mushroom concept that I helped popularize with my Siskiyou Line 1 in the 1990s.

The original Third Sub had maybe 25% of the layout in the mushroom configuration, while the new Second Sub uses the mushroom configuration for 60% of the new layout expansion, greatly increasing the amount of layout he could get into the space.

The beauty of the mushroom configuration is the layout still looks single-decked, yet Steve has crammed at least 50% more layout into the space. A superb example of a well done mushroom!

For more on the mushroom configuration, see the sidebar: *What is a mushroom layout?*


J. Fugate

WHAT IS A MUSHROOM LAYOUT?

The mushroom benchwork configuration allows for an efficient use of vertical space by adding a second deck to the layout, but unlike traditional double-decked benchwork, the second deck of a mushroom faces the opposite direction and is typically viewed from a raised floor.

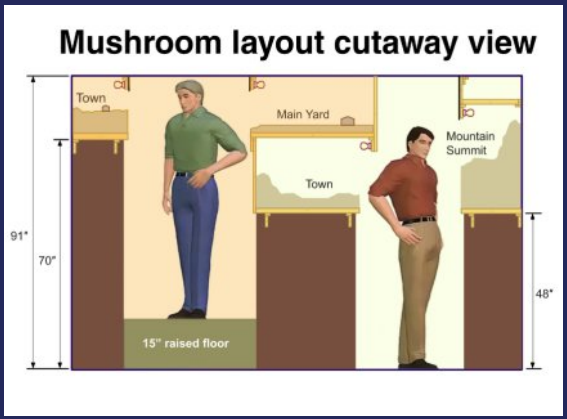
In effect, a mushroom is a double-decked layout that *does not look double-decked* because the second deck is viewed from the other side. The name "mushroom" comes from the benchwork's cross section shape, resembling a mushroom cap with a stem [2].

By using the vertical dimension, modelers can create more complex and expansive layouts without requiring as much of a horizontal footprint. Additionally, the mushroom configuration can enhance the visual appeal of the layout, since it allows for sweeping scenic vistas uncluttered by a second deck in the same view.

However, there are some considerations to keep in mind when building a mushroom layout. Adequate ceiling height is necessary to accommodate the raised floor, and careful planning is required to make sure the more complex benchwork and raised floor are well-supported.

Despite these challenges, the mushroom configuration is a good choice for model railroaders looking to maximize their available space and create a visually impressive layout where the two opposing decks are at a similar relative height from the floor.

To see a 3D video of mushroom benchwork, watch: youtu.be/nJc4jYdKmAA ■



2. This cutaway view shows an example of how a mushroom benchwork configuration permits double-decking parts of the layout without it looking double-decked.

***MRH:* Steve, how did you first get started in the hobby?**

Steve Davis: When I was a young child, I got a Lionel train set – you know, O gauge three rail and all of that. I set it up in my bedroom and played around with it. When my little brother came along, I had to share my room, and that Lionel took up too much room so out it went.

I used some allowance money (plus Santa helped me out a bit) and started an HO layout. My mom got a 4x 8 sheet of plywood, and I built the layout on the plywood.

I knew nothing, so I used little tacks to tack the track onto the plywood. I bought it all at the hobby store and started playing with the new HO trains.

Mom put some casters on the bottom of plywood. My brother and I had bunk beds, and we would store the layout underneath the bed. When my brother and I wanted to play with the trains, we would just roll it back out.

We started laying some switches, giving us some places to drop cars. We had no real operating scheme, we were just having fun running the trains.

My mom was good with paper mâché, and she was a natural artist. She made mountains and hills for scenery, making it look more real than just bare plywood and track.

My mom married my stepdad – a huge train and model railroad fan! He really loved the prototype, and had a passion for being accurate to the prototype. He did the hobby with me, and being an adult, he had more money. So he helped elevate the game.

We built something large in our garage. I lived in California where the climate was pretty moderate year-round. We all parked our cars outside and people used their garages for various things.

We used half our garage for the model railroad – with the other half dedicated to my mom's wood carving and sculpture work, which she did to make extra money.

3. Steve Davis runs a KCS mixed freight led by three diesels in the white scheme through the 3rd Sub's main yard at Heavener.

4. A long freight train rumbles over the vast Arkansas River bridge, one of the more eye-catching scenes on the 3rd Sub.

***MRH:* How did your hobby interests progress from there?**

Steve: After doing all of that, I aged-out of the hobby for a time. As a teen, I became more interested in other things like cars and girls, and not so much in model railroading. I went off to college and later got my first job.

I didn't do model railroading in those years. Once in a while I would watch a train, if it happened to roll by at a crossing. I found getting stopped by a train to be interesting, not an annoyance like many. As I got older and more secure in my career, I started looking for what I could do for fun.

As my kids grew older, I got a job that was more managerial. I previously had worked with a lot of technical things: computer programming, soldering, wiring, and other sorts of electronic things.

When I got into management, my wife noticed I seemed kind of depressed. She bought me a trainset off of QVC on television. When I first got it, I thought, "I don't have time to fiddle with this." But she was so sweet to think of me, and I didn't want to hurt her feelings, so I went ahead and set it up.

I had a home office upstairs, and I set it up in there. I started adding some switches and making what looked like a little layout.

I began visiting a local Tulsa hobby shop and discovered advertisements for some model railroad clubs. The biggest one was the Claremore and Southern Model Railroad, a really large HO railroad operated prototypically with CTC signaling.

I joined that club, and being very new to serious operation, I mostly ran through-trains and learned how to do a little bit of switching. It was all car cards, and that gave me the operation bug.

After that I built my first real layout upstairs. It was freelanced, and I loosely based it on a part of the Frisco near here.

***MRH:* How did you end up with this space for the current layout?**

Steve: As I got more into the hobby, I started traveling, and operating layouts in other places. We wanted to move to a new

place, and I wanted to build a big model railroad. My wife wanted to get out of the city. She didn't like the noise, and although Tulsa is not Detroit, it's also not rural. It's a city with plenty of traffic.

I made a deal with her. I said, "You can find anything you want, anywhere you want within this certain budget. I want a building on it that is large enough to put in a model railroad, or a zoning where I could add a building. Other than that, you can pick the house."

Eventually we found this house that I live in now, and it had a big building that was being used by a young rock band group to rehearse. Because it was set up for the rock band, it had an office, and a window into the other room previously used by the producers. It had a restroom, and I didn't have to do much improvement to it. I just kept what was here, tearing down one wall.

MRH: **How do non-modelers react when they see your layout?**

Steve: I say, "Think of yourself as being in a miniature world that follows a railroad, and tries to duplicate what that railroad does, and how it does it."

In my case, the walls go all the way to the ceiling. Unlike many model railroads, there's nowhere you can stand and see the whole railroad like you could with a 4 x 8 layout, or even a 36 x 8 layout. So to see if trains are coming, you have to rely on the signals.

When you're coming to visit the layout, I will walk you from the main yard at Heavener, Oklahoma, up to a town called Watts, Oklahoma, and then show you all the little towns in between. You will see lots of track, signals, hills and mountains.

You'll see one railroad tunnel in the state of Oklahoma. Oklahoma railroads are not known for tunnels, except for the one that exists on the Fort Smith branch, which runs from Poteau, Oklahoma to Fort Smith, Arkansas, which I modeled.

A lot of people expect to see a tunnel on a model train layout. I knew I was going to get grief from people who think this is just something I dreamed up. So to prove it, I put a picture of the real train going through the real tunnel on the valance above the tunnel.

In short, what you'll see when you visit is my best interpretation of what the KCS railroad looked like in miniature back in 1982.

5. Steve's original Kansas City Southern layout models the KCS 3rd Sub (in green). Recently he extended the building with another 45x60 space and he's now modeling the 2nd Sub (only in the benchwork stage). ***Map adapted from KCS SEC filing documents***

***MRH:* Why the Kansas City Southern?**

Steve: A lot of people ask me why I choose to model the KCS.

I grew up in the San Francisco Bay area, and my favorite railroad growing up was the Southern Pacific. But unless I want to fly back to San Francisco to check on things, I wanted to model something local to where I live now.

A lot of people like the Katy. It's a good railroad and there's a branch line of the Katy running right by my house, and I get two trains a day on it – but it's of course the UP now.

The Missouri Pacific also came through Tulsa but it got subsumed into the UP just like the Katy. The Frisco had a main yard here. It got subsumed into the BN, which became a part of the Burlington Northern Santa Fe.

There are lots of people modeling the Santa Fe. I don't begrudge the Santa Fe – some of my best friends are Santa Fe modelers, and their work is great. They know everything you could ever know about the Santa Fe. And there are some good Frisco modelers, too.

I toyed with modeling the Frisco. When I moved to the Tulsa area, the Frisco was the main railroad that had the big Osage Yard in town – now it's called Cherokee Yard.

I looked at all these options, but I like mountain railroading – so what mountain railroading could there be in Oklahoma?

The most mountainous class one railroad in the state of Oklahoma (that's a big railroad) would be the Kansas City Southern, because it ran through the Ozark Mountains in southeast Oklahoma. The ruling grade on the whole line was Rich Mountain just south of Heavener, Oklahoma.

They would often take helpers off there, coming up out of Shreveport, Louisiana. That gave me interesting grades to model.

I just decided to model something that's not modeled very often. Until recently, the KCS was not a fallen flag, but was the smallest class one railroad in the USA. I had no idea the KCS would one day become a fallen flag!

6. While tunnels are rare on the real KCS, *there is one.* To prove it really does exist, Steve placed a prototype photo of the tunnel on the valance above this location on the layout.

7. This low-angled view the Arkansas River bridge in [4] gives a better sense of its vastness – this photo shows about half of the total bridge.

(Editorial note: The Kansas City Southern merged with the Canadian Pacific in 2023 to become the CPKC railroad. A few months ago, CPKC debuted their new paint scheme.)

MRH: **Having settled on modeling the KCS, what did you do then?**

Steve: I spent the first couple years just scouting out the KCS, looking at topo maps, and getting every book I could about it. I was lucky and met some folks who knew a lot about the KCS. I also joined the Kansas City Southern Historical Society.

I'm still a member today and have made a lot of friends there, too. I attend the meetings every year. Some of those meetings include prototype visits, and discussions with executives who had run the KCS. We also got access to documents you could borrow or check out from their library. Through the historical society, I obtained a lot of great information.

I met Frank Bryan, and he was a huge rail fan. He loved dispatching, signaling, and knowing how railroads ran. He became enamored with KCS himself and has cassette tape recordings of the KCS dispatchers. The KCS dispatchers every morning at 6:00 AM and every evening at 6:00 PM would read the lineups for the trains in order for the next 12 hours. Thanks to these recordings, I know what ran and what didn't – I learned it wasn't the same every day, giving me a good feel for how the railroad ran.

Then there was an article that came out in Trains magazine. I have a page of it posted here in my dispatcher's office. It shows the main numbered trains that ran, and what their numbers were.

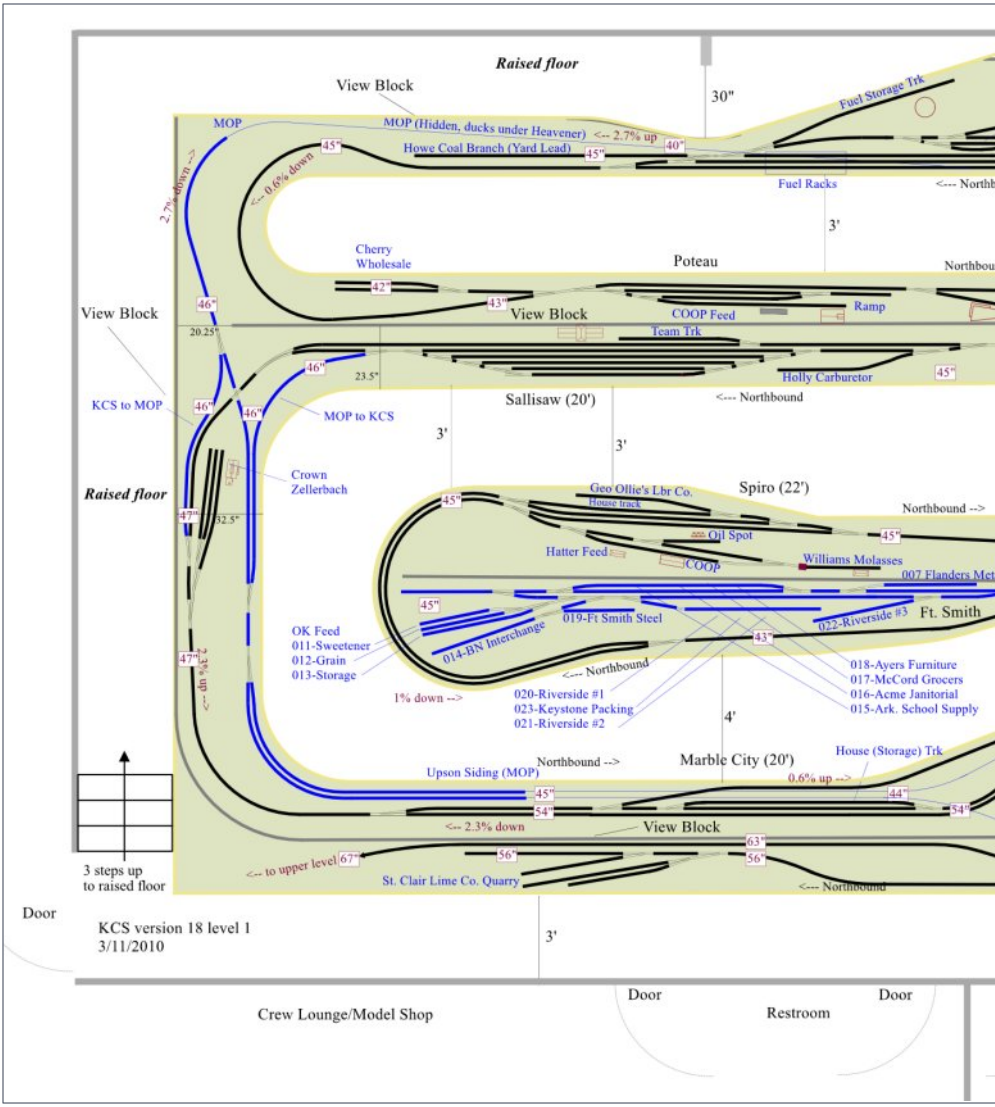
So I collected a lot of information to start with. And as I mentioned, when I started I could also drive over there and see it in person. It wasn't that far of a drive from Tulsa.

MRH: **Since the KCS is essentially a regional railroad, are you modeling the entire KCS route or just a subset?**

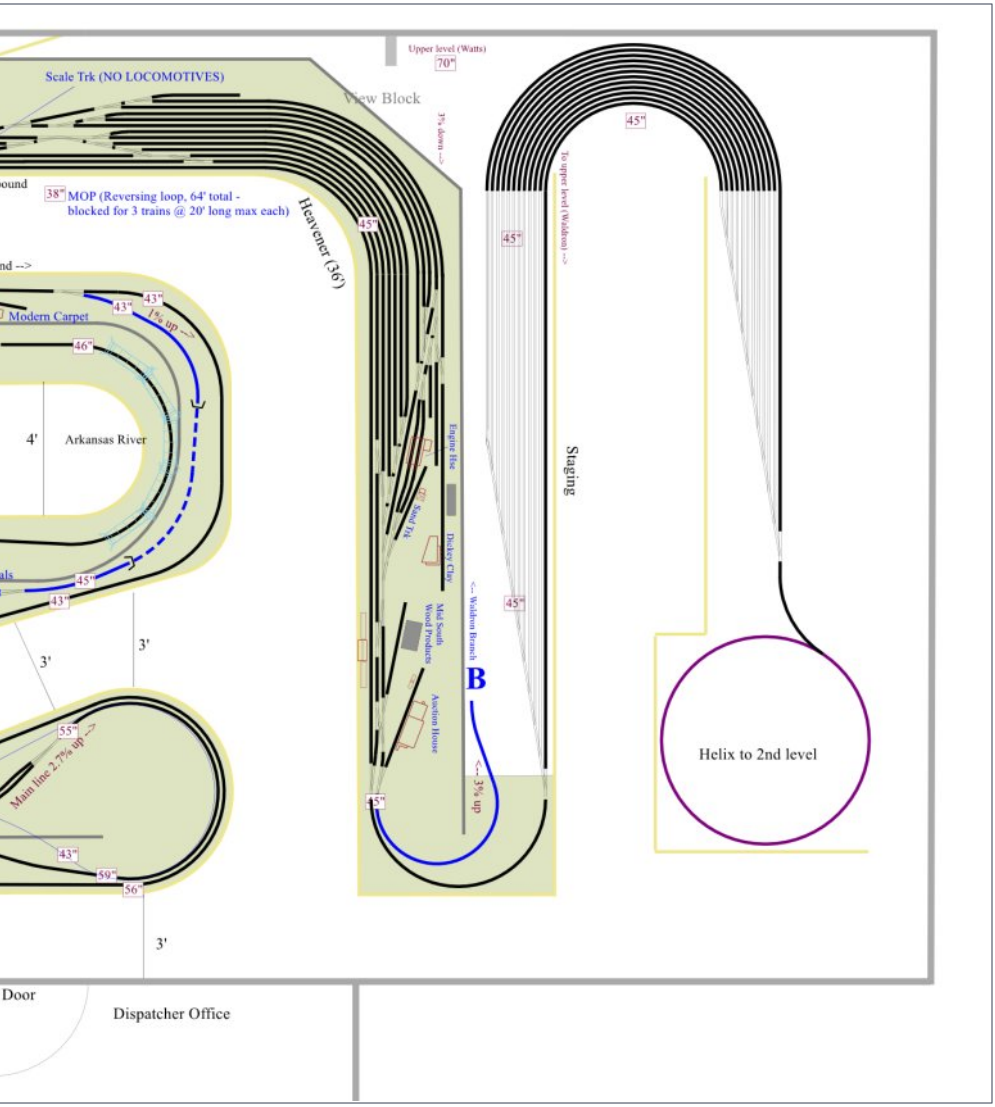
Steve: I knew that I couldn't model the entire KCS, so I had to decide what part of it to model?

8. The 3rd Sub has several “negative space” scenes such as this one with non-descript scenery and no structures or extra details. By not cramming every nook and cranny with details, the railroad feels less like a model and more like a real railroad.

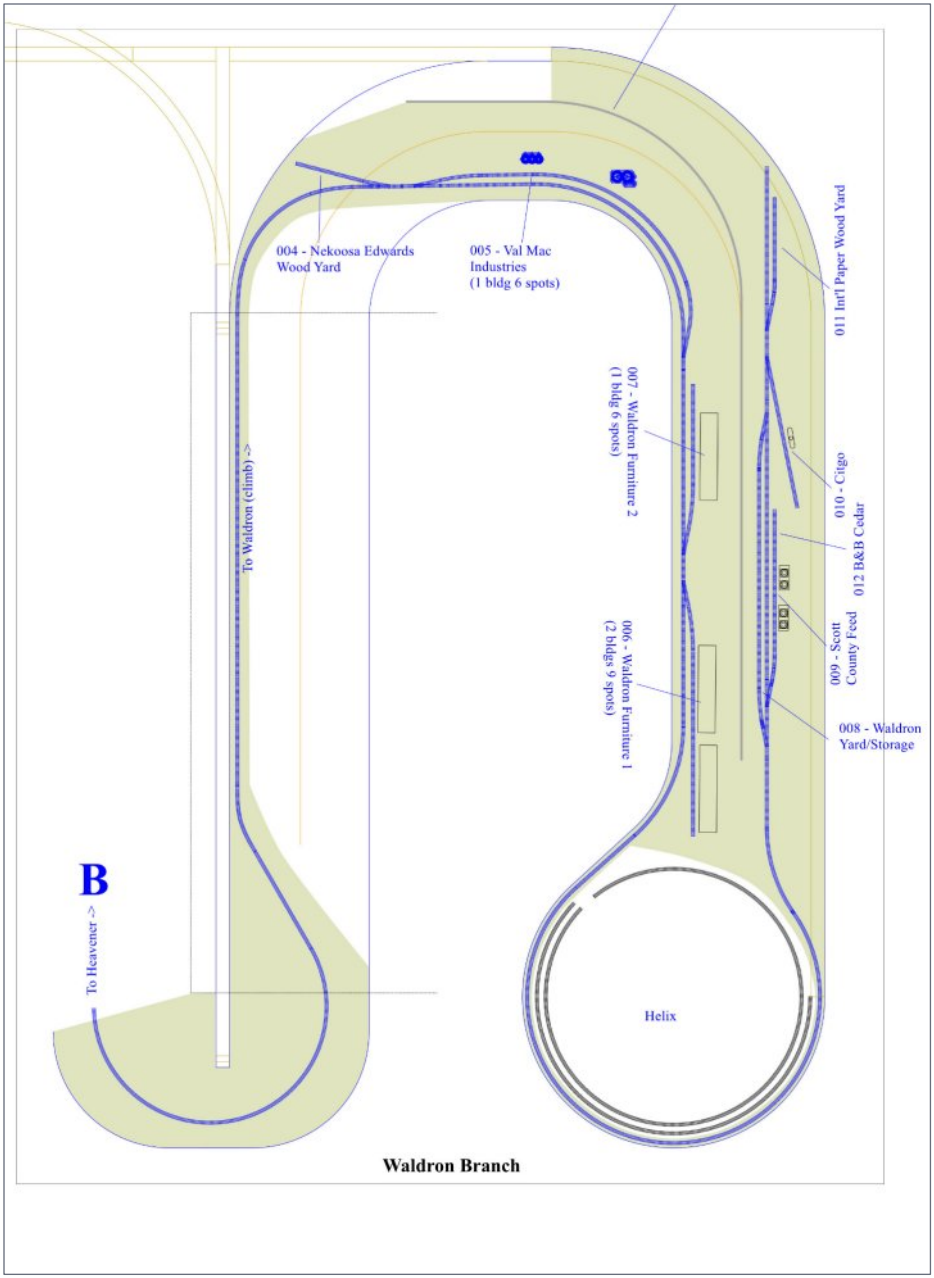
9. Behind the Heavener yard backdrop (on the far left out of the frame), the 3rd Sub has extensive staging and a “service helix” that allows getting trains from the lower level to the upper level without having to remove them from the rails by hand. The helix is a staging convenience and not used during normal operations.



10. Track plan of the 3rd Sub main level. You can zoom in to study the details.



VIEW READER COMMENTS



10a. Track plan of the 3rd Sub Waldron Branch.

Even though the KCS is something of a regional railroad, it's still a compromise when you think about how much of a railroad you're going to model. You can end up with an excessive amount of selective compression if you try to model too much.

I started to work on track plans and what I could bite off. I wanted to include as many towns as possible, and as many industries in the towns as possible. I decided to model just one subdivision, the 3rd subdivision that ran from Heavener, Oklahoma to Watts, Oklahoma.

While the 3rd Sub doesn't go over Rich Mountain, it still had some steep grades, including the ruling grade, which was from Salisaw, Oklahoma to Stillwell, Oklahoma, which got as steep as 2.1%. It was a pretty decent grade. I got a track profile from the KCS, so I followed the grade pretty closely. I just decided to model a small subset of the full KCS.

I skipped a couple of towns that could have been interesting. Bonanza, Oklahoma, for example, would have been good because KCS interchanged with the Rock Island there, but I didn't include that. For every town I do have, I made sure I could put every siding and spur that was in that town.

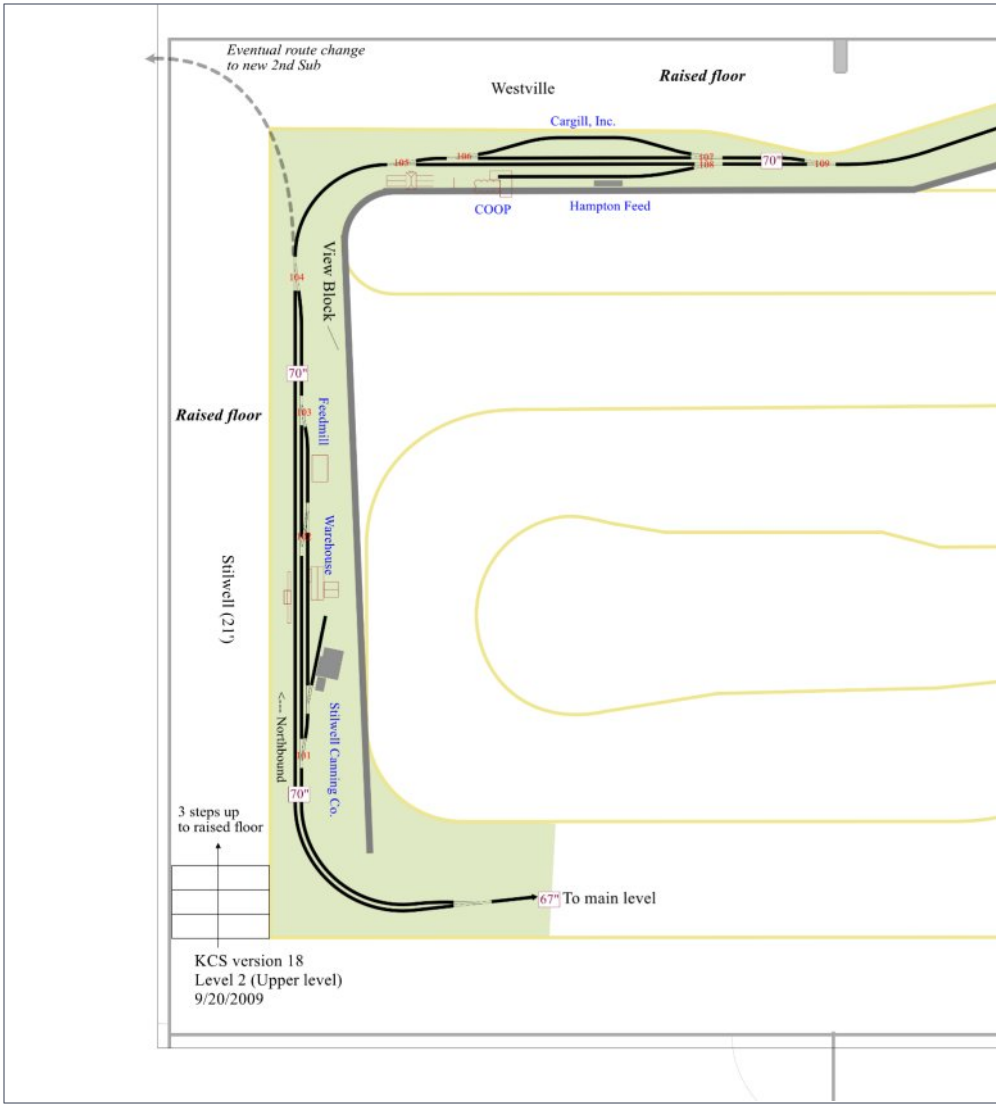
I used the SLIC chart so that if the spur was facing point, it was facing point of my model. If it was trailing point, it was trailing point on my model. Even the passing sidings open to the right or open to the left for a northbound train as they did on the real track chart.

I tried lots of different ideas, double deck this and that. The final track plan is a compromise.

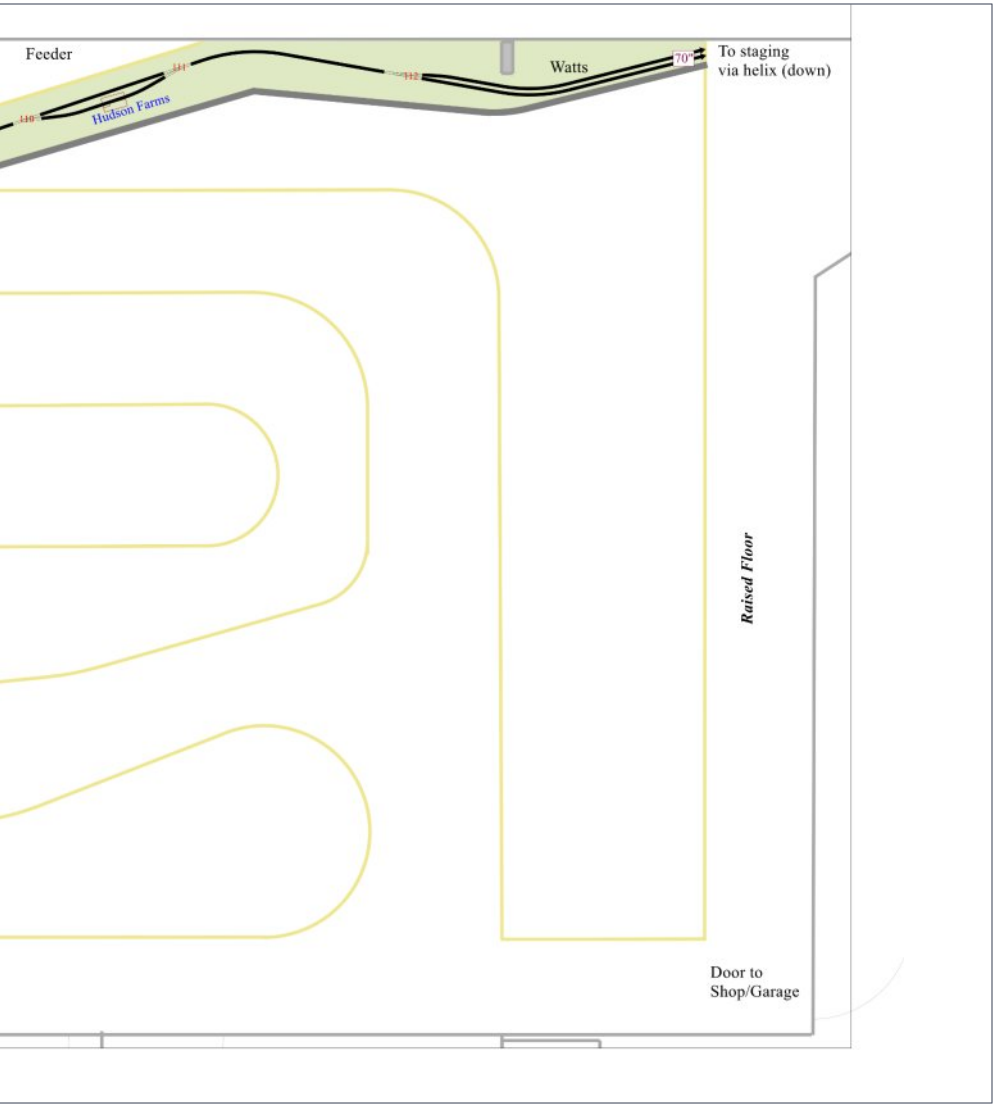
MRH: **How did you finally settle on doing a mushroom?**

Steve: I was traveling a lot for a living, and the worst part is sitting on planes, it can get boring. So I used design software to try out design ideas while on the plane.

There's many CAD programs out there that you can use, I chose CadRail by Sandia Software. I drew the room dimensions in CadRail, then I decided what my minimum radius had to be for it



11. Track plan of the 3rd Sub upper level. The track on the upper left will eventually be rerouted to the 2nd Sub expansion and the Westville – Feeder – Watts section at the top will be decommissioned and relocated into the 2nd Sub room, see [19]. You can zoom in to study the details.



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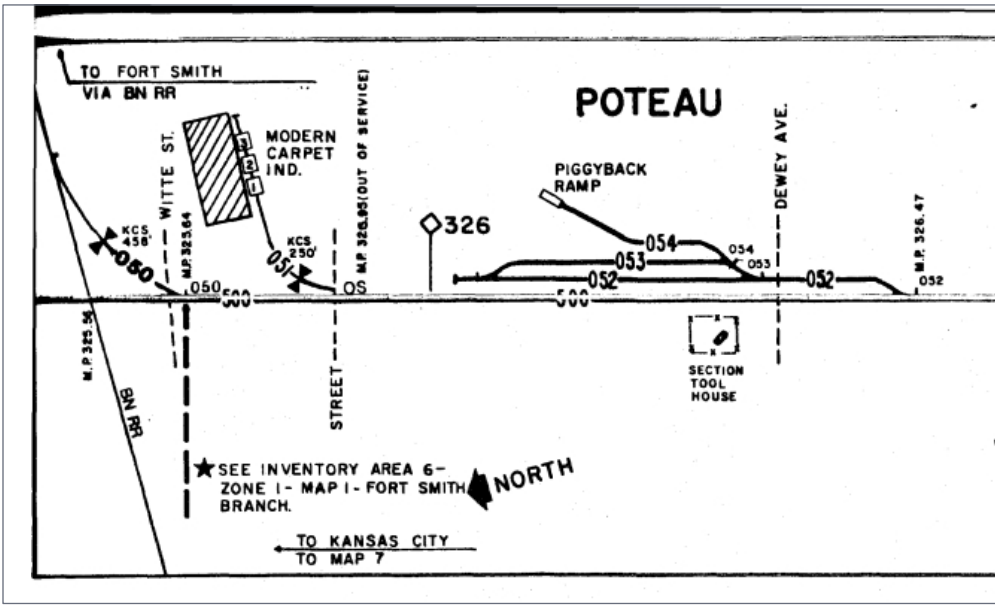
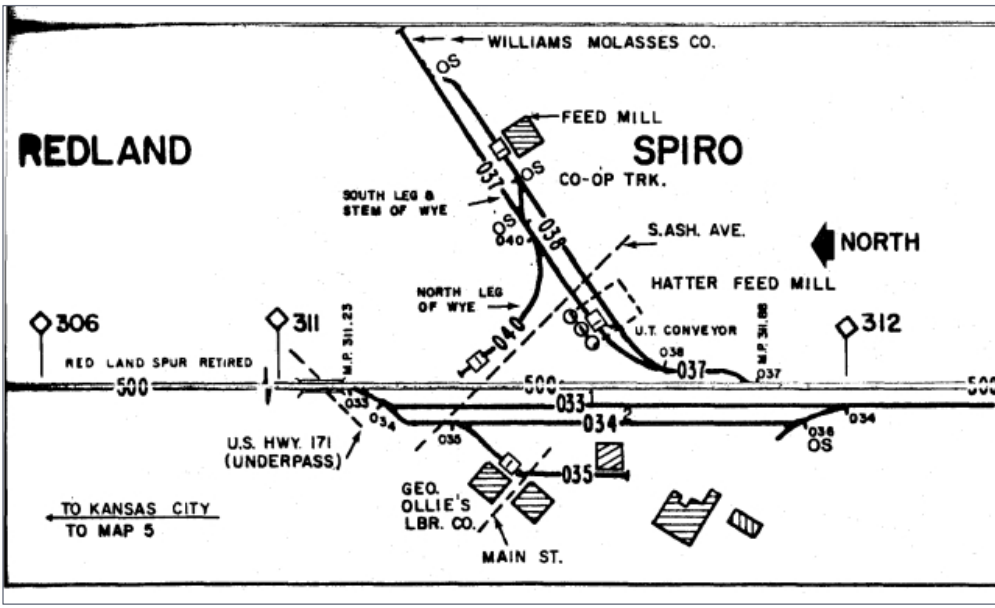
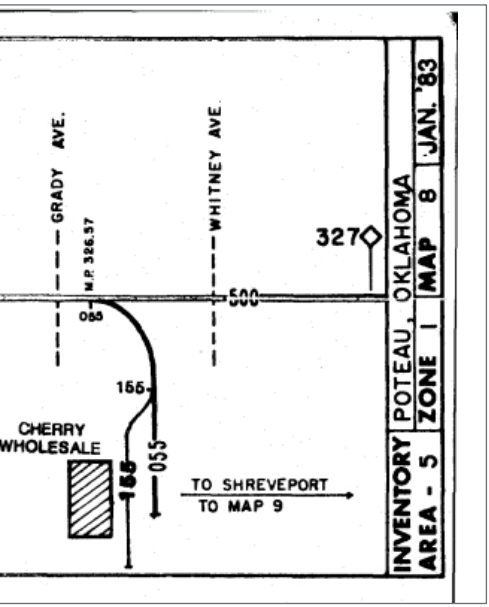
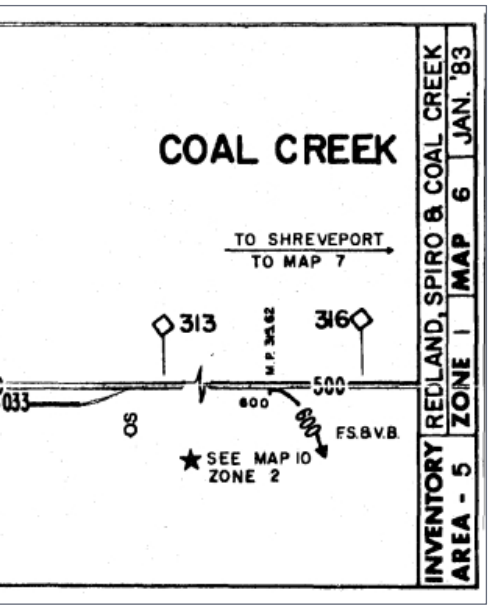

TO FORT SMITH
VIA BN RR
POTEAU
MODERN CARPET IND.
WITTE ST.
M.P. 325.64
KCS 458'
KCS 250'
M.P. 326.05 (OUT OF SERVICE)
PIGGYBACK RAMP
326
DEWEY AVE.
M.P. 326.47
SECTION TOOL HOUSE
M.P. 325.56
BN RR
STREET
SEE INVENTORY AREA 6- ZONE 1- MAP 1- FORT SMITH BRANCH.
NORTH
TO KANSAS CITY
TO MAP 7

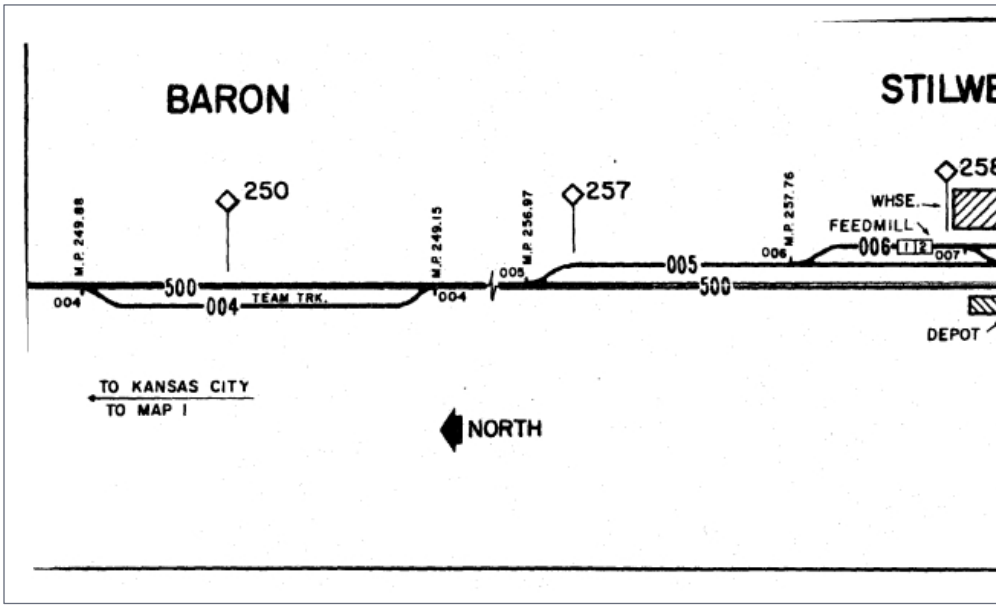

WILLIAMS MOLASSES CO.
REDLAND
SPIRO
FEED MILL
CO-OP TRK.
SOUTH LEG & STEM OF WYE
S.ASH. AVE.
NORTH
HATTER FEED MILL
NORTH LEG OF WYE
306
311
312
RED LAND SPUR RETIRED
M.P. 311.23
U.T. CONVEYOR
M.P. 311.88
U.S. HWY. 171 (UNDERPASS)
GEO. OLLIE'S LBR. CO.
MAIN ST.
TO KANSAS CITY
TO MAP 5



12. KCS “SLIC chart” of the prototype track arrangement in Poteau. Compare with Poteau in track plan [10].



13. KCS “SLIC chart” of the prototype track arrangement in Spiro. Compare with Spiro in track plan [10].

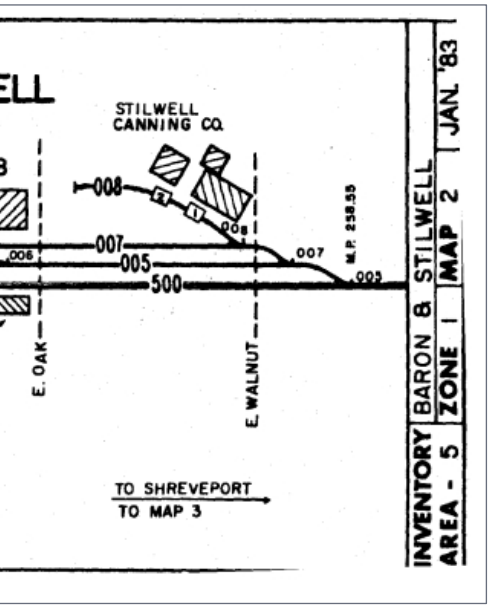


to be decent looking, derail-proof and able to run the equipment I wanted to run. I went with a 36-inch minimum mainline radius for HO scale. That's maybe a tad small for Big Boys and big steam, but it's good enough for what I'm running, which is 1982 diesels, and four and six axles.

I decided how much of the KCS I could afford to cover. I did everything as close to the prototype as I could. Most of the compression I did was just leaving entire towns out. If there were towns with little going on, those were the ones I skipped.

I decided to do a mushroom layout, but not as much of a mushroom as I wish I had done. A mushroom is a form of double deck where the person standing on one level doesn't see the person on the other level because the decks face opposite directions with a backdrop in between.

The other guy might be the upper deck standing on a raised floor looking towards you, but he can't see you because he sees only his own sky board. I have a steep grade like the prototype



14. KCS "SLIC chart" of the prototype track arrangement in Stilwell. Compare with Stilwell in track plan [11].

between Salisaw and Stillwell, and that's how I get to the second deck. But that's also a reason why my mushroom is not bigger.

I would've had to put the grade somewhere where it wouldn't have really been. I was constrained by my own desire to follow the prototype. That's what I decided to model, but now I've decided to expand on that. (In the bonus download extras for this month, Steve gives us a walking tour of his new 2nd Sub expansion, which is still just benchwork. **See this month's bonus downloads.**)

My largest curve is 156 inches, which is huge in HO, and the trains just look wonderful going around that. I have another 120 inch radius, another broad curve. I do have a few reverse curves but I've tried to stick to prototype railroad track geometry practices to avoid any toy-like look.

I didn't want to just dream up track arrangements, so I obtained track charts from the KCS. They're called SLIC charts, which are Spot Location Inventory Charts. Some folks who model the Santa Fe might ask, don't you mean CLIC chart?

The KCS did call them SLIC and I have the originals to prove it. I have drawings of all of the industries, how they were served, how many tracks were there [12, 13, 14]. They also have where to spot cars in some cases, and sometime even what kind of car had to be spotted there. They're a wealth of information.

MRH: **Why did you pick 1982 as your modeling era?**

Steve: Why 1982? I looked at when mergers occurred, and when certain paint schemes were no longer seen. I looked at when the KCS stopped running cabooses on through-trains, because I'm a person that believes that God created trains to have cabooses on them!

It turns out 1983 was when they started phasing out cabooses. Cabooses were on through-trains, and then in 1983-1984, they started phasing out more of them. So that's one big reason.

The other reason was the Missouri Pacific still existed as a railroad, and the KCS did some interchanging with the Missouri Pacific. It had not been absorbed into the UP yet. While the Frisco and the BN were beginning to merge, you would still see Frisco equipment.

I thought about moving the date a little earlier. There were things I liked about an earlier era, like a little more passenger service, and older Baldwins and ALCOs. I had a fondness for those things.

I moved to the Tulsa area in 1982 and started railfanning, and at that time, the power was 4-axle and 6-axle hood units. I have fond memories from those days. They weren't running anything like the ES-44s or the like yet. They still ran first generation diesels like GP-9s, so I thought 1982 made for an interesting compromise.

The other thing that affected my era decision: color. The KCS had run everything as red in the earlier years, and I thought it was kind of ugly. Then they went to white during the eighties (the "ghost" scheme) with a big red KCS on the side of the hood.

Then they went to a gray color – my guess is they did that to cut down on painting costs. Gray can take all the dirt in the world and you wouldn't know it, kind of how the SP ran their gray diesels and rarely washing them.

Then around 2010, they went back to the original colors from their passenger train called the Southern Bell [15, 16]. You might call it a heritage paint scheme. I think it looks attractive, a bit like the SP daylight colors.

In summary, I picked 1982 for the color, for the availability of cabooses, for the fact that more industries were still around being switched by rail. A lot of it hadn't already gone to trucking. If you go railfan this line I'm modeling today, a good two thirds of the industries don't even exist anymore.

So I chose 1982.

***MRH:* When did you start construction?**

Steve: Shortly after I was an empty-nester, and our kids were off either in college or married, we moved. As I mentioned earlier,

15. In 1982 on Steve's layout, the Southern Belle passenger scheme survives as the colors for a KCS business special ran at the behest of railroad executives.

we moved to a house with a building for a model railroad. In about 2006, I started construction.

I started constructing basic framework, and I made a deal with a skilled carpenter friend of mine, Carl Schorfheide, who was out of work for a while to help me with the benchwork. Even though I was traveling a lot at the time, with him always here working on the layout, we made pretty good progress on the bench work.

By about 2008 I was running trains, but with very little scenery. Tulsa has an annual Layout Design - Ops Sig event they do. I got pushed hard by then superintendent Dave Salaman to get this layout operational in time for the next Layout Design - Ops Sig, because he wanted plenty of ops slots.

I busted my butt even though I was working full time, and I got it operating. It didn't look pretty – it was a plywood Pines and Pacific. I got a lot of help from my Dad who was a MMR – he built a lot of the structures, buildings, and bridges – and my Mom who did a lot of the backdrop painting. My wife painted the basic blue skies and clouds.

16. Around 2010, the KCS brought back the Southern Belle scheme on their modern diesels. *Photo courtesy of Wikipedia*

Four times a year, my Mom and Dad would come out and visit us here in Oklahoma. I would take two weeks off work, and we would do nothing but work on the model railroad. I was up and running with scenery around 2014 or so. So it's been a running railroad most of its life.

I've continued to add and upgrade things like better scenery, better bridges, adding roads and adding more buildings.

MRH: **How did you end up deciding to build the 2nd Sub expansion?**

Steve: As I approached retirement, my model railroading friends (we do lunch every Wednesday) kept giving me a hard time.

"When you retire, Steve, what are you going to do? You already built that railroad." One of my friends, a very good modeler by the name of Ken Ehlers, kept saying, "Well, you just need to tear yours down and build something new."

I told him, "I can't bear to do that! It runs good. I like it. It's fun!" I worked real hard to get this running, maybe a bit too fast because I wanted to run trains while I was building. So I finally decided to do the opposite.

I bought a second prefab steel building, had a pad poured for it, and had it put up. Then I began to plan an expansion to the next subdivision. While I model the 3rd Subdivision from Heavener, Oklahoma to Watts, Oklahoma, I thought it would be fun to add the 2nd Subdivision going further north from Watts, Oklahoma to Pittsburgh, Kansas [5].

The last subdivision north of that, which I'm not modeling, goes from Pittsburg, KS to Kansas City. That's the 1st Subdivision.

MRH: **Now that you're retired and started the 2nd Sub, how is that going?**

Steve: Construction on the 2nd Sub has started. I have most of the benchwork done, some roadbed down, and even some track laid. A few buildings have been built, but they're not really placed on the layout.

I decided that my retirement would be better spent having a railroad. I can still run and enjoy the 3rd Sub, but I can also work on building the new expansion. I'm really enjoying doing that. It gives me something to get up and get excited about.

I have an open work session once a week, usually Friday mornings. I also have a bunch of pretty committed guys, anywhere from six to as many as 16, who come from 10:00 AM to 2:00 PM and help build it.

Some of them just want to do roadbed, risers, and the like. Some of them like to lay track, some of them put ballast in, and some of them paint stuff – I'm talking about painting the plywood, or the foamboard brown, and the painting the sky blue – you know, roller painting.

My Mom is now too old to paint my backdrop, and I did not inherit her artistic talent either. My wife may do a lot of the painting, if she's willing. Or I may go to photographic backdrops. I have some friends who have drones and are very good modelers.

17. At the north end of Stilwell on the upper deck of the 3rd Sub, the main will curve off to the left and enter the new expansion that houses the 2nd Subdivision – see the upper left corner of [11].

I have a large format printer right here in my dispatcher office area that I got as a parting gift when I left iHeart Media. It'll print up to three feet high on photo paper and output a length as long as you want. The paper comes in 100′ x 3′ foot rolls.

MRH: **Is the construction going as fast as you would like?**

Steve: Whenever you take on something as big as building a model railroad with this much space, it's sort of like the best laid plans of mice and men. I would love to say that the progress has been extremely fast. I think it was very fast when I started the original railroad, because I was just so excited about it.

Then life got in the way. I had to travel, I had to work, and it slowed and bogged things down. Then when I said, "Well, I'm going to start this new subdivision, I am retired, I can work on it all the time. I can really get it done quickly." It has not gone as quickly as I had expected it to.

Part of it is I fell victim to the trap of, "Well, I'm retired. I have all the time in the world, so I don't need to kill myself getting this

18. The new 2nd Sub fills the added 45x60 space and the ring around the outside is a mushroom throughout, effectively providing an additional 60% of layout space over that of a single decked layout in the same space.

done today. There's always tomorrow." That's part of it. The benchwork, because it was almost all mushroom, was much more complex.

I had to build a whole lot of raised flooring, and it was inch and a quarter floor grade plywood that you could use on a second story of a house to pass an inspection. I went ahead and did that, but that took a long time, and it was rather ungratifying.

It was lots of wood, plywood, 2 x 4s, 2 x 6s, joists, all that kind of thing. It didn't look like a train, it was just sawing. It got discouraging.

I almost said, "Why did I buy this building? Why did I do this?" But now that we've gotten most of that wooden superstructure done now, we're into installing roadbed and track. That seems to be going a lot faster.

I might come here in an afternoon and lay say, 40 feet of track. While that sounds like a lot, there's a whole lot of layout in the new expansion. Each of the peninsulas on the 2nd Sub are like 50 feet long since the expansion is 60-feet long. And because it's almost totally mushroomed, that two times the peninsulas of a single decked layout.

I like that you can lay the track and you see the results quickly, and so it's a lot more gratifying. My hope is to be operational by the Layout Design – Op Sig in 2026. I need to get the 2nd Sub up and running by the end of 2025. It may not be pretty, but that's my obsession.

*Editorial note: In the **bonus download extras** this month, we provide a walking tour of the new 2nd Sub expansion. It's all benchwork photos, and Steve's explanation of what will be at each location, but it does give you a better idea of how the new 2nd Sub fits into the space.*

MRH: **What kind of track are you using?**

Steve: When I started building this railroad, I thought a lot about what kind of track to use. The biggest and best local model railroad I was familiar with was the Claremore and Southern club layout. It's probably equivalent in size to what I have now, but

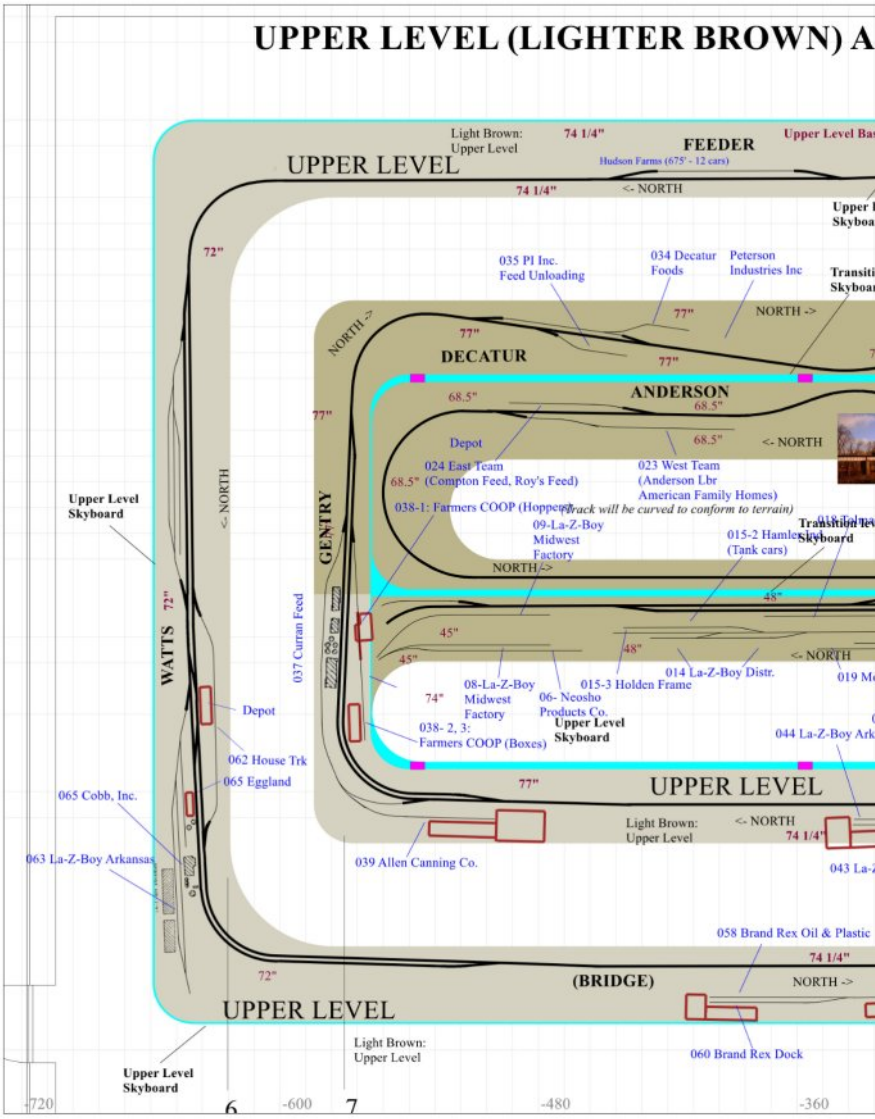
has more industries and more branch lines. Plus they're fully CTC signals.

Claremore and Southern used Shinohara track before it became Walthers Shinohara. I went with all code 83 Shinohara track on the 3rd Sub, except in the staging yards, where I used Atlas code 83. I had thought about using code 100 in the staging yards. It's a little more forgiving, and maybe I should have, but I didn't want to have transitions and go from one code to the other. So I just stuck with code 83.

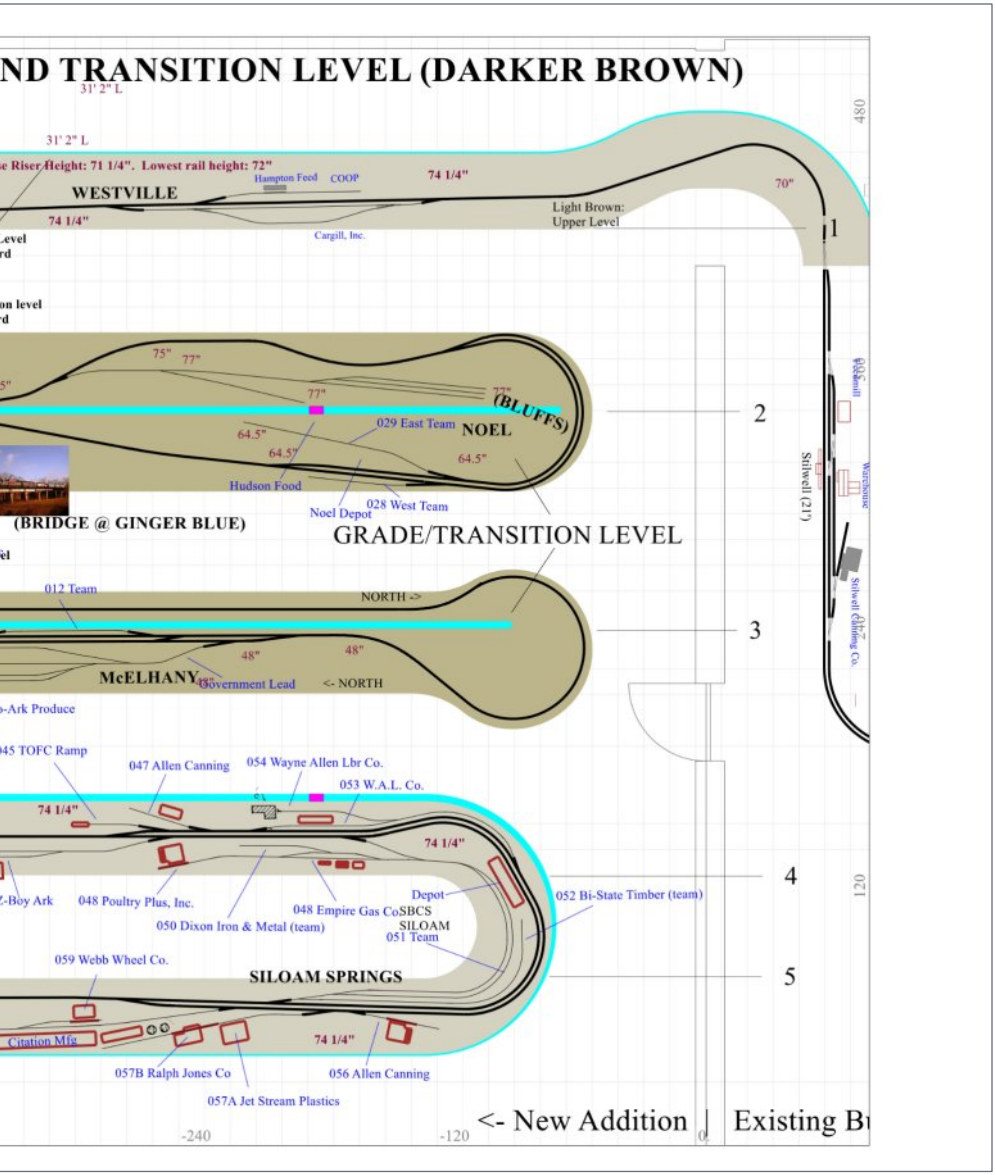
Now that I'm building the 2nd Sub, Shinohara had become Walthers Shinohara track. I know a lot of people swear by PECO Track. I've not really been a fan of PECO's turnouts when they were originally made more for European layouts.

When I started building the 3rd Sub, PECO didn't make a number eight. They just did small, medium, and large radius, so I went with Walthers. I'm using Walthers code 70 on the paper mill and some branch lines, and code 83 on all the main line.

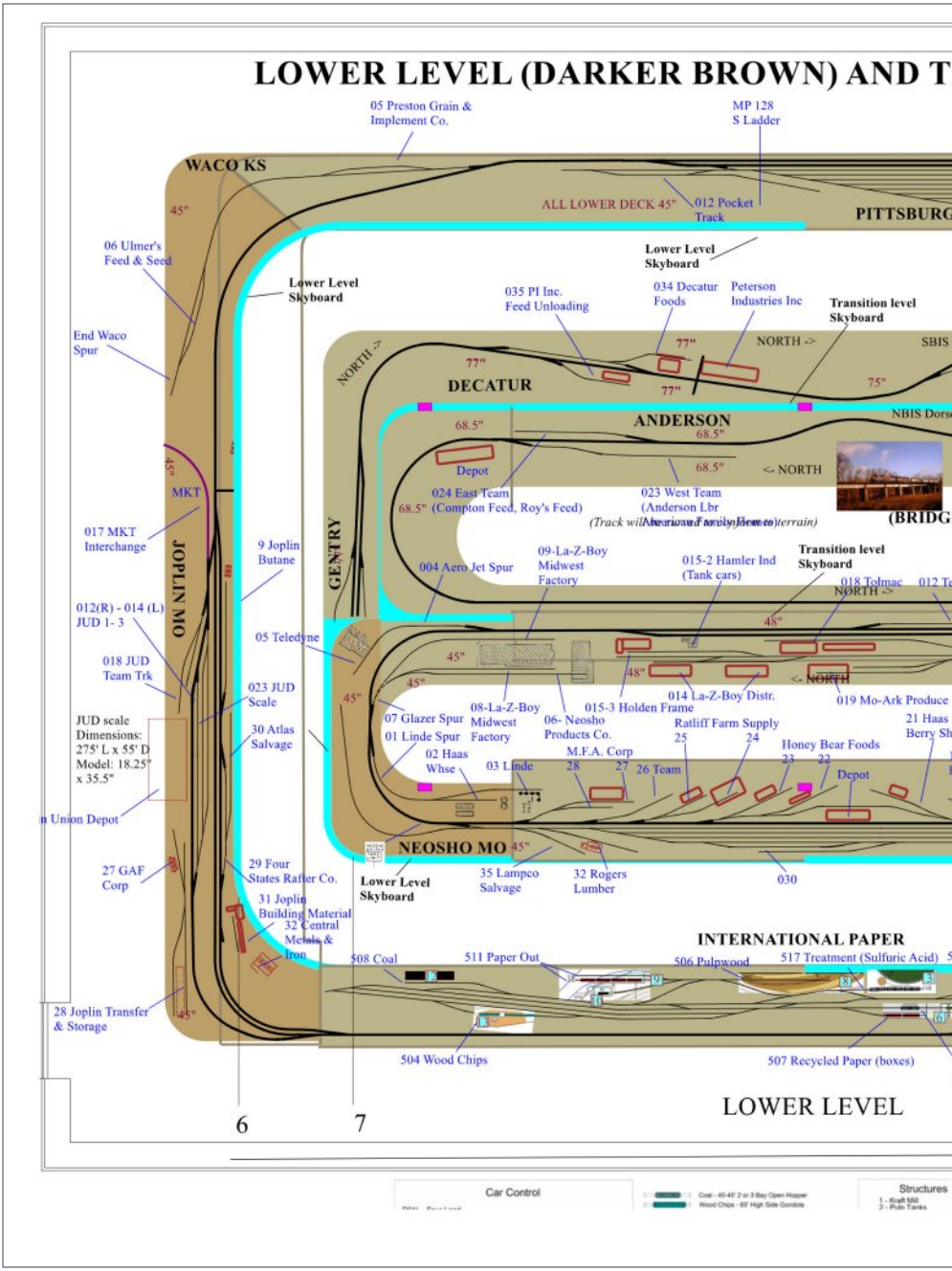
The new Walthers switches are nice – they make it really easy to power the frogs. They're metal insulated frogs, but they have a little metal tab that you can wire to electrify the frog. That's the best of both worlds.



19. This is the "upper level" of the new 2nd Sub plan. Note that Westville, Feeder, and Watts from the 3rd Sub have been relocated into this new space. The darker brown middle peninsulas drop down one step to a slightly lower raised floor



than the light brown-gray benchwork. The darker brown peninsulas are single-deck and not “mushroomed.”


LOWER LEVEL (DARKER BROWN) AND T
05 Preston Grain & Implement Co.
MP 128 S Ladder
WACO KS
ALL LOWER DECK 45"
012 Pocket Track
PITTSBURG
06 Ulmer's Feed & Seed
Lower Level Skyboard
035 PI Inc. Feed Unloading
034 Decatur Foods
Peterson Industries Inc
Transition level Skyboard
End Waco Spur
NORTH ->
77"
DECATUR
75"
SBIS
NBIS Dors
68.5"
ANDERSON
Depot
<- NORTH
MKT
017 MKT Interchange
024 East Team (Compton Feed, Roy's Feed)
023 West Team (Anderson Lbr
(BRIDG
JOPLIN MO
GENTRY
9 Joplin Butane
004 Aero Jet Spur
09-La-Z-Boy Midwest Factory
015-2 Hamler Ind (Tank cars)
Transition level Skyboard
018 Tolmac
012(R) - 014 (L) JUD 1- 3
05 Teledyne
48"
018 JUD Team Trk
023 JUD Scale
014 La-Z-Boy Distr.
019 Mo-Ark Produce
JUD scale Dimensions: 275' L x 55' D Model: 18.25" x 35.5"
07 Glazer Spur
01 Linde Spur
08-La-Z-Boy Midwest Factory
06- Neosho Products Co.
015-3 Holden Frame
Ratliff Farm Supply
30 Atlas Salvage
02 Haas Whse
03 Linde
M.F.A. Corp
26 Team
Honey Bear Foods
21 Haas Berry Sh
Depot
n Union Depot
NEOSHO MO
27 GAF Corp
29 Four States Rafter Co.
Lower Level Skyboard
35 Lampco Salvage
32 Rogers Lumber
030
31 Joplin Building Material
32 Central Metals & Iron
INTERNATIONAL PAPER
508 Coal
511 Paper Out
506 Pulpwood
517 Treatment (Sulfuric Acid)
28 Joplin Transfer & Storage
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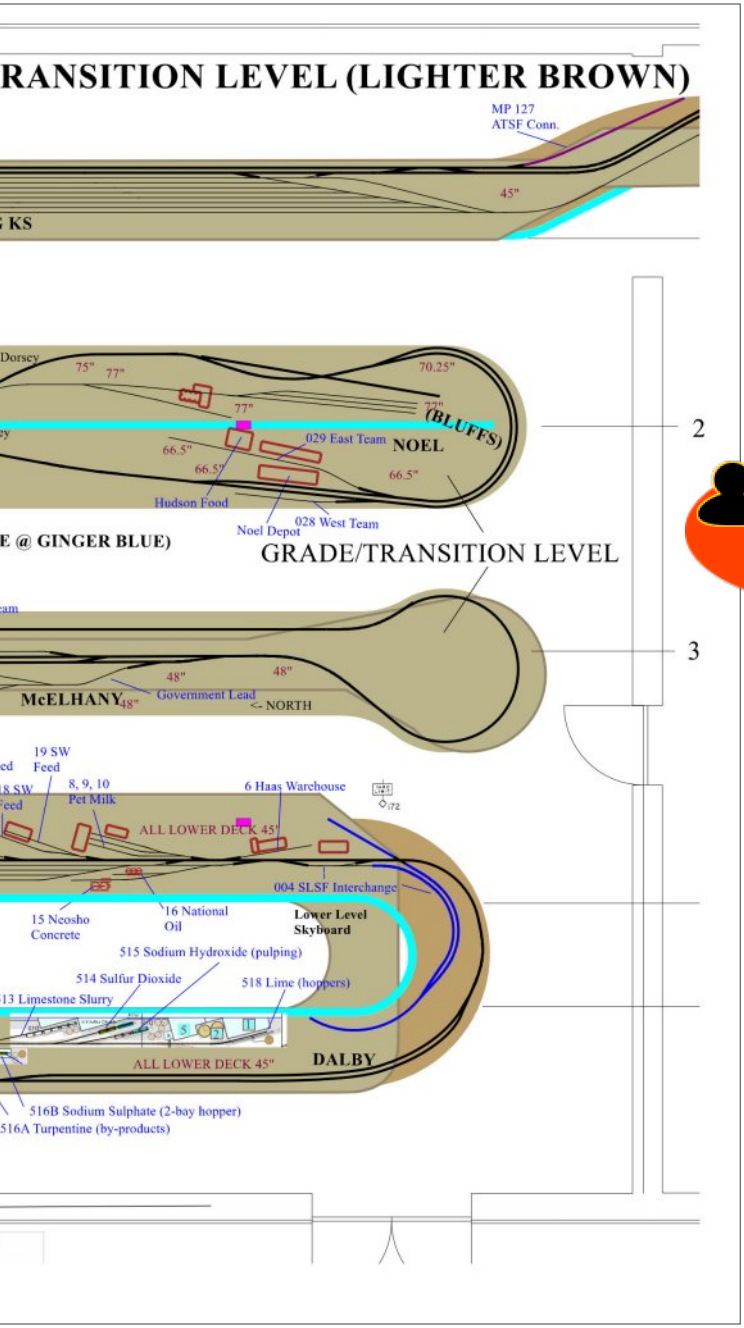
LOWER LEVEL
6
7
Car Control
Structures



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20. This is the "lower level" plan of the new 2nd Sub. Gentry through McElhany are duplicated from the upper level, and Neosho through Pittsburgh are the "mushroomed" segment below the light gray-brown benchwork on the upper level plan.

The new Walthers turnouts use continuous points and closure rail, which is a much better idea. Walthers also added a PECO style finger-snap center-over-spring for throwing the points. For any track that I'm throwing by hand, I'm probably just going to use finger-snaps.

On the 3rd sub, I'm using Caboose Hobby's ground throw switches for everything that's not attached to the main line, or dispatcher controlled, but they're a bit out of scale. I might try N scale Caboose Hobby ground throws since they're smaller.

For the powered switches, I still use the tried-and-true Tortoise motors to operate those. With a tortoise to work like the prototype, you want the points to glide place to place, not snap, so you have to remove those springs. I don't consider the spring feature a plus with turnouts to be controlled by a Tortoise. I care because I'm running a CTC dispatched railroad with the dispatcher controlled turnouts thrown by Tortoises.

MRH: **What's the ruling grade on the railroad?**

Steve: I have exaggerated the grades some. On the real KCS, I think it's just at 2%, and that's by Marble City, where the quarry is. However, I go as high as 3.5% on the layout.

Two reasons I did that. I had to get the benchwork high enough, and I didn't want to put the helix on the mainline. Number two, we don't run hundred car trains – while the KCS was known for really 120 car trains in the '80s, and with lots of power on the trains.

While they didn't have remote-controlled Distributed Power Units (DPUs) back then, they had something called DynaTrol, a forerunner of DPU. On the locomotives that had a longer nose, they called them snoots, they installed radio equipment.

Consequently, you controlled the other locomotives over the radio via the lead loco. It was like DPU, although not as sophisticated as today's DPU. DynaTrol allowed remote controlled pushers on the rear and mid train helpers, long before the '80s.

21. Steve has one proto-freelanced train on his layout: this Amtrak passenger train rolling into Heavener. Maybe Amtrak wil take the hint and add a train on the KCS trackage?

22. Steve made the grades on the 3rd Sub a bit steeper than the prototype so his longer trains actually needed helpers. Here a long southbound coal drag rolls through Spiro.

The KCS had the Ozarks to go through, so they used a number of unique “snoot” locomotives with those extra long noses. And no, it wasn’t for an extra big bathroom!

When setting the layout grades, I wanted to see my trains struggle up the hill and actually need helpers, with a 25 - 30 car train. The real trains were over a hundred cars as I mentioned earlier.

If I’m going to run 25 cars trains as my max length, I could probably put two locomotives on it, and pull anything up a 2% grade. So I made the grade stiff enough that I’ve had trains that had two big 6-axle locomotives try and pull it, but they can’t. That is described in real railroading as "falling down" when the wheels start spinning. They won’t be able to pull the grade.

For most 25-car trains then, I need three locomotives.

I also have this 45-car train. It symbolizes the big drag freight that ran all the way from New Orleans to Kansas City, nonstop. Maybe a bit of block swapping, but no real stopping and switching.

23. Here’s a longer distance view of the coal drag in [22]. On the left you can see the end of the train with the helper exiting Spiro. The train wraps around the peninsula sitting in the siding, awaiting another train soon on the main in front.

On that train, I've got five locomotives on it, three in the lead and two DPUs in the middle. If I pull one of those locomotives off that train, it won't make the grade. It needs all five of them.

I like exaggerating the grade, and because we're modeling in scale, I have the grades proportional to the real ones. The steepest grades on my model are where the steepest grades are on the prototype, but they're a higher percentage than the prototype was, for the reasons I just described.

MRH: **Tell us more about what a DPU is.**

Steve: DPUs are one way multiple locomotives can work together, and it's something that came about in the diesel age. It wasn't done with steam. If you wanted five locomotives on the steam train, you needed five engineers, and five firemen, and you needed to synchronize all of that.

DPU means distributed power unit, and it allows one engineer in the train to control all of the locomotives, and he can even separately control them to some extent. With modern railroading, you think about Cajon Pass and Tehachapi Loop (2.2%), they actually separately control their DPUs.

If they're going up the hill and need to stop, they want to keep pushing with the DPU. This runs out the slack on the train and keeps the cars bunched. When they finally get a green light to go, the lead engine isn't trying to pull the weight of the whole train all at once. It could't do it – it would slip and spin.

So when they start to pull a bunched train, the locomotive only has to pull one car at a time as it pulls the train cars back out thanks to the slack between cars.

There's an art to it, and I'm doing both things. On the 2nd Sub, the grades are not as severe, and they didn't need any DPU or helpers except for heavy freights going southbound between Pittsburgh Yard and Watts, Oklahoma. Between Neosho and Gentry, up until 2000 they ran manned helpers.

There might be two locomotives on the rear run by one individual with no DPU. The helper pool started in Neosho, went to the siding at Dalby, then got on the back of coal drags because the loads were always going south, which was where the steepest grade was.

They would shove those things up to Gentry, Oklahoma. They had a guy riding on the front, and they'd uncouple on the fly. The main train would keep going. Meanwhile, the helpers would stop and get authority from the dispatcher through the signals, and work their way back down the hill.

I thought that would add interest to the operation. Since I'm modeling 1982, and that still happened up until the year 2000, I'm going to have manned helpers or pushers for south bounds just like they really did.

But they didn't run helpers over Rich Mountain out of Shreveport, Louisiana. They equipped northbound trains with enough power to pull the grade over Rich Mountain, which is the ruling grade on the KCS.

24. The coal drag from [22, 23] has been sitting in the siding and finally the northbound train lead by a trio of diesels rolls by on the main.

When they got to Heavener, they either had enough power to make it all the rest of the way, or they dropped some of the power and still had enough power to make it the rest of the way.

MRH: **If you had it all to do over again, what might you have done differently?**

Steve: I wish I had more aisle space just on one part of the layout at the quarry. For that job, somebody stands there all day and it's right in front of the bathroom and the lounge. So when you're thinking about designing your railroad, don't do what I did.

In theory, I figured I'd always have four-foot aisles, but I dropped to three feet in this one area. People were mostly just walking through, so not a big deal, right?

But I didn't stop to think it's right by the dispatcher's office, it's right by the bathroom, and it's right by the crew lounge. That poor quarry guy, especially if he's a larger gentleman, is constantly being asked to move out of the way, or to step back, or even to step into the restroom so a steady stream of people can get by.

That was a mistake. When I designed my 2nd subdivision, I made sure I never violated the four-foot minimum aisle.

On the 2nd Sub, I didn't have to do as much selective compression. I didn't have to eliminate towns as much as I did on the 3rd Sub – having much more of the new layout area be double-decked mushroom, I had more trackage and benchwork footage to play with.

The only towns I eliminated on the 2nd Sub were towns with either zero sidings to work or just one. Anything that was material on the 2nd sub, I kept it. I made the grades on the 2nd Sub longer but less severe.

There's a section where it's not double decked on the 2nd Sub, but that's fine because the mushroom allows using a long gradual grade to get from the lower deck to the upper deck.

I like it the least when I have to sacrifice and compromise, mainly when the aisles became too narrow in certain spaces on the 3rd Sub.

MRH: **What's your least favorite part of doing a layout, and how do you motivate yourself to do it anyway?**

Steve: Building a model railroad has been fun for me. I'm grateful that I have friends who will partner with me and help me. Since I'm only human, there are parts of doing a layout that I don't like.

What I really enjoy is planning operations, planning the layout, designing, figuring out how it's going to operate, figuring out the signaling system, and how that's going to work. What I don't love as much are things like putting in ballast or ground cover and making the layout pretty.

I do it, but wherever I have friends who will do it for me, I love that.

When I say I like to design, I may be giving myself too much credit, because most of it I just steal from what the prototype does.

I spent a lot of time, especially on airplane rides, thinking about things like: if I have a 30-car train, and he has to drop 15 cars, how long does the siding have to be, and do I need this much extra running distance on the siding?

I find painting and coloring the backdrop to be tedious, I'm a horrible painter when it comes to scenery on the backdrop. In fact, I just don't do it. I not only dread it, but I dread it so much, I just don't do it.

I get somebody else to do it, or like I said earlier, maybe go to photo-backgrounds.

Structure building, I like. It's fun and it's really gratifying. Once you build it, it stays. But I don't like how long it takes to build each individual structure. With a layout, the size of this, there's going to be hundreds and hundreds of structures. Even if I finish five, that's a drop in the bucket.

25. This specially modified low-nose first generation rebuilt GP switches the quarry on the branch line out of Marble City. The branch to reach the quarry exits the main on the other side of the peninsula.

26. The quarry branch used to be the mainline, so the branch includes this substantial curved cord truss bridge. Steve and his step dad (an MMR) kitbashed this bridge.

So I buy structures at train shows, or I get some friends to build them for me, and I build some. I do love doing structures, but there's lot of structures needed on a layout this size so I appreciate any help too.

However, I enjoy what I find many people dislike: that's electronics and DCC programming, and the design of all of the CTC.

I'm an electrical engineer by trade, and because I designed control systems for radio and television stations for a good part of my career, that's something I really enjoy. Just like I have people help me build structures and such, I've helped other people set up their CTC systems.

I wrote a series of articles for the Ops Sig about how to set up dispatch panels and signals, where signals go, what kinds of signals there are, and why you would use one versus the other. All of that I just really love, although I know a lot of people hate it.

I've crawled under a lot of other people's railroads and run wire. DCC is great, but I don't like decoder installation all that much. As an electrical engineer, I absolutely know how to do it, but what I don't like is getting in there with those tiny little wires and my big fingers. I sometimes leave that to other people.

MRH: **Tell us a bit about the structures and bridges on this layout: scratchbuilt, kitbashed, what?**

Steve: One of the really interesting things about this railroad is the KCS was unique in many ways. With the help of my stepdad Tom, we worked to capture the flavor of the real KCS railroad.

One of the key scenes is the big bridge over the Arkansas River [4, 7]. The bridge is still there to this day near Gans, Oklahoma. It's between Salisaw and Spiro, and it crosses in the middle of nowhere.

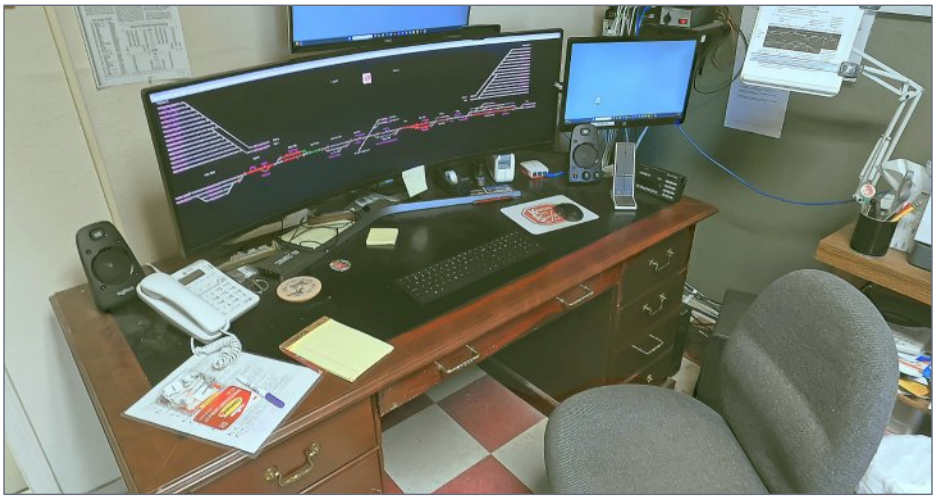
There is not a main road you can see it from. When I went to scout it out, I had to take my four wheel drive vehicle, and I needed to use it to get there.

It's hard to get to, and it's a single-track bridge that's high above the river. It's all steel girder bridges on very large concrete pylons.

My dad, an MMR, helped mastermind the construction of the model bridge. He came out four times a year, and got something started – then my homework would be to finish it. For that particular bridge (don't laugh), we made the main spans out of 2 x 2 wood. We laid the track right on that.

To make the piers, we noticed that the piers were all the same, but different amounts of them were showing. There was a fat part at the bottom, and then a narrower part, something like a telescope or layer cake type of thing.

My dad built an original basswood model of each of the tiers. Then we made rubber molds. We had one rubber mold for the biggest, and one for each of the other sizes. When dad left, my job was to make the resin castings by just pouring the stuff into the molds.



27. Steve's layout uses CTC enabled through JMRI. Here's the dispatcher's desk, the control nerve center when Steve holds operating sessions. We like his KCS mouse pad!

I made four or five sets of four pieces each, and glued them each together into single tiered piers. So we made this bridge completely from scratch.

Every bridge track I've ever seen on every model railroad has guard rails on it. The idea is if cars derail, they don't fall into the river. This bridge does not have that.

I argued with my dad about that. We had to drive back and take more pictures to double-check. Sure enough, no guard rails.

I bought bridge track because the ties are spaced much closer. But I pulled out the guard rails, and sanded the ties down to remove the inner tie plates. Then we added the side railing like you might put on a deck girder bridge, and we glued them to the end of the bridge ties. Then we bought a commercial railing and glued that to the side, and added a little walkway.

It has a finished look, but the core of the bridge itself is 2 x 2s.

28. The yard at Sallisaw manages the interchange with the Missouri Pacifc and cars to / from the various nearby industries. To the right out of view is the vast Arkansas River bridge.

Another bridge we did is on the track into the quarry – it looks like it's a big mainline truss bridge. It once was the mainline, and then they diverted the mainline, now it's just going into the quarry.

We started with a Central Valley kit, which has a straight truss top. But this prototype bridge has angled sections sections, so we had to cut, miter saw, and kitbash the girders. The real bridge has these metal bands on the bottom cord center sections instead of box girders.

Again we made a casting of a metal bands that my dad and I carved out of basswood. Then we cast about forty of them and put them on.

For a lot of the railroad stations, we got plans from Dr. Nick Muff, who is known for collecting plans to train stations, especially for the Kansas City Southern. We bought those from him and kitbashed them.

We bought the Walters NMRA office then put a different Spanish roof on it, and put some other things on it so that it would look like the prototype. We made the sizes and such to be correct with what Dr. Muff's drawings showed.

The station up at Salisaw was a project that my dad submitted for judging by the NMRA. Of course he did an interior in that one. Nobody can see it, but there's an interior inside the station.

If you want to follow me online, you can visit my website at: www.kcs1982.com .

*As mentioned earlier, **the bonus download extras** this month, Steve provides a walking tour of the new 2nd Sub expansion. It's all benchwork photos coupled with Steve's explanation of what will be at each location. Even though it's still benchwork, the tour does give you a better idea of how the new 2nd Sub fits into the space.* ☑

29. This is the extensive Waldron Furniture complex on the Waldron branch. Below you can see the south end staging of the 3rd Sub.

30. Moving the camera back from [29] to take in the full aisle, here's the south end staging on the 3rd Sub. The upper deck in the middle distance is the scene from [29].

31. This is OK Feed on the end of the Fort Smith branch. This branch has extensive industrial switching filling one side of the peninsula above the rural trackage between Poteau and Spiro.

32. It looks like local law authorites have caught up with someone hot rodding in town. Meanwhile, a KCS “ghost scheme” switcher works the north end of the yard at Sallisaw.

Building a starter 4x8 portable layout - Part 2

Model Railroad Hobbyist | January 2025

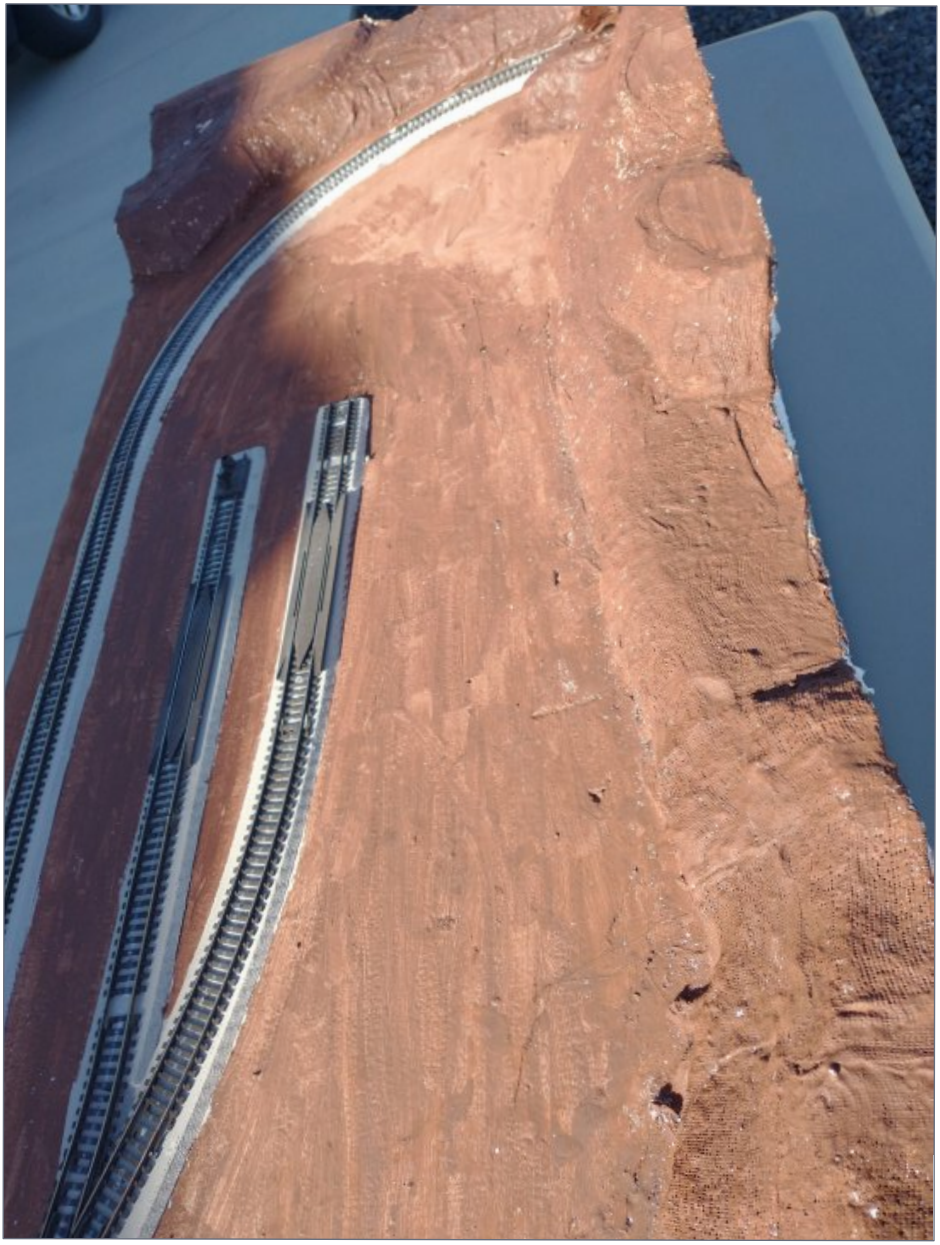
VIEW READER COMMENTS

Timothy F. Dudley builds the second half of his layout with donated materials ...

Last month, I shared the first half of my 4x8 portable layout project that began with friends' donations of brass Atlas tracks and switches, rolling stock, and materials. For ease of storage and transport in our RV, I designed the layout as two 2x8 module halves.

The rails for each half of the oval end three inches from the edge, with a six-inch section of rail planned to connect the two halves. The layout uses simple DC power.

1. Using the process described last month, I stacked and glued layers of foam, carved it into a landscape, and applied a coat of latex paint to seal it. I layered plaster cloth over the land forms to give them extra rigidity. I used old donated brass track on Woodland Scenics foam bed.



2. I applied a base coat red-brown acrylic paint to all the scenery areas.

3. I temporarily placed the structures for downtown, and planned the layout of the streets. I have begun adding rock castings, filtered dirt, and ground foam to the surrounding hills.

4. I placed a small freight shed and dock on the railroad spurs. In the background is a large pile of evergreens to be planted.

5. Plaster rock castings, filtered dirt, other scenery materials, and pine trees fill out the scene.

6. I've added streets and rearranged the structures.

7. More landscaping completes the west end.

8. Everything in the town is in its final place, and the ground scenicked. Adding vehicles and figures will complete the scene.

9. A long view of the completed 2x8 module from the south end.

10. A final shot of the town.

The two sections of the layout are 2x8 feet, and only 10 inches in height, so they would fit nicely into the storage compartment on our fifth-wheel RV. ☑

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 (newlife-hurricane.com), in Hurricane, Utah. He enjoys playing on the worship team, train watching, and writing. ■

This layout was used as a fundraiser for Shop with a Cop, where kids got to Shop with a Cop for Christmas. The layout raised $300 for that charity.

Savvy Modeler Online

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Simple methods to weather model railroad track

YouTuber **Andy Dorsch** demonstrates the process he uses to weather his track, step-by-step in this 20 minute video.

View reader comments

Andy uses a combination of airbrushing and brush painting to weather the ballast, ties, and rails. Andy suggests if you're not all that comfortable using your airbrush, weathering track is a great place to start and get comfortable with the airbrush before tackling your prize locomotive. Finally, Andy adds weeds and debris to anchor the track into the scenery. ☑

▶ GREAT MODELER VIDEOS ON THE WORLD WIDE WEB

JANUARY NEWS column

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

VIEW READER COMMENTS

CLUB CARS

The **Eastern Main Model Railroad Club** has three new 3-bay cylindrical hoppers available. Produced by Atlas, the HO scale models feature metal wheels. Road names are W.H. Shurtleff (4 numbers), Maine Marine Products (4 numbers), and Agway (6 numbers). Info: www.easternmainemodelrailroadclub.org/club-cars.html

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HO SCALE PRODUCT NEWS

New HO scale freight car kits coming from **Accurail** include this USRA twin-bay open hopper car decorated for National Tube Co. The model is based on a prototype built in February 1926.

THE LATEST MODEL RAILROAD PRODUCTS, NEWS & EVENTS

Also scheduled for release early this year is a 40′ wood refrigerator car decorated for the Green Bay Route of the Northern Refrigerator Car Co.

Accurail has announced an early 2025 release date for an HO scale kit for this 40′ CWP&S insulated plug door boxcar.

Completing the list of new Accurail economy priced HO scale kits coming soon is a 3-pack of 41′ Pittsburgh McKeesport & Youghiogheny (NYC) steel gondolas. All Accurail car kits come with appropriate trucks with Delrin wheelsets and Accumate knuckle couplers. Info: accurailinc.com

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VIEW READER COMMENTS


R. Bale

UNION PACIFIC BIG BOY

The UP's Big Boy is a simple articulated 4-8-8-4 steam locomotive built by the American Locomotive Company between 1941 and 1944. Scheduled to be named Wasatch, the locomotive acquired its nickname after an unknown worker scrawled Big Boy in chalk on the front of No. 4000, then under construction at Alco. The locomotives were designed with large grates to burn the low-quality bituminous coal from UP-owned mines in Wyoming. No. 4005 was converted to oil in 1946 and reverted to coal in 1948. The initial group of 20 locomotives was delivered in 1941, followed by five more in 1944. The Big Boys were designed to eliminate the need for double heading on the UP mainline climb eastward from Ogden into the Wasatch Range with the ability to pull long freight trains at a sustained speed of 60 mph once past mountain grades. They more than met the goal and remained in service until 1959. Peak horsepower of about 7,000hp was attained at 41 mph. Eight Big Boys survived as static display at museums across the USA. No. 4014 was re-acquired by Union Pacific, and between 2014 to 2019 it was rebuilt to operating condition for excursions and other publicity runs.

Athearn has scheduled another production run of its Union Pacific 4-8-8-4 Big Boy steam locomotive for an estimated arrival date of August 2026. This latest release includes some interesting variations on the basic UP locomotive.

Models numbered 4000 and 4020 represent original coal fired prototypes delivered in 1941 with cooling pipes. Locomotive No. 4003 with the same appliances will be available in Athearn's Primed for Grime paint scheme.

Big Boy No. 4019 will have

smoke lifters. No. 4024, decorated in a fantasy grey paint scheme, will also have smoke lifters along with a fuel tender refitted to handle oil.

Athearn's August 2026 production schedule includes 4-8-8-4 Big Boys decorated for Santa Fe, Ferrocarriles Nacionales de México and Southern Railway.

Special features on all road names of the HO scale Genesis 4-8-8-4 include illuminated number boards and headlights, illuminated directional back-up light in the tender, correctly operating eccentric cranks, a detailed backhead with printed gauges and current pick-up on all drivers and wheels. An improved loco-to-tender connection harness is promised. A minimum track radius of 22″ is recommended. Operating systems include basic DC and on-board DCC decoder with SoundTraxx Tsunami2 sound.

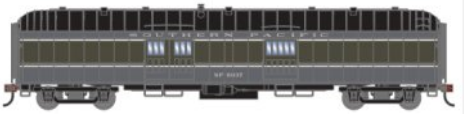
Athearn has included a Genesis series 50′ boxcar built by Pacific Car & Foundry with smooth sides in its August 2026 production schedule. Among the notable features on this 1960s-era car is a large 14′ plug door.

The Genesis series HO scale model will have separate wire grab irons, etched metal coupler platforms, uncoupling bars, trainline hoses and roller-bearing trucks with rotating bearing caps.

Road names available on this release will be Union Pacific, Southern Pacific, SSW-Cotton Belt and Golden West Service. Multiple road numbers will be available for each road name including Prime for Grime versions.

Class F98-F Genesis series 89′ 8″ TOFC flatcars decorated for Santa Fe and several XTTX Trailer Train schemes are coming from Athearn in August 2026. XTTX cars will have four hitches to accommodate different trailer lengths. Extra raised and collapsed hitches will be included to allow hobbyists to model any configuration. The cars will operate on a track radius of 22″, however, Athearn recommends 24″ for reliable operation.

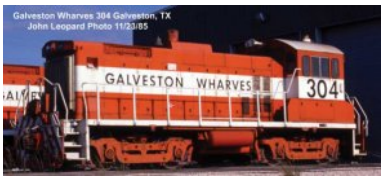
New tooling is underway at Athearn for a 60′ heavyweight steel baggage car with a Harriman-style roof. The HO scale model represents steel construction introduced in early 1900s.



Visible features include simulated rivets in the overlapping roof panels, Pintsch gas vents and piping, diaphragms and underbody details. Road names will be Union Pacific, Western Pacific and five Southern Pacific schemes.

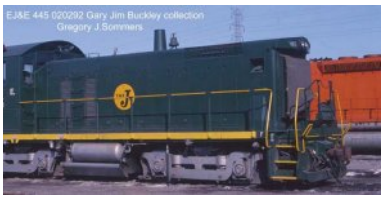
A classic wood-sheathed cupola caboose from the truss-rod era is coming from Athearn in late summer of 2026. In addition to Nickel Plate Road, decorating schemes will be available for Union Pacific, Chicago & North Western, Grand Trunk Western, Rock Island and Milwaukee Road.

Completing the list of new Athearn rolling stock scheduled for release in August 2026 is a basic 40′ steel boxcar with a seven-panel Superior sliding door. Road names will be Union Pacific, Elgin Joliet & Eastern, Texas & Pacific, Minneapolis & St. Louis Railway and Akron, Canton & Youngstown Railroad. All Athearn models mentioned in this report will come with McHenry knuckle couplers.
Info: www.athearn.com



Bowser has opened pre-orders for a ready-to-run HO scale SW1001 locomotive. Road names and paint schemes in this run are ARMCO, Chicago Short Line, Conrail (Can Opener scheme), Conrail (Philly Division), Corinth & Counce, CSX, EJ&E, Galveston Wharves, Long Island RR, Newburgh & South Shore, Newburgh & South Shore Bicentennial, Norfolk Southern, Reading, and Union RR.

The models will include LED lighting with a front and rear headlight, inspection lights, number boards, class lights, beacons, ditch lights, and a cab light. Separate details on the models include coupler cut levers, MU hoses, air hoses, windshield wipers, lift rings, and wire grab irons. Cab details include cab windows, cab interior, and control stand gauges.



The model has all-wheel drive, all-wheel electrical pickup, RP25 contour wheels, and knuckle couplers. The models will be available with a LokSound V5 decoder or in a 21 pin socket DCC ready version. Minimum recommended radius is 18″. Preorders close March 28, 2025, for an expected delivery in early 2026.

Bowser has immediate availability on a group of HO scale 40′ steel boxcars with Youngstown sliding doors. Details include running boards, full height ladders, knuckle couplers and appropriate trucks with metal wheels. Three numbers each are available for cars decorated for New York Central Pacemaker, Pittsburgh

& Lake Erie, Southern Pacific, Western Railway of Alabama and Lehigh New England.

In addition to standard latitudinals at the right hand corners of the roof, cars decorated for Northern Pacific and Southern Railway also have eight round loading hatches.

Info: bowser-trains.com

Although still targeted for delivery in 2025, **Broadway Limited's** HO scale four-truck Shay may be delayed as the tooling is being modified to permit 18″ radius curves. For full details on this new project see the April 2024 issue of *MRH.*

BLI's HO version of UP's Kenefick heritage fleet business car (See the May 2024 issue of MRH for full details) has been delayed while the factory searches for yellow and gray paint that matches WalthersProto series passenger cars.

New models scheduled for release from Broadway Limited late this month include AT&SF, B&M and SP 2-8-4 Berkshire steam locomotives. See the August issue of MRH for details on BLI's HO scale Berkshire project.
Info: www.broadway-limited.com

Home Shops has InterMountain autoracks in stock decorated for both Jim Hediger's Ohio Southern and Allen McClelland's Virginian &

Ohio. The bi-level enclosed autoracks feature etched metal see-through side panels, opening end doors, 33″ InterMountain metal wheelsets, and metal knuckle couplers.

The Virginian & Ohio cars come in two schemes with large lettering or smaller lettering on the sides. Both the racks and the cars are lettered for V&O. The Ohio Southern cars feature racks lettered for Ohio Southern with the cars lettered in the TTGX series of TTX flatcars.
Info: homeshops.net

Intermountain is booking reservations for an HO scale version of a GE Tier 4 GEVO locomotive in several unique paint schemes. The opportunity to place a reservation ends on January 31, 2025. The delivery date is TBA.

The HO scale locomotive will be available in four numbers each for Navajo Mine Railroad, Kansas City Southern and seven Canadian National heritage schemes.

The list of special features begins with correctly sized front ditch lights, illuminated number boards, a rear headlight, front and rear walkway lights, and front and rear red DPU lights on CN units. Additional details include animated bearing caps, GE traction motor detail on third and fourth axles, dark cab side window tint and etched metal grilles on the radiator. A minimum 24″ track radius is recommended.

DCC non-sound locomotives will come with ESU LokPilot5 DCC decoders. Sound

locomotives will be factory equipped with ESU LokSound5 DCC sound decoders featuring recorded Tier 4 GEVO sounds played through dual sugar-cube type speakers. DC versions of InterMountain's Tier 4 GEVO are non-sound only.

InterMountain is also accepting reservations until January 31st for two versions of a 50′ Gunderson Hi-Cube boxcar with modern steel ends.

Cars with single plug doors will be available in six numbers for GATX Leasing, Canadian National, Canadian America, and Southern Railway of British Columbia.

Road names for Gunderson cars with double plug doors will include BNSF, Minnesota Dakota & Western, Union Pacific and Apache Railway.

Info: www.intermountain-railway.com

Kadee's latest ready-to-run model is a twin-bay coal hopper decorated for Milwaukee Road. The HO scale model accurately represents a prototype from the late 1940s era. The model comes with Bettendorf-type plain-bearing trucks with metal wheels, Kadee couplers and a removable load of coal.

Info: www.kadee.com


R. Bale

ACF 50′ High-Cube Double-Door Boxcars

ACF Industries started producing this general type of high-cube exterior-post car in 1971. The design was developed further in 1973 and 1975. This version has uneven sized waffles to strengthen side walls with thinner material. We believe this car design was tailored to Weyerhaeuser for paperboard, the raw material used in the making of cardboard boxes. The high-cube height was important to accommodate various sizes of paper rolls. The Plate clearance for these cars pre-dates the Plate F introduction so they were marked with Exceeds Plate C. Nick Molo. ▪

Moloco Trains has released a new production run of prototypically accurate HO scale ACF 50′ Hi-Cube boxcars with double 8′ Youngstown plug doors.

Road names on this release include MP (C&EI 3-73), TO&E (4-740, Frisco (8-74), BN (11-81 repaint) and BN (12-83 repaint).

In addition to the uniquely tall plug doors, details include Stanray T3-3-3 ends, ACF draft gear, rubber air hoses, metal corner stirrups, 70-ton trucks with metal wheels and Kadee Whisker couplers.
Info: www.molocotrains.com

Piko-America has released three new versions of its HO scale Krauss-Maffei diesel locomotives. The latest variants of the prototype, numbered 9100, 9101 and 9102, replicates each of the three locomotives in their mid-1960s

weathered and battle-scarred appearance. Exterior changes from the original release include modified side air intake louvers and upper intake shutters, different filter boxes and rooftop vents, the addition of a roof-mounted EMD air reservoir and an EMD-style pilot snowplow.

In addition to pre-weathered paint, decorating changes include different SP wing patterns on the nose, minor paint patches and revised road number stenciling.
Info: www.piko-america.com

R. Bale

SANTA FE CF7 LOCOMOTIVE

ATSF's aging fleet of F7s were approaching retirement age in 1970. To meet an urgent need for four-wheel road switchers, Santa Fe rebuilt the F7s into switchers by replacing the streamlined car body with a modified cab and general purpose body. Named CF7, a total of 233 conversions were performed between 1970 and 1978 at ATSF's shops in Cleburne TX. Santa Fe made good use of the CF7s for a decade before selling them off to various short lines. ▪

Rapido is developing an HO scale version of a CF7; a road switcher created in a major 1970s rebuilding program ATSF performed on many of its aging F7As.

Road names planned for the initial release include Santa Fe (Three schemes including one unlettered), Amtrak (Two schemes), LA Junction, Washington Central Railroad, and Maryland & Pennsylvania Railroad. Unlettered units with yellow and orange bodies will also be available.

Road specific details include five different cab variations, two hoods, and both open and closed sills. Additional features include full underbody details, etched grilles and steps, Cannon 36″ cap top radiator fans, separate metal grab irons, multi-color interior, illuminated control stand gauges, working headlights, ground lights , number boards, and beacons. Rapido's CF7s will have four-wheel Bloomberg B trucks and MoPower uninterrupted power system. Preliminary samples are expected this spring with a production release date of this year or early in 2026.

R. Bale

EMD DUAL CONTROL GP38

In the late 1960s, The Pennsylvania-Reading Seashore Lines (PRSL), which was jointly owned by the Pennsylvania and Reading Railroads, needed modern power to replace their aging fleet of 1950s-era Baldwin diesels. EMD provided the solution in the form of the then all-new GP38. While mechanically a standard GP38, the PRSL fleet featured a distinctive cab design due to the PRSL's requirement for dual control stands. This feature pushed the cab front windows out over the nose which created a distinctive look. While not a true extended cab, it visually created that look. The reason behind PRSL's need to order a customized GP38 with dual-control stands was simple: they lacked turning facilities on their system. *Rapido*. ▪

Rapido plans to deliver a PRSL dual control version of an EMD GP38 this spring. The HO scale model is being produced from all-new tooling. There were two control stand variations on the

15 prototype PRSL GP38s built, plus a third style with the long hood forward control stand removed. Rapido will offer all three.

On the PRSL units, the front windows of the standard GP38 cab were pushed out front to make room for the dual controls. The detailed computer rendering of the cab interior shows the double control stand variation. Note the fireman's jump seat in the middle.

Road names available on this release will be Bangor & Aroostook, Eureka & Southern, Conrail, and two BNSF schemes.

Notable features on Rapido's new PRSL GP38 include Cannon radiator fans, wire grab irons and handrails, etched steps, multiple dynamic-brake hatches, operating headlights, rear lights, white class lights, ditch lights and beacons, extensive underframe detail including traction motor cables, air filters, numerous separately applied parts, and MoPower uninterrupted power supply system.


R. Bale

EMD GP39 DIESEL LOCOMOTIVE

The GP39 was unique in that it featured a 12-cylinder, turbocharged 645E3 prime mover — 4 cylinders fewer than the GP38. The intent was to build a similar locomotive with slightly more horsepower (2,300hp) and have better fuel efficiency. This was not the case as the GP39 saw higher maintenance costs for the turbocharger, whereas the GP38 model featured a more efficient Roots-supercharged 645 prime mover. These factors led to the GP39 model seeing only 23 units built with the Chesapeake & Ohio, ordering 20 locomotives. During the mid-1980s, Chessie began to mate select GP39s with switcher mates (SWMT), which were GP7 and GP9s chopped down and turned into slugs. *Rapido* . ▪

Rapido expects to start cutting production tooling for an HO scale version of EMD GP39, including slugs, early this year. The development team is currently fine tuning computer generated renders for the project. Both the slugs and their mother units will be powered.

Prototypically accurate decorating schemes will be available for C&O, C&O Chessie System, and CSX. Two unlettered generic SWMT Slugs will also be available for freelancers.

Additional details include Cannon radiator fans, road-specific battery box doors, etched steps, wire grab irons and handrails, multiple styles of stepwells, dynamic-brake hatches and air filters, cab interior, operating headlights, rear lights, white class lights, ditch lights and beacons, MoPower uninterrupted power system and Rapido's usual attention to underframe detail.

Rapido's CF7, GP38 PRSL, and GP39 with slugs mentioned in this report will be available for DCC operation with an ESU LokSound decoder. Silent DC models will also be available with a 21-pin connector for adding an aftermarket decoder.


R. Bale

CANADIAN FLYER BALLOON TOP COACHES

Built in 1937 by Canadian Car & Foundry, the Balloon Top coaches offered top-of-the-line comfort. Features included Heywood-Wakefield seats with foam cushions and individual reading lamps, steam heating and ice-activated air conditioning. The cars were delivered with sash windows, but these proved troublesome and were soon replaced by sealed Adlake windows. The cars ran on six-wheel Commonwealth trucks, originally with either plain-bearing journals or Timken roller bearings. All were soon converted to roller bearings. The Canadian Flyer nickname emerged after similar-looking New Haven Osgood Bradley coaches were referred to as *American Flyers in More Classic Trains,* Arthur Dubin's influential 1974 book. *Rapido* . ▪

Rapido is developing an HO scale version of the Canadian Car & Foundry Balloon Top coach. This is the first time the CC&F car has been produced in any scale.

Scaled from a 3D scan of an actual car plus access to factory blueprints, Rapido's HO scale model closely replicates the prototype. A welcome feature is a magnetic wand that controls interior track powered lighting with an uninterruptable capacitor system that eliminates the annoyance of flickering lights.

Additional features include a multi-colored interior with separate seats and see-through arm rests, extensive underbody detail, flush mounted windows with printed window blinds, sprung diaphragms with etched-metal end gates, separately

applied handrails and wire grab irons; and full underbody detail. Like the prototype, the HO scale model rides on six-wheel Commonwealth roller-bearing trucks that include truck-mounted generator detail. A minimum track radius of 22″ is suggested.

Decorating schemes scheduled for the initial release include CNR (Green), CNR (1954 scheme), CNR (Wet Noodle), Delaware & Hudson, VIA-CN, and VIA Rail Canada. Conditional schemes dependent upon receipt of sufficient orders to justify post-production paint masks and printing include Cape Cod Central, CN (Engineering silver), CN (Blue and yellow), Tuscan (unlettered), and Green (unlettered). The order deadline is April 15, 2025.

Tooling is underway at Rapido for Metro-North and Long Island Railroad M3 and M3A commuter cars. The HO scale models are based on prototypes built by Budd beginning in 1984.

The M3 and M3A cars were an upgrade from the original M1 and M1A cars built a decade earlier. With the exception of modernized GSI 70 trucks, the exterior of the upgraded M3 and M3A cars was nearly identical to their predecessors.

The authentic layout of the car's interior includes lighting and multi-colored seats. The underbody detailing hides Rapido's underfloor drive system.

The HO scale models will be available in multiple car numbers decorated for Long Island Railroad (LIRR/MTA/M3 as delivered with blue body band), LIRR (LIRR/MTA/M3 with yellow end band), Metro-North (MTA/M3A blue body band) and Metro-North (MRA/M3A with blue body band and stripped ends)

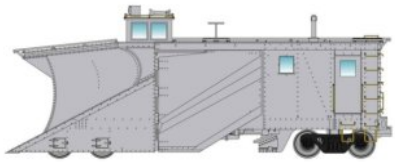
The model will be available in two-car sets featuring a unique close coupling system. A minimum track radius of 22″ is suggested. DC silent or DC/DCC sound options will be available. The order deadline is TBA.

All images in this report are courtesy of Rapido Trains.
Info: www.rapidotrains.com

A SIECO (Southern Iron & Equipment Co.) 50′ pulpwood flatcar with bulkheads and a V shaped deck are coming from **Walthers** during the winter of 2025. Details on the Proto series model include separately applied ladders and grab irons. Road names include Southern Railway, CSXT, Norfolk Southern, Georgia Railroad, RF&P, and Illinois Central Gulf.

A Proto series 86′ Hi-Cube boxcar with double plug doors is also scheduled for release during the winter months. Walthers HO scale model is based on an auto parts car built by Pullman

Standard in the mid-1960s. Road names include SSW Cotton Belt, Santa Fe, Norfolk & Western, Chesapeake & Ohio, Penn Central, Detroit Toledo & Ironton, Louisville & Nashville, and Western Pacific.



Every railroad division has at least one Russell snowplow on standby during the winter. Walthers HO scale Proto model of the iconic plow features a special front truck to handle curves. An unlettered gray MOW version will be available to work as is or be lettered for any railroad. Fully decorated plows will be available for Chicago Great Western, Ann arbor, Chesapeake & Ohio, Green Mountain, Jaws, New Haven, Minneapolis & St. Louis, and New York, Susquehanna & Western.

This 40′ ACF welded boxcar with sliding doors is the final item coming from Walthers during the winter of 2025. In addition to the 8′ Youngstown doors details include an Apex running board, full height ladders, a Stanray diagonal panel roof, and 4/4 Improved Dreadnaught ends.

Road names will be Bangor & Aroostook, Norfolk & Western, Central Railroad of New Jersey, Reading, Western Pacific, Louisville & Nashville, and Detroit, Toledo & Ironton.

New Walthers Mainline models scheduled for release during the spring of 2025 include this 50′ PC&F RBL insulated boxcar. The HO scale model is based on a prototype built in the 1960s with high ladders and Apex running boards. Additional details

include 9′ Youngstown sliding doors, Dreadnaught ends, and a Stanray diagonal panel roof. The model will come with 70-ton roller-bearing trucks. In addition to Santa Fe, road names will include Mountain Pine Lumber, Burlington Northern, Soo Line, Chesapeake & Ohio, Frisco, and Union Pacific.

Walthers is creating all-new tooling for this 50′ ACF 5250 cu. ft. Centerflow quadruple-bay covered hopper. Due next spring, the Mainline series model will be available with a choice of roof hatches. Cars with round loading hatches will be available decorated for ACFX-El Rexene Plastics, Rock Island, SCPX-Shell Chemical, and gray lettered with data only.

Cars decorated for Baltimore & Ohio, Archer Daniels Midland, and Denver & Rio Grande Western will come with trough-style loading hatches.

This month's list of Walthers new products ends with a 30' caboose based on a prototype design used by the Grand Trunk Western Railroad. The Proto series model features a wood-sheathed body on a steel underframe. Additional features include interior detail, and arch bar trucks with leaf springs. Scheduled for release this coming spring, road names will be Denver & Rio Grande Western, Burlington Northern, Canadian National, Western Pacific, and two Great Trunk Western schemes.

All Walthers models mentioned in this report come with Proto MAX knuckle couplers.
Info: www.walthers.com

N SCALE PRODUCT NEWS

Athearn has scheduled another production run of its Union Pacific 4-8-8-4 Big Boy steam locomotive with an estimated arrival date of August 2026. This latest N scale release includes some interesting variations on the basic UP version.

Models numbered 4000 and 4020 represent original coal fired prototypes delivered in 1941 with cooling pipes. Locomotive No. 4003 with the same appliances will be available in Athearn's Primed-for-Grime paint scheme.

Big Boy No. 4019 will have smoke lifters. No. 4024, decorated in a fantasy grey paint scheme, will also have smoke lifters along with an oil tender.

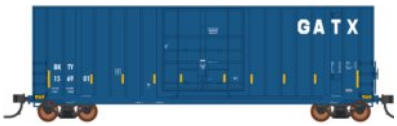
Athearn's August 2026 production schedule includes 4-8-8-4 Big Boys decorated for Santa Fe, Ferrocarriles Nacionales de México, and Southern Railway.

Special features on all road names of the N scale Genesis 4-8-8-4 include illuminated headlight and directional back-up light in the tender, correctly operating eccentric cranks, a detailed backhead with printed gauge, and current pick-up on all drivers and wheels. An improved loco-to-tender connection harness is promised. A minimum track radius of 11″ is recommended. Operating systems include basic DC and on-board DCC decoder with SoundTraxx Tsunami2 sound.

Class F98-F Genesis series 89′ 8″ TOFC flatcars decorated for Santa Fe and several XTTX Trailer Train schemes are coming from Athearn in August 2026. XTTX cars will have four hitches to accommodate different trailer lengths. Extra raised and collapsed hitches will be included to allow

hobbyists to model any configuration. The cars will operate on a track radius of 22″, however, Athearn recommends 24″ for reliable operation. All models mentioned in this Athearn report come with McHenry knuckle couplers.
Info: www.athearn.com

Broadway Limited expects to ship new N scale EMD's F3 and F7 diesel to dealers late this month. For details about the models in this release see the April 2023 issue of *MRH.*
Info: www.broadway-limited.com



InterMountain is accepting reservations until January 31st for two N scale versions of a 50′ Gunderson Hi-Cube boxcar with modern steel ends.

Cars with single plug doors will be available in six numbers for GATX Leasing, Canadian National, Canadian American, and Southern Railway of British Columbia.

Road names for Gunderson cars with double plug doors will include BNSF, Minnesota Dakota & Western, Union Pacific, and Apache Railway.
Info: www.intermountain-railway.com


R. Bale

GENESIS P42 LOCOMOTIVE

The Genesis P42 is a passenger diesel locomotive produced between 1992 and 2001 by GE Transportation. A total of 321 units were built for Amtrak, Metro-North, and VIA Rail. The Genesis series were the lowest North American diesel locomotives until the introduction of the Siemens Charger. This height restriction allows the locomotive to travel through low profile tunnels in the Northeast Corridor. The GE Genesis series is unique among North American passenger locomotives in that it uses a single, monocoque body making it lighter, more aerodynamic, and more fuel efficient than its predecessors. However, monocoque construction is more costly and time-consuming to maintain and repair. In 2004, Amtrak started installing bolt-on nose cones on its units for easy replacement in the event of a grade crossing collision. The P42 is a fully computerized locomotive which automatically controls all on-board functions. The trucks of Genesis locomotives were made in Germany by Krupp Verkehrstechnik, which has since been absorbed by Siemens. Trucks on the newest Genesis locomotives carry the Siemens name. ▪

KatoUSA has scheduled another production run of its N scale GE P42 Genesis locomotive for release during this coming summer. The models will offer directional headlights, preprinted number boards, five-pole motor with dual brass flywheels, and Kato magnetic knuckle couplers. They will be available in DCC and DCC with sound.

Decorating schemes announced for this release will be Amtrak Phase VII and VIA Rail.
Info: www.katousa.com

New from **Micro-Trains Line** is an N scale Norfolk Southern 61′ bulkhead flat car. Representing an ex-Southern Railroad car built in 1965, the car was used in pulpwood service and features upright bunks along the sides. It is available in two road numbers.

Also available in two road numbers is a 39′ single dome 8000-gallon insulated tank car. Designed for Shippers Car Line (SHPX), the car featured a welded dome known as Duradome. The car is available in both red and black.

A slightly larger 39′ tank car, this Western Pacific car featured a 10,044-gallon capacity.

Also new for January 2025 is a 50′ Plate C rib-side boxcar. Built by Greenbrier in July 1998, the car included rectangular vent covers on the sides of the car. Used in wood pulp service, the vents allowed moisture to escape, preventing rust and product damage.
Info: Visit your Micro-Trains Line dealer

Rail Smith has released six new versions of an N scale 10-3-2 Pullman sleeper as built with fluted sides by Pullman Standard in 1947-48.

Named sleepers decorated for the Denver & Rio Grande Western include *Glenwood Springs and Colorado Springs.*

Two fluted Santa Fe streamliners have just been shipped to those who preordered. The prototype

versions of the sleepers, *Blue Grass* and *Blue Moon,* were usually assigned to the Texas Chief and the Grand Canyon Ltd.

This release includes a pair of lightweight sleepers with fluted sides decorated for the Texas Special. The named sleepers, *Thomas Hart Benson* and *Amon B. King,* were assigned to the famous Texas Special jointly operated by MKT and Frisco.

Budd Dome coaches scheduled for 2025 include Great Northern #1320 and Burlington Northern #555, both in the Cascade Green "Hockey Stick" scheme, and Missouri Pacific, suitable for both the MP's Eagle trains and the Rainbow Era. The dome coach will be available in Amtrak Phase I as well.
Info: www.lowellsmith.net

STRUCTURES & SCENIC SUPPLIES

R. Bale

Fruehauf 45′ Z-Van

The Z-van was originally available in a 40′ length with the 45' variant added later. Many of the early 40′ trailers were subsequently extended to 45′. Refrigeration equipment was available, as well as different landing gear and door rod configurations. Construction began with the ribbed-side versions, then proceeded to beaded-side construction, with the smooth-side version representing the most modern construction method. ▪

Athearn has scheduled an August 2026 release date for both HO and N scale versions of Fruehauf 45′ smooth-side Z-vans. The models will have rubber tires and separately applied mud flaps. Decorating schemes include BNSF, Union Pacific, Kansas City Southern, Illinois Central, Seaboard System, Norfolk & Western, Milwaukee Road, and Minnesota Dakota & Western.

R. Bale

JINDO CONTAINERS

Jindo containers, which are about 18 percent lighter than all-steel containers, were developed by the Jindo Corporation of South Korea. Special high-strength steel and Scandinavian laminated spruce softwood are used to manufacture the containers. The Jindo lightweight containers meet all of the specifications of the International Standards Organization. ▪

Also due from Athearn in late summer of next year is a group of HO scale 53′ intermodal chassis paired with 53′ Jindo containers. Features on the flat chassis include rubber tires and landing gear.

Decorating schemes for the combined chassis and container will be Pacer Stack Train with an EMP container, BNSF chassis with a Trailer Bridge container, Union Pacific with a COFC container, CSX with a UMXU container, JB Hunt with a Triple Crown Container and a Seacastle chassis with an R+L container.

Athearn's HO scale stackable Jindo containers will also be available in 3-packs without the chassis.
Info: www.athearn.com

Berkshire Valley Models has released a laser-cut wood kit for a two-story house suitable for a farm scene or in town. This former HO scale AMB LASERkit builds into a typical semi-rural house with an attached lean-to kitchen in the rear and a delicate front porch with laser-cut trim and steps. Components include clapboard siding, peel & stick layered windows and a tin roof. Assembly and painting are required.
Info: www.berkshirevalleymodels.com

New from **Frenchman River Model Works** is an HO scale Brick Fire House. Designed to look appropriate for any era from the 1890s to current times, the two-story single stall firehouse includes a hose drying tower that can be placed on either side of the firehouse. Constructed primarily of resin castings, the model measures approximately 2.35″ x 4.15″ x 3.75″ with the hose tower measuring approximately 0.5″ x 0.5″ x 4″.
Info: frenchmanriver.com

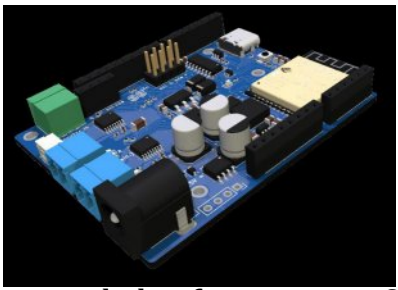
Inter-Action Hobbies has announced a new HO scale kit, the Shed Pack Kit (2 sheds). Featuring laser cut and engraved resin impregnated board and basswood clapboard walls, the two kits also include clear window glazing, building foundations,

and numerous 3D-printed resin details. Shed #1 measures 2″ x 2.2″ x 1.7″ and Shed #2 measures 2.3″ x 1.7″ x 1.6″.
Info: www.interactionhobbies.com

New HO scale vehicles available from **Oxford Diecast USA** include a 1950 Chevrolet panel truck decorated for Railway Express Agency and a bright red 1958 Chevy Impala hardtop coupe.

Studebaker's 1950 Starlight coupe with wrap-around rear window and bullet nose was designed by Raymond Loewy. Oxford has also released an HO scale 1956 Lincoln Continental Mark II in dark red.
Info: www.walthers.com

ELECTRONICS



A ready-to-run version of the **DCC-EX** command station, named the EX-CommandStation/Booster One Express (EX-CSB1), is now available for purchase. The EX-CSB1 is equipped with dual DCC/PWM DC outputs with up to 5 amps capacity and can be expanded to four outputs. 802.11n Wi-Fi is built-in for connecting up to 10 Wi-Fi throttles. JMRI can be connected to the EX-CSB1 via either Wi-Fi or the included USB-C connector.
Info: dcc-ex.com

From **Model Train Technology** comes the Speed Stick, a portable speed measuring device for use with Z scale to G gauge. Equipped with a 500mAh rechargeable lithium battery, the Speed Stick can be powered or recharged with a USB-C cable plugged into a standard 5V phone charger. Using MTT's Precision Detector technology, the Speed Stick will work anywhere from outdoors to a completely dark room. The maximum range of the Speed Stick is 5.5'' (150mm) from the device to the train being measured. Speeds can be displayed in MPH or KPH and it can also measure the time taken to travel around a loop of track and several other things.
Video: www.youtube.com/watch?v=5JaKpI5KyNo
Info: www.modeltraintechnology.com

Ring Engineering has announced the RailPro LM-3S-21 locomotive module, a sound-equipped receiver/decoder for use with the RailPro wireless control system. Including 12 light outputs, the LM-3S-21 is the size of a standard NMRA 21-pin DCC decoder and plugs directly into the 21-pin socket that many current locomotive models are equipped with. The LM-3S-21 is designed to work with the RailPro PBM-2 power backup stay-alive.
Info: www.ringengineering.com

BRIEFLY NOTED AT PRESS TIME ...

After several years of searching, the **Augusta County Railroad Museum** of Waynesboro, VA has found a new home at 413 W. Main Street. Museum officials plan to utilize the 5,000 square feet of space for model trains, a mini-theater, railroad artwork, and an exhibit area for railroad artifacts. Info at : www.acrrm.org ...

To promote model railroading as a hobby the **Nashua Valley Railroad Association** has implemented a program named "Trains for Tots' in which the association purchases and donates small wood starter train sets to needy children during the holidays. Individuals or organizations interested in participating or establishing their own program may contact Peter D'Olimpio at Peterdoimpio@comcast.net ...

New **Rapido** items expected to be released in the next few weeks include the B-70-69 boxcars, F30 flatcar and Turbo Train ... ■

SELECTED EVENTS

JANUARY

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

Ongoing 2025

ONLINE, Zoom, dates vary, see website. Operation Special Interest Group Meetups – limited attendance available.
Info: www.opsig.org/Virtual/
Archive: www.youtube.com/c/OperationsSIG

ONLINE, Zoom & YouTube, Wednesday & Saturday, see Facebook page. "New Tracks" Meetup, hosted by Jim Kellow, MMR.
Info: newtracksmodeling.com
YouTube: www.youtube.com/channel/UCMA_VhPb5pjdkAYTdXLceJA

ONLINE, Facebook & YouTube, dates vary, see Facebook page. "NMRAx" organized by Gordy Robinson, Martyn Jenkins, Speed Muller, Jordan Kramer.
Info: www.facebook.com/groups/nmragroup

ONLINE, YouTube, every other Saturday. 4th Division, Pacific Northwest Region, NMRA hosts online layout tours and clinics.
Archive: www.youtube.com/c/4DPNRMovies

ONLINE, YouTube, March 17-20, 2025. NMRA Northeastern Region NERx annual virtual convention. www.youtube.com/c/NMRAORGModelRailroading
Info: nerx.org

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

AROUND THE USA, IN-PERSON, Various dates. ScaleTrains.com Road Trip.
Info: www.scaletrains.com/roadtrip

January – February 2025

CALIFORNIA, SACRAMENTO, January 31 – February 2, 2025. Pacific Coast Region Layout Design & Operations Weekend. California State Railroad Museum, 125 I St.
Info: bayldops.com/2025/index.html

COLORADO, COLORADO SPRINGS, February 22-23, 2025. The Train Expo Colorado (TECO). Colorado Springs Event Center, Hall B, 3970 Palmer Park Blvd.
Info: tecoshow.org

FLORIDA, BROOKSVILLE, January 26, 2025. Regal Railways Presents Model Train Show & Sale. Hernando County Fairgrounds, 6436 Broad Street.
Info: regalrailways.com

ILLINOIS, CALLEDONIA, February 2, 2025. Rock River Valley Division Monthly Meeting/Clinics. Paulsons Agricultural Museum, 6950 Belvedere Rd.
Info: rrvd-nmra.org

INDIANA, LEBANON, January 26, 2025. Central Indiana Division Lebanon Train Show. 1300 E 100 S.
Info: www.cidnmra.org

MASSACHUSSETS, WEST SPRINGFIELD, January 25-26, 2025. 2025 Railroad Hobby Show, sponsored by the Amherst Railway Society. The Eastern States Exposition Fairgrounds, 1305 Memorial Avenue.
Info: www.railroadhobbyshow.com

MICHIGAN, BRIGHTON, January 25, 2025. 4th Annual Model Railroad Sale, hosted by Division 6, North Central Region, NMRA. 2142 Community Center, 7526 Grand River Ave.
Info: www.div6-ncr-nmra.com/division-6-jan-2025-sale.html

OHIO, CANFIELD, February 15, 2025. Canfield Train & Toy Show. Michael Kusalaba fund of the Youngstown Foundation, Event Center, Canfield Fairgrounds, Gate 9 St Rte 46.
Info: www.facebook.com/canfieldtoyandtrainshow

OREGON, EUGENE, February 15-16, 2025. 36th Annual Model Railroad Swap Meet & Train Show, sponsored by Willamette Cascade Model Railroad Club. Lane Event Center, 796 West 13th Avenue.
Info: www.facebook.com/events/1014615623750734

SOUTH CAROLINA, COLUMBIA, January 18, 2025. Columbia, South Carolina Model Train Show. Jamil Temple, 206 Jamil Rd.
Info: www.carolinatrainshows.com/#

TEXAS, PASADENA (Houston), February 15, 2025. Greater Houston Train Show, presented by the San Jacinto Model Railroad Club. Pasadena Convention Center, 7902 Fairmont Parkway.
Info: sanjacmodeltrains.org

TEXAS, PLANO, January 18-19, 2025. Winter Plano Train Show, sponsored by the North Texas Council of Railroad Clubs, Plano Event Center, 2000 E. Spring Creek Parkway.
Info: www.dfwtrainshows.com

UTAH, OGDEN, February 28, March 1-2, 2025. The Hostlers Model Railroad 2025 Festival. Ogden Union Station, Historic 25th Street & Wall Avenue.
Info: www.hostlers.info

VIRGINIA, CLIFTON FORGE, February 22-23, 2025. 2025 George Washington Train Show, sponsored by the Chesapeake & Ohio Historical Society. C&O Railway Heritage Center, 701 Main Street and Clifton Forge Armory, 724 Commercial Ave.
Info: www.facebook.com/events/592870870059396

WASHINGTON, PUYALLUP, January 18-19, 2025. Great Train Show. Washington State Events Center, 110 9th Ave SW. Park and enter at Blue Gate.
Info: www.trainshow.com

WISCONSIN, MADISON, February 15-16, 2025. 57th annual Mad City Railroad Show, Exhibition Hall, Alliant Energy Center.
Info: www.nmra-scwd.org

Future 2025 by location

CANADA, ONTARIO, BURLINGTON, October 17-19, 2025. Real Rails 2025 Convention, sponsored by the Canadian Pacific Historical Association. Holiday Inn and Candle Wood Suites, 3060 South Service Road.
Info: www.cptracks.ca/realrails2025.html

CANADA, ONTARIO, HAMILTON, April 25, 2025. Steel Town RPM, sponsored by the HO Model Engineers Society. Eva Rothwell Centre, 460 Wentworth St N.
Info: steeltownrpm.wordpress.com

CANADA, ONTARIO, PRESCOTT, April 12, 2025. 2nd Annual Prescott Model Train Show sponsored by the Prescott Model Railway Group. Leo Boivin Community Centre, 444 Prince Street.
Info: www.facebook.com/PrescottRailroadModelClub

NEW ZEALAND, MOSGIEL, May 3-4, 2025. Dunedin Model Train Show. Taieri Bowling Club, 12 Wickliffe Street.
Info: dunedinmodeltrainshow@gmail.com

ALABAMA, MOBILE, March 8, 2025. Southwest Alabama Railroad Modelers (SWARM) Model Train Show. Mobile Via Health, Fitness and Enrichment Center, Arlene F. Mitchell Campus, 1717 Dauphin Street.
Info: gasamuel@aol.com

(HYBRID)CALIFORNIA, SAN LUIS OBISPO, March 27-30, 2025. Daylight Limited – Pacific Coast Region Convention. Embassy Suites by Hilton San Luis Obispo, 333 Madonna Road.
Info: pcr2025.org

GEORGIA, MACON, March 28-29, 2025. Central Georgia RPM. Lundy Chapel Church, 2081 Forest Hill Rd.
Info: www.centralgarpm.com

ILLINOIS, CALLEDONIA, February 2, March 2, April 2, May 4, 2025. Rock River Valley Division Monthly Meeting/Clinics. Paulsons Agricultural Museum, 6950 Belvedere Rd.
Info: rrvd-nmra.org

ILLINOIS, MACHESNEY PARK, March 29-30, 2025. 2025 Rock River Valley Train Show, sponsored by the Rock River Valley Division. Harlem High School, 9229 Alpine Rd.
Info: www.rrvd-nmra.com/show.php

INDIANA, NAPPANEE, March 15, 2025. 20th Annual Elkhart Model Railroad Club Train Show. Claywood Event Center, 13924 N 1100 W (County Line Road).
Info: www.emrrc.com

MAINE, TOPSHAM, April 26, 2025. 2025 Great Falls Model Railroad Club Tain Show. Mt. Ararat High School, 68 Eagles Way.
Info: www.greatfallsmodelrrclub.org/events/event/2024-gfm-rrc-train-show

MINNESOTA, PLYMOUTH, March 14-15, 2025. 8th Annual Twin Cities Division, NMRA Modelers Retreat. Mount Olivet Lutheran Church, 12235 Old Rockford Rd.
Info: tcdnmra.org/modelers-retreat

NEW HAMPSHIRE, NORTH SUTTON, April 13, 2025. 8th Dartmouth/Lake Sunapee Region Model Railroad Show. Kearsage Regional Middle School, 32 Gile Pond Rd.
Info: cvrr.railfan.net/cvmrr

NEW YORK, ROCHESTER, March 1-2, 2025. Rochester Model Club Annual Open House and Equipment Sale. 150 South Clinton Avenue.
Info: www.rocmrrc.com

OHIO, WEST CHESTER (Cincinnati Area), March 15, 2025. 2025 Annual Division 7 NMRA Spring Model Train Flea Market. Lakota West Freshman Campus, 5050 Tylersville Rd.
Info: cincy-div7.org

OHIO, WOOSTER, March 15, 2025. Wooster Train & Toy Show. Wayne County Fairgrounds Event Center.
Info: www.facebook.com/events/2105028099952980

OREGON, ELSIE, April 5, 2025. Pacific Model Loggers' Congress. Camp 18 Restaurant and Logging Museum, 42362 US Hwy 26.
Info: pacificmodelloggerscongress.org

OREGON, PORTLAND, March 8, 2025. Willamette Model Railroad Club Annual Swap Meet. Kliever Armory, 10000 33rd Avenue.
Info: wmrrc.com

PENNSYLVANIA, MOUNT UNION, July 18-20, 2025. Central Pennsylvania Shortlines RPM. Bricktown Museum, 300 W. Small St.
Info: rpm.pennsyrr.com

PENNSYLVANIA, YOUNGWOOD, March 21-22, 2025. RPM-EAST Railroad Prototype Modeler Seminar. Westmoreland County Community College Student Achievement Center, 145 Pavilion Lane.
Info: www.hansmanns.org/rpm_east

TENNESSEE, GATLINBURG, September 17-20, 2025. Smoky Mountain Rails Convention, sponsored by the Southeastern Region of the NMRA. Glenstone Lodge, 504 Airport Rd.
Info: 2025serconvention.org

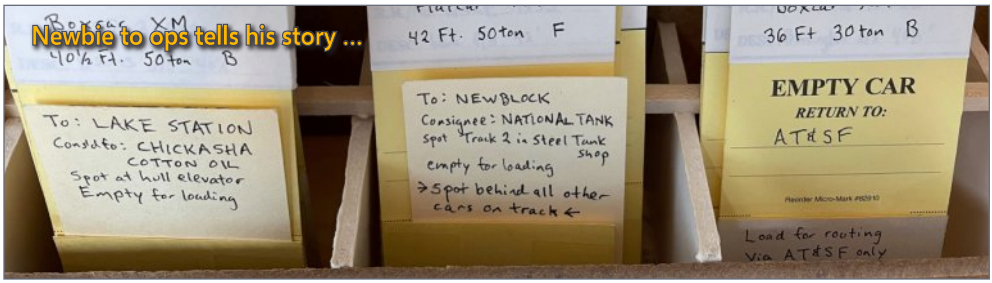
TENNESSEE, JOHNSON CITY, May 30-31, 2025. George L. Carter Railroad Museum Inc. Big Train Show. ETSU Mini-Dome on the East Tennessee State University Campus.
Info: johnsoncityrailroadexperience.org

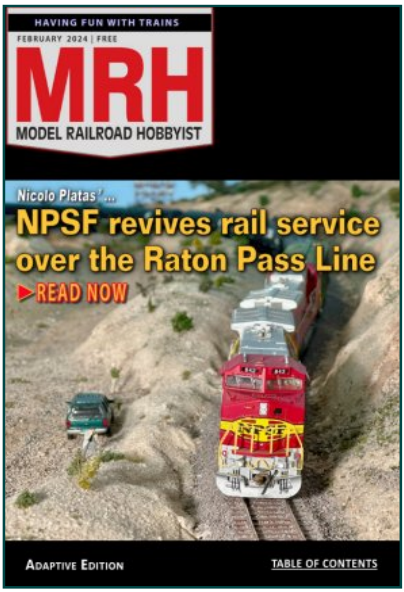
WASHINGTON, SPOKANE, March 9, 2025. Spokane Spring Model Train Show. Spokane County Fair & Expo Center, 404 N. Havana St.
Info: shirleysample13@gmail.com ■

Clickable advertiser index

Clickable “other” index

Coming next month in MRH ...

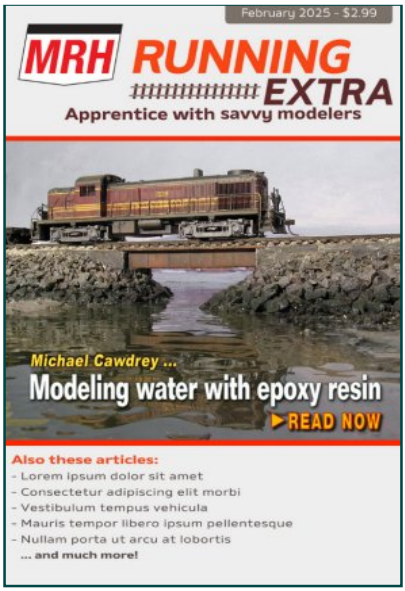




... coming February 15th in the February MRH

Coming next month in Running Extra ...

... all the MRH articles and ads, PLUS:



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