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Front Cover: Pascal Latulippe demonstrates, step-by-step, how he builds these fantastic-looking conifers in our June issue's cover story.

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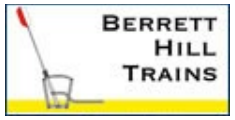

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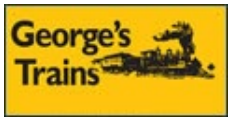

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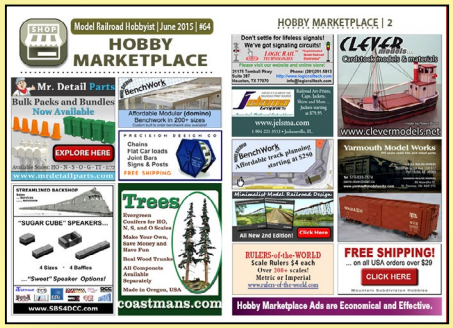

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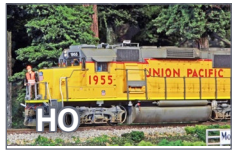

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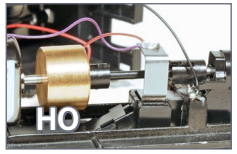

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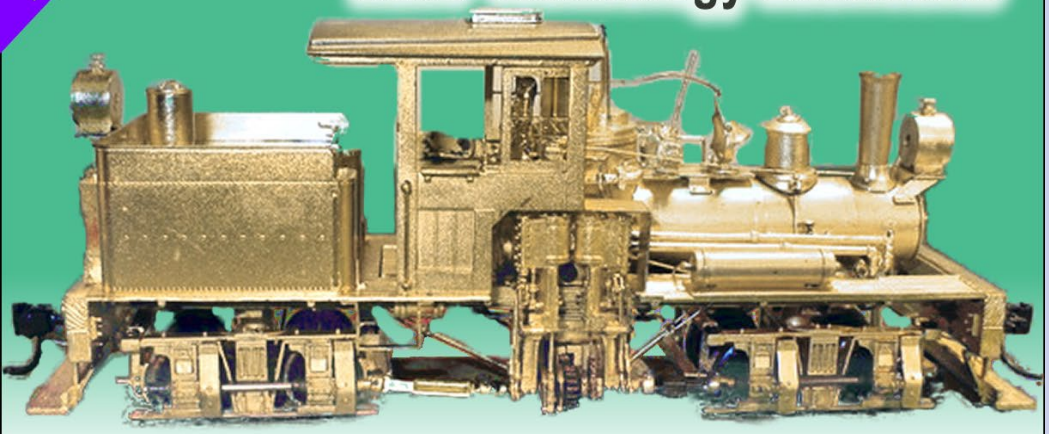

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ASSISTANT EDITOR

editorial

Don Hanley

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Model railroading as art?

The late Frank Ellison said "model railroading is an art, and the trains are the actors," so as you read the editorial, keep this in mind.

In last month's Getting Real column, (mrhmag.com/magazine/mrh-2015-05-may), Marty McGuirk showed how he used a photo of a roadway to extend a scene into his backdrop. The column generated a lot of reader feedback, so I thought I would take advantage, and expand on it.

Before the mid-'90s, using photographic backdrops was pretty much nonexistent. The technology needed for the large photos required for backdrops was limited, and the cost to produce such photos was out of reach for the typical modeler.

While the cost to do a photo backdrop of a large layout may be cost-prohibitive for most of us, with medium to small layouts it is becoming a real possibility. Add to that what Bill Geiger introduced using computer-generated backdrops, mrhpub.com/2014-07-jul/land/#56 and we have another element added to the backdrop possibilities.

In the discussion at mrhmag.com/magazine/mrh-2015-05-may/gr_using-photo-on-backdrop, Publisher Joe Fugate postulated

that there are two types of backdrops: "organic," meaning "more man-made" and "mechanical," meaning "more machine-made," which I think is a good starting point.

Both organic and mechanical backdrops can be done very well or very poorly. Rob Spangler does a fantastic job on the organic side, while Mike Confalone and Tom Johnson superbly demonstrate what can be done on the mechanical side.

But here is where things get interesting. Our models fall somewhere in between on the realism scale. If you compare a photo of a model side-by-side with a prototype photo of the same piece of equipment, you will immediately know which is which. The same is true comparing a painting to the model.

So the question begs to be asked: since technology has changed the dynamics of what we can do with our backdrops, what is

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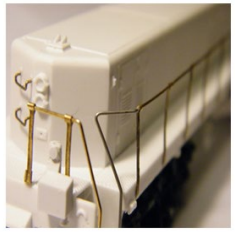
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Assistant Editor's Thoughts | 3

the correct balance? Ideally we would have a backdrop that matches the same scale of realism as our models.

Some features can be painted by just about anyone with a small amount of skill – clouds, distant trees, mountains or hillsides. These objects do not require a lot of detail, and the suggestion of them is enough for the mind to fill in the missing details. Some things become a little more difficult for the average modeler to pull off. These would be buildings, roads, and other man-made features. If these are not painted well, they can ruin the effect of the entire backdrop.

On the other hand, photographs of structures added to a backdrop can add too much detail, making the trains look toy-like, which is not desired either. Some things can be done in Photoshop or other similar programs, but there are limits to

what can be done. A picture of a building still looks like the real thing, and not a model.

Back to Frank Ellison – we need to think of a theater setting. The backdrop is in a supporting role for the actors. It is not the main focal point. The same is true for the layout backdrop; it should be in a supporting role. Our trains are the actors.

Let's step outside of the box and try something different. Why not photograph models of structures to add to our backdrops? After all, the models are on the same scale of realism as our trains.

The model would not have to be detailed, but even if it was. it is still on the same level of realism. The model, after it is used for backdrop photography, can be placed on the layout. Another possibility is to purchase an inexpensive kit, and paint it as needed, adding and subtracting details so it doesn't appear to be the same in each picture.

I see two additional advantages to this process as well. First; if you take the photograph on the layout, you match the lighting of the backdrop structures with the rest of the layout. Second; if you have streets or other features that cross the layout at an angle, you can turn the structure at the proper angle so when it is photographed it extends the scene properly, maintaining the correct perspective.

Will this work? I don't know, but I am going to experiment with it on a section of my layout. Are there any other adventurous takers? ☑

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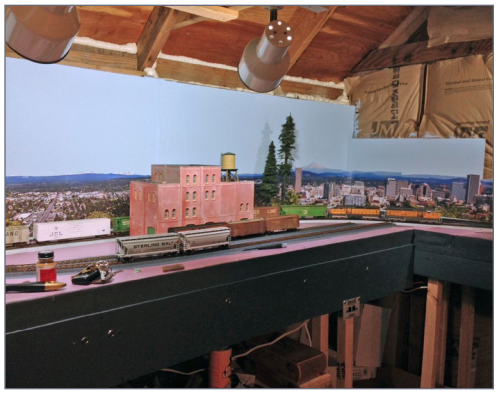

THOUGHTS ON SMALL LAYOUTS ... AND MORE

SHAUN TOMAN'S LAYOUT IN THIS ISSUE WAS A real delight to visit, photograph, and put to video (coming to TrainMasters TV in June). It's Exhibit A in the list of well-executed layouts in a very small space – exactly what modelers tell us they'd like to see more of when we do a story on a larger layout.

Well, here you go! Here's just such a layout – it's not only well executed, but Shaun managed to get a lot of layout into a tiny shed, and it's more than just a display layout. Shaun hosts regular operating sessions and by all counts, the layout looks like a total blast to operate. It must be for five guys to come run on it regularly, twice a month!

But beyond his layout, Shaun himself has an interesting story in the hobby. Like many of us, he started with a trainset on a door at grade school age, but then moved on to a bedroom-filling empire by age 13. Shaun also hung out at a local hobby shop and got to know some older local modelers.

These modelers were impresesed by Shaun's passion and took him under their wing. After a short break to kick off a professional music career and to get married, Shaun's now back active in the hobby again as a 30-something year old.

And what of those modelers who mentored Shaun when he was younger? Most of them are now part of his regular operating crew on his latest shed layout.

All in all, a very encouraging true story for those who wonder how the next generation of modelers may be getting along ... make sure and check out his layout story in this issue, and also watch for the video on his layout coming to TrainMasters TV this month.

Speaking of TrainMasters TV ...

New as of this month, non-members can now watch individual TrainMasters TV videos on a pay-per-view basis, for only $1.49. This gives you a three-day rental for watching the video online.

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Right now, this feature has been enabled for only the more recent months of TMTV, but if it proves popular, we will be adding this capability to the entire TMTV library of 200+ videos.

LAST ISSUE'S RATINGS

The five top-rated articles in the May 2015 issue of *Model Railroad Hobbyist* are:.

4.7 Fighting dirty rails with graphite
4.5 Getting Real: Using photos on a backdrop
4.5 What's Neat: Weathering, small layouts, and more
4.5 Jeff Sargeant's N-scale GN/SP&S
4.5 May 2015 News

Issue overall: **4.6**

Please rate the articles! Click the reader comments button on each article and select the star rating you think each article deserves. Thanks! ■

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Siskiyou Line update

Joe Fugate just had the first operating session on his Siskiyou Line after it had been mothballed for three years. The attendance for the session was light because of other conflicts, so the crew that did show ran just the two Coo Bay Haulers, the east and west.

These two trains traverse most of the upper desk Siskiyou Line main, and also travel the length of the Coos Bay branch. Joe cleaned the mainline thoroughly and applied graphite to the rails. Some of the yard tracks or industry spurs did not get cleaned.

Joe also cleaned the wheels of the locos the trains ran. Everyone felt things ran extremely well on the graphited track, but they sputtered and ran roughly on the dirty yard tracks or the industry spurs that had not been cleaned.

Joe and the crew did discover a train without helpers could no longer make it over the hill on its own now that he had applied graphite to the rails. But with helpers, a train would make it fine over Rice Hill summit. That's actually a good thing, because Joe has intended all but the shortest trains over the hill would need helpers.

Everyone felt the layout ran amazingly well for being in moth-balls for three-some years. The crew was also able to help Joe match up car cards and cars, getting things well organized and ready for his next operating session in June.

Joe plans to also run sessions in June and July in preparation for an op session in August for NMRA Convention attendees who sign up to run on his layout.

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Joe also has more progress on the layout to show, so do check out Joe's blog on the MRH website for the latest updates.

And remember, in 2016, Joe will be celebrating 25 years on his Siskiyou Line. We'll be doing some articles, eBooks, and new videos of the Siskiyou Line to celebrate this milestone on Joe's home layout.

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What's new on the MRH website?

There are more helpful discussion threads popping on our website every day. If you'd like something to tide you over between monthly MRH magazines, you can find some good threads out there. Here's a recent sampling of these posts.

Paint cork before track? mrhmag.com/node/22600

DCC or RailPro: mrhmag.com/node/22595

Plaster and plaster cloth techniques: mrhmag.com/node/22364

Sound for N scale diesel: mrhmag.com/node/22469

Cutting closure rails: mrhmag.com/node/22593

How to paint mountains: mrhmag.com/node/5296

Building an O-scale switching layout: mrhmag.com/node/20668

Construction of HO NYC layout 7x17: mrhmag.com/node/22324

Ops, dispatch and communication: mrhmag.com/node/22194

Using foam on the layout: mrhmag.com/node/22588

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Add a room for a layout: mrhmag.com/node/22586

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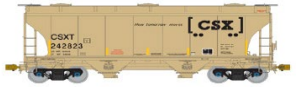

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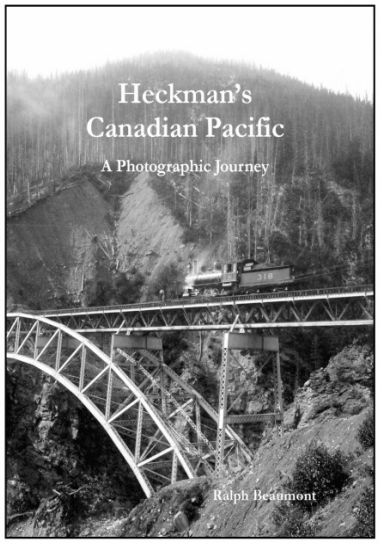

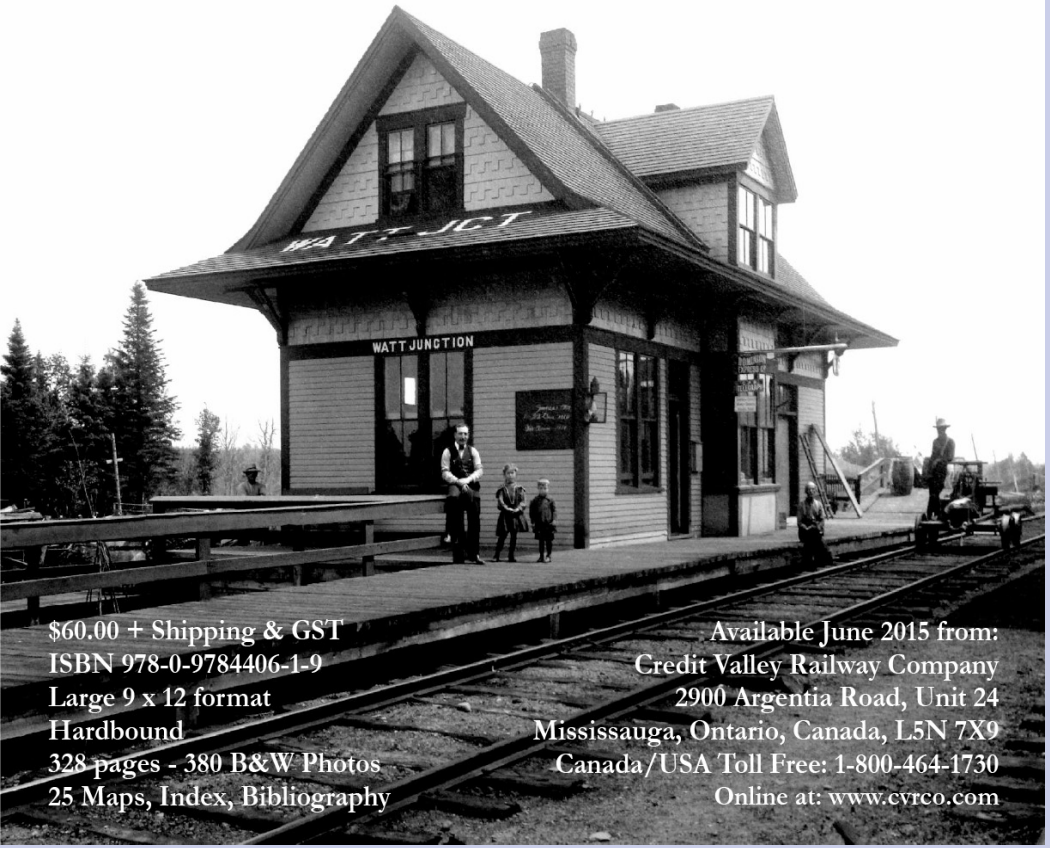

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MRH Q-A-T

column

compiled by
Joe Brugger

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Questions and Answers

Micro Engineering rail joiners

Q. How can I make Micro Engineering code 83 rail joiners more user-friendly?

—Mike Stine

A. There are a couple of approaches to working with ME's track and joiners, and they go hand-in-hand. The tips apply to any model railroad track from any manufacturer, in any scale.

After a rail has been cut to length, the ends need to be cleaned up. Even the best cutters will leave burrs and unwanted angles. A few gentle swipes with a flat file will dress the bottom of the rail and the top of the flange on either side of the web to make a joiner go on smoothly and stay tight.

The other reason to dress every joint in your rail to eliminate burrs, is that one day you will want to clean your rail. Leaving a burr to find later is a great way to end up replacing track that you ripped loose when it caught on the cleaning cloth!

MRH QUESTIONS, ANSWERS, AND TIPS

A short, gentle taper on the top and bottom of the rail base (the wide bottom part) makes it easier to get a joiner started on the rail end, and saves your fingertips from being gouged. While you have the file out, remove any burrs from the top of the rail, especially on the inside edge that will make contact with the wheel flanges. Burrs there can become a source of derailments.

Check the smoothness of the rail, and the smoothness of track joints by lightly running your hands over the finished work. Any snags mean you have some smoothing to do.

"ME track and joiners are more work than Atlas (I've never used Peco), but in my opinion it looks better – spike heads and ties are closer to scale size, as is the width of the rail head," says Charlie Comstock. "In close-up photography, too-wide rail heads look wrong, ME looks pretty close to right."

1. A piece of Code 70 rail is tapered and smoothed to "condition" Micro Engineering rail joiners to slide smoothly over rail ends. The tool is mounted here in a collet which is attached to a comfortable wooden handle.

Thisguy22: "Building a tool was my answer. In this case,

it was for the N scale code 55 joiners – oh so much fun when they're a tight fit. After I jabbed myself in the hand for the 90th time and/or bent the rail and joiner, I mounted a short (about two rail joiners long) piece of rail into a block of wood and filed the rail base to a fine point. I then slid every joiner onto the jig to expand it so it fits easily over the rail."

Locking pliers are an alternative to a block of wood or a pin vise.

Handled this way, the ME parts give a snug fit. Even so, solder as many joints as you can, and add feeder wires from the power bus to each length of rail. Many people have skipped this step and operated successfully for years, only to find paint and diluted white glue insulating the track joints when they start scenery work.

When they are available, Atlas N scale code 80 rail joiners are unobtrusive, and much simpler to use.

Jim Fitch: "My layout has reached the stage where I'm laying track now beyond the staging area and using code 83 for the visible part of the layout. I've got the injuries to prove it – I impaled my thumb with one of those sharp little buggers over the weekend!

"In one case I was having difficulty getting some joiners onto the ends of a Walthers code 83 #8 turnout, so I took one of my needle files and slightly filed the top corners of each side of the bottom flange of the rail, and then turned the turnout over and beveled the bottom of the end slightly. This aided getting the joiners on and just takes a few moments. I'm using the flat end of a hobby knife or my nail set to gently push the joiners on the rail where they are a little tight."

Atlas used to make code 83 rail joiners, which were finer, shorter, and less obtrusive than their code 100 (now 83/100

Playback problems? Click here ...

universal) joiners. They can still be found at some shops, and at train shows.

Thanks also to Jeff Allen, Dave B., Fred Barrett, Steve Watson, ChooChoo Chuck, NDHolmes, Jim Fitch and Rob Spangler..

Charlie Comstock's track-laying tips:

See the video above for full information.

Here's the whole thread:

mrhmag.com/node/21987.

Why do people always look slightly unrealistic?

Q. **It seems that, in almost every pic I look at, the people just don't quite look right. Even in some of the most spectacular models, when there's no way to tell it IS a model, the people are dead giveaways.** —Irish Rover

2. John Winter adds highlights to his figures to vary the tones, and applies washes to tone down the colors and dull the shiny clothes. He then seals the figure with Dullcote. John Winter photo

A. The round plastic base is always a dead giveaway.

Many pre-painted figures are too bright and too shiny to look like anything other than Miami in mid-summer. Railroaders 'way back when tended to be covered in grease and coal dust by the end of a shift. A wash of India ink or flat acrylic paint – even a general clear matte spray on a set of little people – will make a big difference. Picking out cuffs, bracelets, buttons, bandannas and other details with a fine-point Sharpie or a 000-tip brush will bring them to life.

Figures that are running, jumping, lifting, and waving catch the eye at first, and then become boring. They create a "frozen moment" that is contradicted by the movement of trains. Our brains are conditioned to expect continuous random movements. Especially those of us with young children.

Study photos of the time and place you are modeling. You will often be surprised how few people show up in the pictures. An

3. Shiny people in bright clothing stand out like sore thumbs on model railroad layouts. And none of them have eyes . . . See the link on the next page. Joe Fugate photo

effective story can be told by figures that are doing very little, or doing something that involves little or no overt motion. An electrician looking inside a signal bungalow could be working with his hands, without any outside evidence of motion. A welder need not move, and in fact, a simulated arc welding light could imply activity. Even two people standing together "discussing something" would not have to move to be credible while the railroad is in motion.

Why is this person standing here? There should be a story behind each person's position. What are they doing that requires them to be there? In the long run, fewer people give a better overall look.

Be selective when you shop. AHM marketed figure sets in the 1960s that shame most of those available today. Preiser sells good-quality scale people. But some figures now available are poorly-proportioned, have flippers instead of hands, and pointy blobs instead of faces. The quality of painting is often mediocre. Unless your talents run to sculpting in microscopic detail, save your money.

Jurgen Kleylein: Here's the finest example of HO figure modeling I know:

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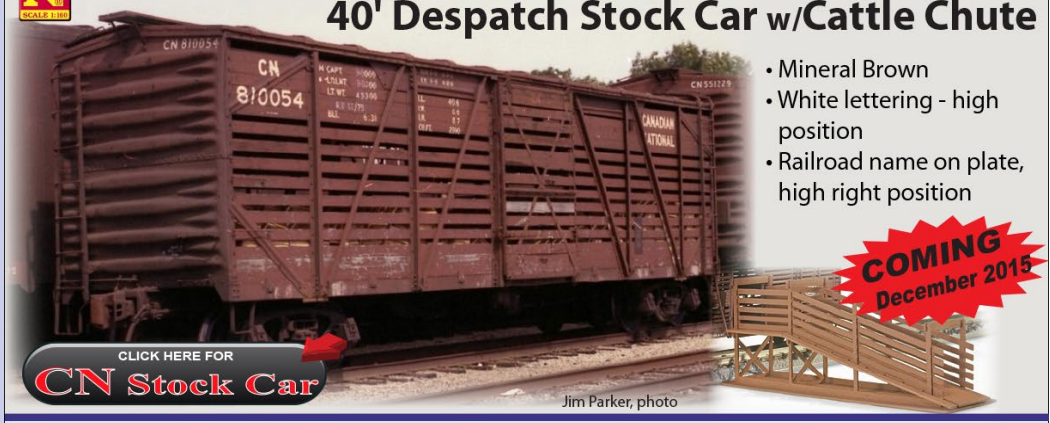

- Mineral Brown
- White lettering - high position
- Railroad name on plate, high right position

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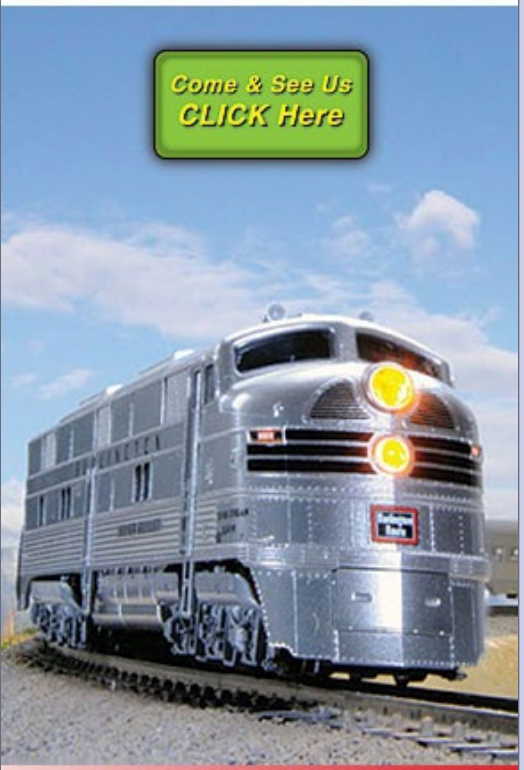

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Even in Jurgen's example, the waiting people never get on the bus and disappear. Instead of leaving vehicles and people in the same places on the layout decade after decade, mix them up. Rearrange cars in parking lots, move trailers away from loading docks. Position the section crews at different locations. Seems silly, but it's a cheap and easy way to change the landscape.

UP Willy recommends People Scale at peoplescale.com/Painted-Figures-HO-Scale-187_c192.htm.

Their models – painted or unpainted – come in S, HO, N and Z scales. The link above is to HO scale. You can get them painted or unpainted. Tube acrylics are fine for painting.

If you do paint, *leave all of the figures on the sprues* until you are finished. Give the unpainted plastic people a

good wash in a mild detergent like Dawn and let them dry thoroughly before spraying a light primer coat.

Popular figures must be used very judiciously. Checkers players evoke a certain time and place, but the guys show up very frequently, on widely-separated layouts.

Joe Fugate, mspanton, Milt Spanton, alphaGT, Russell Kingery, shadowbeast, and John Whitten contributed to the discussion.

The original thread: mrhmag.com/node/9142.

There is a long, chatty, and useful discussion of figure painting, with absolutely no photos, at thortrains.net/paint1.html.

Charlie Comstock wrote an article on painting figures in the July 2011 MRH, page 34 "Applying Makeup."

mrhmag.com/magazine/mrh-2011-07-Jul/ss-applying_makeup.

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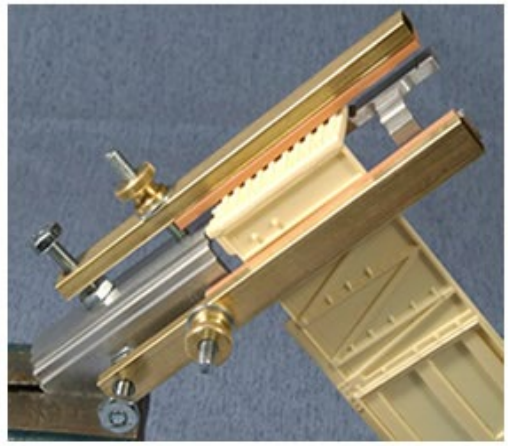

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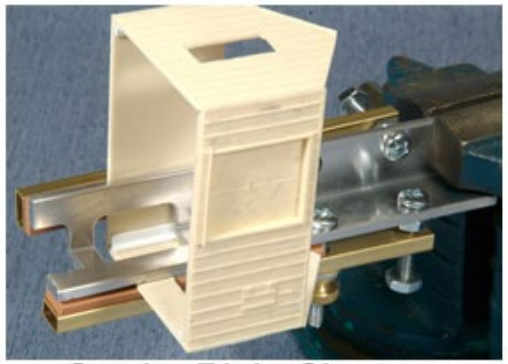

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TIPS

Live view modeling

While working on installing some grab irons on a Proto2000 stock car kit, I needed to see the tiny grabs and pins, and the 4" magnifying glass on my Helping Hands tool was finicky and easily distorted.

Instead, I mounted my new phone (a used Samsung Note 2 ...a large phone with a large screen) into a vise, turned on the camera, and zoomed all the way in. Voilà! Auto-focused, clear, large picture of just what I needed to see.

And no extra cost.

—Steve Haworth

Website: rgsrr.info.

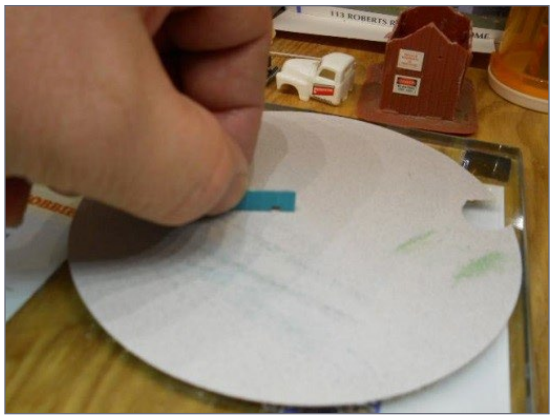
Blog: rgsrr.blogspot.com.

Keep it flat

If you work with wood or styrene a lot, as I do, then you will surely find this tip useful.

Most of us hobbyists already know that working on a piece of glass is advantageous in many ways, but did you know that if you stick a piece of sandpaper on the glass you have a great way to true up edges, or reduce the size of small or large pieces all while maintaining a nice straight edge?

I use self-adhesive sanding discs made for an orbital sander, but you can use regular sandpaper attached with spray adhesive as well. 150-grit makes a good all-purpose sander, planer, or joiner but you can use whatever works for your materials and specific



4. Use sandpaper on a self-adhesive orbital sander disk, laid against a piece of glass, to get a totally flat and true surface.

project. When the sandpaper clogs up or wears smooth, peel it off and apply a new piece.

—Ron Haviland

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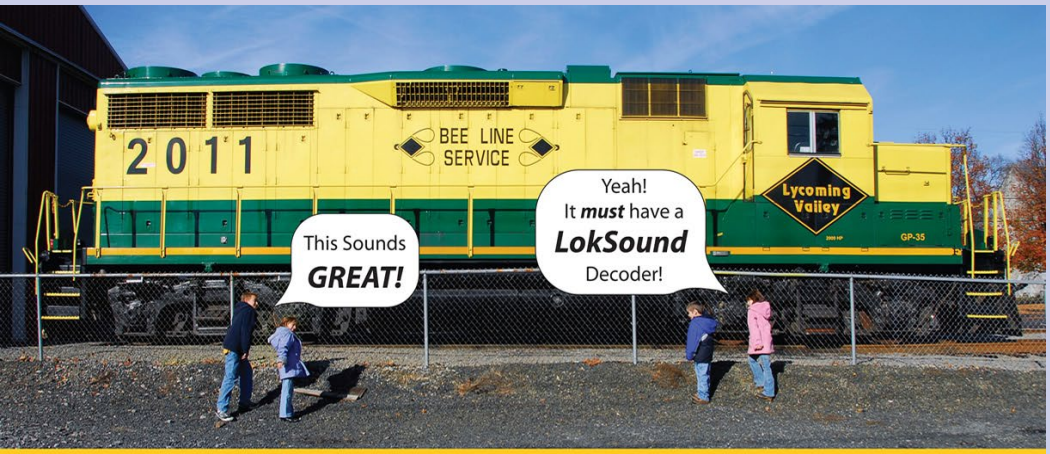

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DCC IMPULSES
column

BRUCE PETRARCA

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DCC STATIONARY DECODERS ...

MOBILE DECODERS ARE THE FIRST DECODERS that come to mind when folks talk DCC. They control the motor, lights, sound and animation in locos and other rolling stock.

One of the strengths of DCC comes with the use of stationary, or accessory, decoders. What are they and why do I care?

As one might infer from the name, stationary decoders [1] are part of the layout, not part of the rolling stock. They are most commonly used to control turnout motors. However, they also have uses in signaling and layout animation, where they may drive motors, LEDs, light bulbs, or even the room lights.

I'd like to thank Jim Scorse, the founder of NCE Corporation. When I mentioned to him my interest in doing a column like this, he sent me samples of his wide range of decoders. Thus, I can give you, my readers, firsthand knowledge and good photographs of the NCE products.

▶ DCC TIPS, TRICKS, AND TECHNIQUES

System compatibility

There are many manufacturers of stationary decoders. Some decoder manufacturers also make systems. Some don't. Like all NMRA-compliant DCC products, all DCC systems should work just fine with any stationary decoder, at least as far as the basics go: throw #1, close #1, etc.

If you are headed toward computer control of the layout, you will want units that are compatible with your control bus (Digitrax' LocoNet, or whatever you use).

In its simplest form, a stationary decoder will connect to the same DCC power sent to the track and then to one or more turnout motors. The DS44 [1] is a prime example. The DCC signal connects to the red and black wires on the right and four stall motors connect to the wires on the left. Starting from there, you get increasingly more

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1. Stationary decoder: the Digitrax DS44 looks a lot like an HO mobile decoder, just with more wires. It handles four stall motors. Digitrax photo

complex decoders with features like external power inputs and feedback to your DCC system.

Configuration

Most stationary decoders [2] come as an open board that needs to be mounted with standoff washers. I recommend non-conducting (nylon) washers to avoid any shorts on the board.

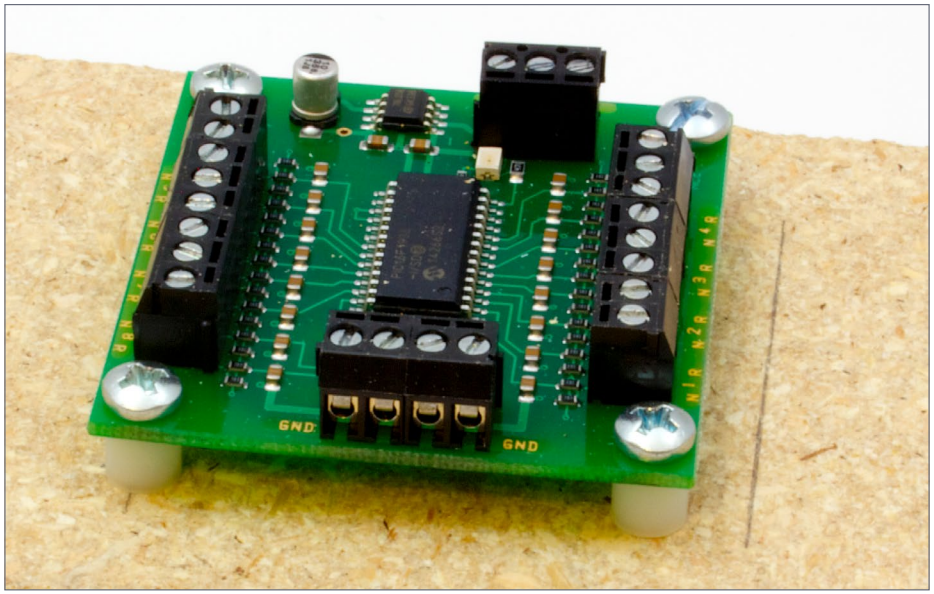
Activating a stationary decoder

Most DCC systems offer throttles that can control

stationary decoders and some that can't. Virtually all high-end throttles will do so. Many of the low end throttles won't. In many systems, the only throttles that support stationary decoders are also the ones that provide programming and consisting. So you need to decide who will be allowed to use these potentially dangerous throttles.

It is possible to control stationary decoders from switches on the fascia or elsewhere. One of the simplest ways to do this is to connect pushbuttons or double-throw center-off toggle switches to the NCE Button Board [2]. This innovative board connects to the NCE Switch 8 [6] with just three wires, allowing direct operation of the turnouts connected to the decoder.

Some decoders, such as the Digitrax DS64 [3] will control turnouts, send feedback to the DCC system and allow connection of



2. NCE Button Board mounted to particle board using #6 x ¾ screws and nylon standoffs.

3. Digitrax DS64 has it all. It will work with any turnout motor except a servo, accepts fascia switch inputs and provides LocoNet feedback. Digitrax photo

fascia switches to operate the turnouts. Finally, a computer connected to the DCC system can automate moving turnouts.

Addresses

Stationary decoders have addresses just like mobile decoders. Don't worry about conflicts or short or long addresses. An address of 1 stationary is a different address than 1 mobile or 0001 mobile. So, use stationary addresses as best suits your layout.

The stationary addresses can be in the range from 1 to over 2000. Be aware that some decoders don't support addresses over 1024 or so.

The most popular method of deciding addresses is to start around the layout and number the turnouts sequentially. Some folks use very small numbers for mainline turnouts and then use three-digit addresses for yards, restarting the numbering within the yard with a different significant digit.

If you got lost in that explanation, here's an example: the mainline turnouts might be 50, 51 . . . 99, while the main yard would be 101, 102 . . . 199 and the next yard 201, 202 . . . 299. This leaves the desirable single digit and low double-digit addresses for macros.

Macros and routes

Now that I brought it up, I had better explain it. "Macro" is shorthand frequently used in the world of computers. It comes from the Greek for "long." The actual term is "macro instruction."

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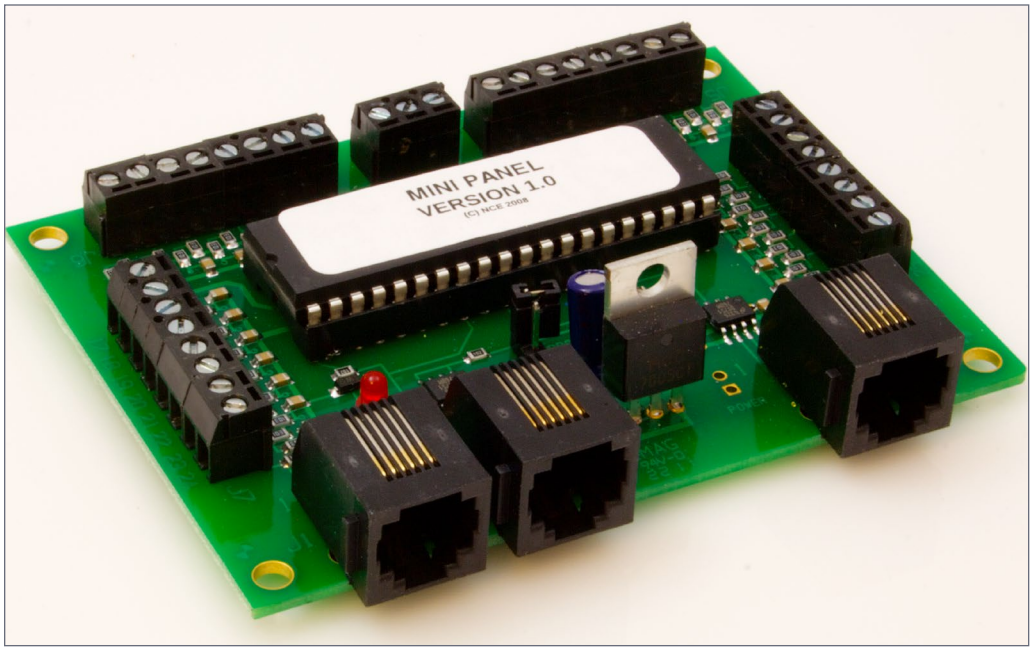


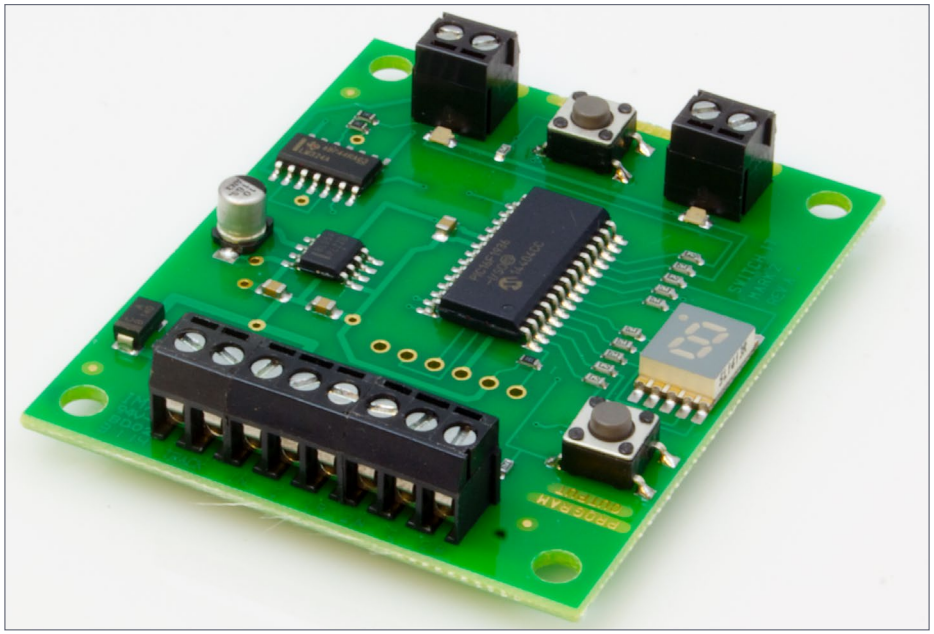
4. The NCE Mini-Panel is one way to create routes or other macros.

What it really refers to is a single instruction that will cause the system to execute many more instructions. Using macros in DCC requires a command station or other controller, like NCE's Mini-Panel [4], which supports routes or macros.

NCE's Mini-Panel is a small board [4] that connects to NCE's cab bus. It is fully functional with NCE systems and partially functional with the older Wangrow systems. Routes or other sequences of commands are stored in non-volatile memory, so that they will stay available even when the power is off. The Mini-Panel can also connect to up to 30 switches or block detectors. When a command is received, from a switch, block

detector or a cab, the Mini-Panel sends out the appropriate commands through the NCE system.

One of the most frequent uses of macros is to create "routes." The user decides that when he selects route 1, for example, he wants to be routed from the yard entrance to the loco service area. This is accomplished by telling the controller what route you wish to be assigned to address 1. For example: turnout 201, thrown; 202, closed: 203, closed, etc. This programming is done once during layout construction, not for each operating session, thankfully. Now, when you are approaching the yard, you issue a command of "throw 1" and the route is set to the loco service area for you.



5. NCE's Switch-It MK2 decoder for two stall motors.

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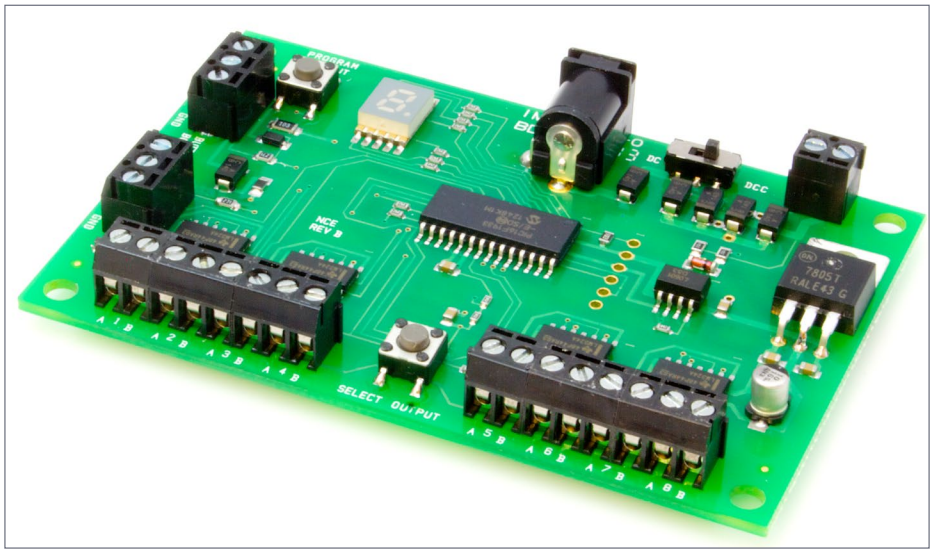
Types of turnout motors controlled

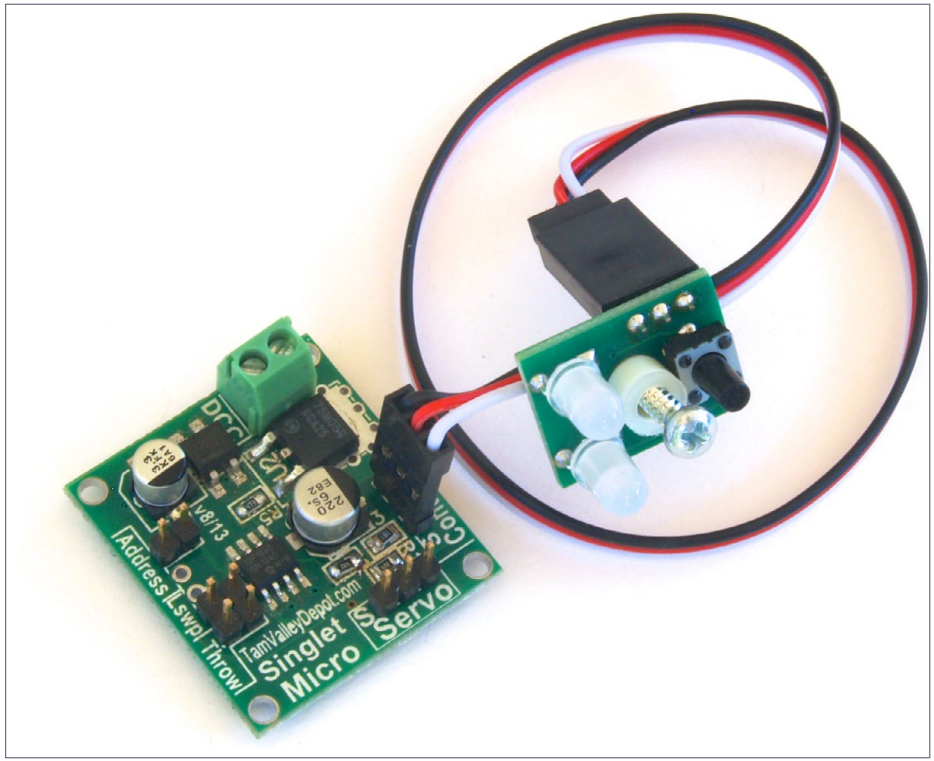
The version of stationary decoder selected must coincide with the type of turnout motor being controlled. There are three major styles of motor that stationary decoders are designed to work with: stall, servo and snap.

Stall motors (also known as slow-motion motors), such as Tortoise by Circuitron and Cobalt by DCC Concepts, work on the principle of allowing a motor to run to the end of its travel and then stall – that is, not turn – but still draw a very small current. They need stationary decoders designed for such use, such as NCE's Switch-IT MK2m [5], which controls two stall motors.

A decoder that controls one or two motors is more expensive per turnout than one that controls many, like the NCE Switch 8 MK 2 [6] that controls eight stall motors. However, consider the wiring



6. NCE's Switch 8 MK2 for eight stall motors includes a jack for external power.



7. Tam Valley Depot's Singlet decoder for servo motors. Tam Valley Depot photo

between the board and the controller. If you only have a few turnouts in the area, a simpler decoder may be the way to go. In a yard, with lots of turnouts, the models with more outputs are perfect.

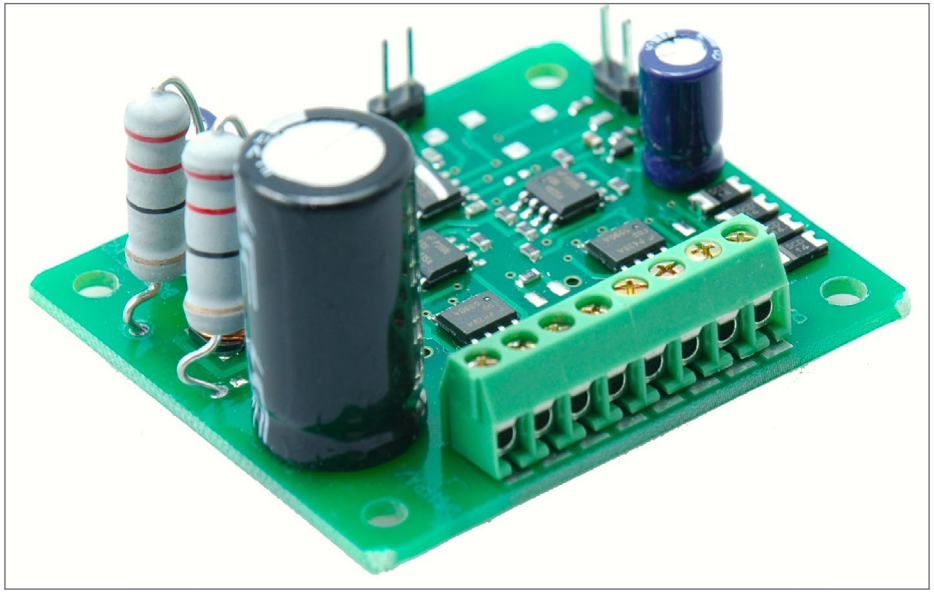
Servo motors, such as have been used in RC planes for years, are coming into favor due to the increasing costs of the stall motors. Tam Valley Depot has been at the forefront of this wave. They supply decoders [7], servos, cables, etc., truly a one stop shop for servo turnout control. Duncan McRee, the owner, is a model railroader, so, dealing with him, one knows that he is getting a model railroader's view, not that of an RC plane guy.

Snap motors are, perhaps, the oldest version of turnout motors. There are several versions of snap motors, but they can be loosely grouped into single-coil and dual-coil.

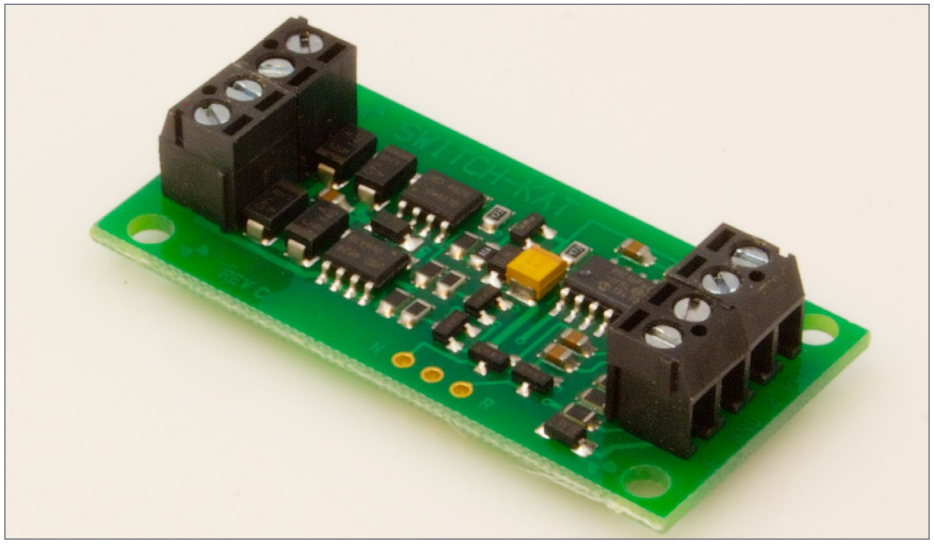
Some stationary decoders, such as Digitrax' DS52 [8] can operate both styles of snap motor. The DS52 can even control two stall motors. Most others are limited to one type or the other.

NCE's Switch-Kat [9] is an example of a decoder designed for a single-coil motor, such as Kato's Uni-Track or LGB's turnout motors.

Dual-coil motors, such as Atlas or Bachman's EZ track can be activated by the NCE Snap-It [10] decoder. The NCE Q Snap will tame four dual-coil snap motors.



8. Digitrax has the DS52 for any style snap motor or two stall motors. Notice the large storage capacitor in the front. Digitrax photo



9. The NCE Switch-Kat is for single coil snap motors, like Kato or LGB.

10. NCE's Snap-It will handle one dual-coil snap motor.

One of the terms that came to light about 20 years ago was CD control for snap motors. The CD term here doesn't have anything to do with music discs. It refers to capacitive discharge. To avoid the large current load of a very low resistance snap motor on the power supply, a capacitor was charged up and then quickly discharged through the motor.

Since most of the stationary decoders take their power from the DCC bus, they are mostly of the CD design, providing a quick and powerful throw of the turnout with a small draw from the DCC bus. I would highly recommend CD designed decoders for snap motors.

Hares and Wabbits

DCC Specialties Corp looked at the issue of wiring a decoder to a Tortoise and came up with the Hare [11]. It is a single decoder

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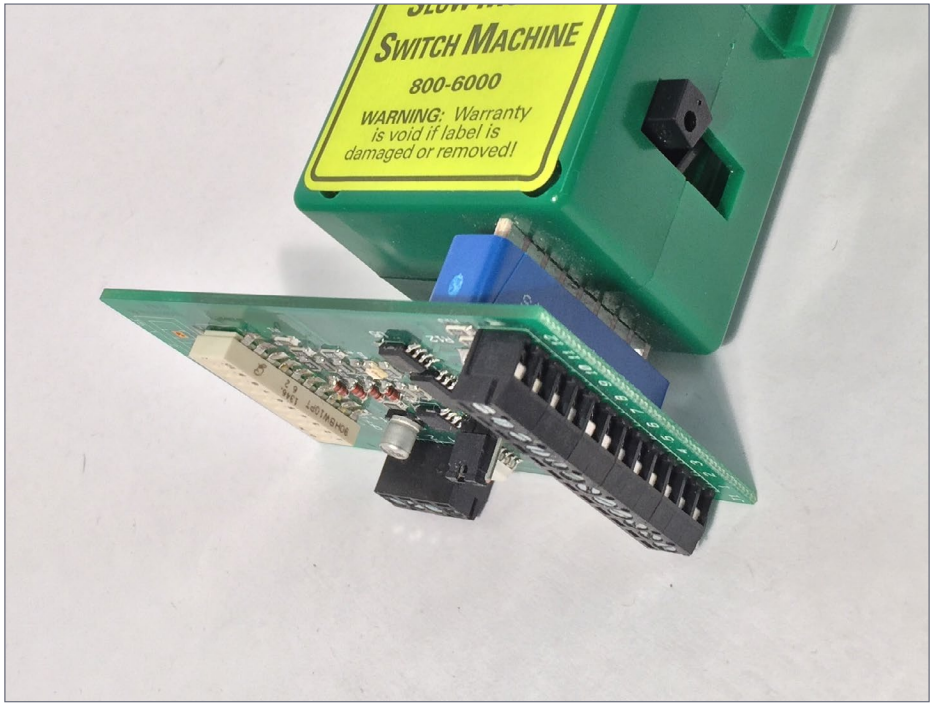
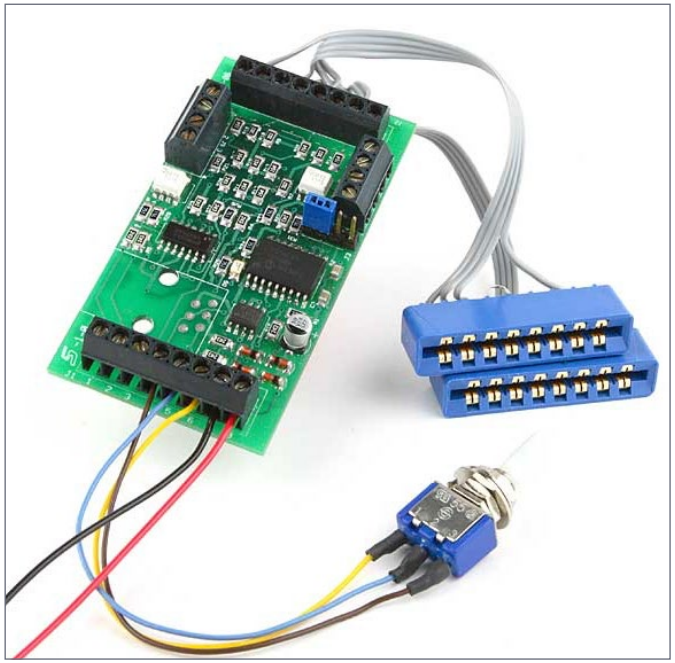
with an integral plug to connect directly into the Tortoise. In the simplest installation, the stationary decoder bus connects to the Hare and the Hare plugs into the Tortoise.

The Hare is a bit pricey, in that every turnout will need the full brains of a decoder attached to it. On a layout with only a few motors, Hares may very well be cost- and time-effective.

To mitigate the cost issues, DCC Specialties came up with the Wabbit [12]. It is one brain driving two sets of motor control electronics. While it reduces the cost per turnout, it is not as simple an installation as the Hare. Later this year, look for the Jack Wabbit from them to operate four stall motors.



11. DCC Specialties Hare mounted on a Tortoise. American Hobby Distributors photo



12. DCC Specialties Wabbit dual stall-motor decoder with connectors for two Tortoises. American Hobby Distributors photo

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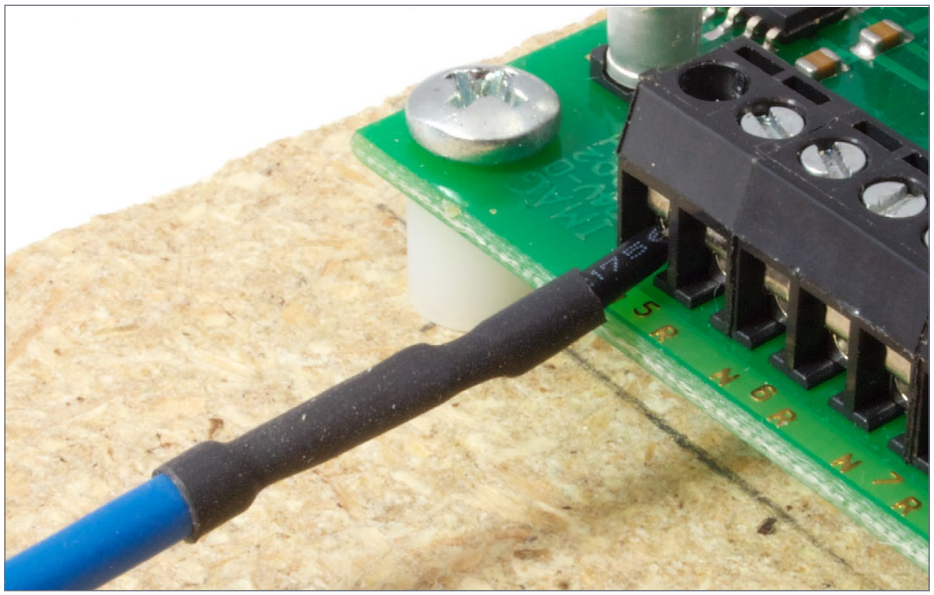
Stationary decoder bus design

I recommend a separate DCC bus for your stationary decoders.

Follow the normal DCC recommendations for wire gauge versus length on this bus. See my column on DCC wiring (issuu.com/mr-hobbyist/docs/mrh11-12-dec2011-ol?viewMode=presentation&mode=embed) or Joe Fugate's article (mrhpub.com/2015-04-apr/port) for more recommendations.

Some stationary decoder connector boards will not accept wire as large as the desired bus. Two solutions I recommend are:

Pigtail the large bus wire with a smaller bus wire [13] as large as the stationary decoder will handle. Make this pigtail short, less than a foot.



13. Large gauge (16 AWG) stranded bus wire pigtailed with smaller gauge (20 AWG) solid wire to connect to a stationary decoder.

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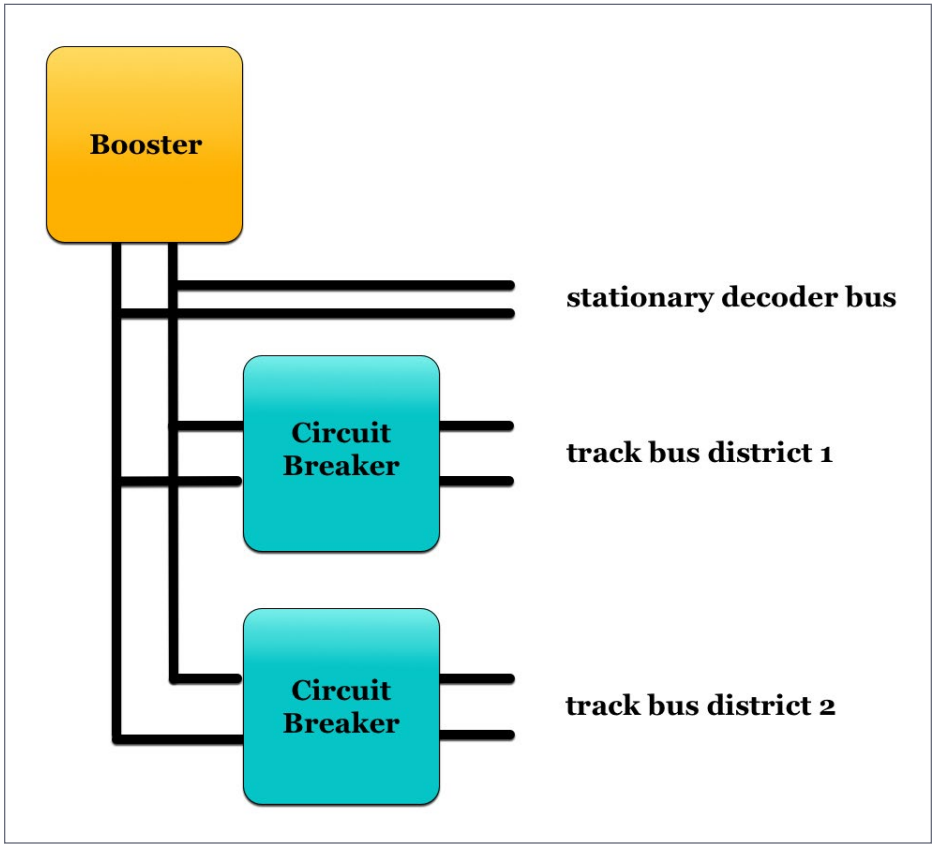
My other recommendation is to terminate the bus in a barrier terminal strip, and connect from the terminal strip to the stationary decoder with smaller gauge wire [14].

The stationary decoder bus should be connected directly to the DCC booster or to its own circuit breaker. This way, there is still power and control to the stationary decoders when the layout is shut down by a short. Since most shorts come from running a turnout, this gives you a better chance of being able to resolve the situation without manual intervention.

The simplest version is shown in [15]. Here the DCC system feeds two DCC track buses through circuit breakers. The decoders are fed directly from the DCC system.

As the layout complexity increases, more circuit breakers can be added to the diagram [15].

14. Large gauge (16 AWG) stranded bus connected through a barrier terminal strip to a smaller gauge (20 AWG) solid wire.



15. Block diagram of a simple circuit breaker system to isolate the stationary decoder bus from two track buses.

External power

Some decoders, such as the NCE Switch 8 [6] allow you to supplement the power supplied by the DCC bus with external power. Frequently this is 12 volts DC.

The advantage here is that the power needed to activate your motor is not reducing your ability to run trains by sucking up some of the power from your DCC system. Stall motors draw

about 10 mA all the time and more when they are actually moving. When you add up 50 or so of these plus the decoders to activate them, you have reduced your DCC power by about an amp.

The disadvantage is that you have to supply the power from another bus and power supply or from wall-warts spread around the layout and switched with the DCC system power.

Feedback to the DCC system

"Where am I?" is the age old question.

Some decoders will tell the command station what position they have told the turnout motor to move to. This feedback is helpful when a computer is running trains. However, nothing in this form of feedback tells the system that the turnout actually moved to the requested position. Any number of things can keep the turnout from completely throwing: a rock between the points and the stock rail, a defective motor, a broken or loose wire, and so on.

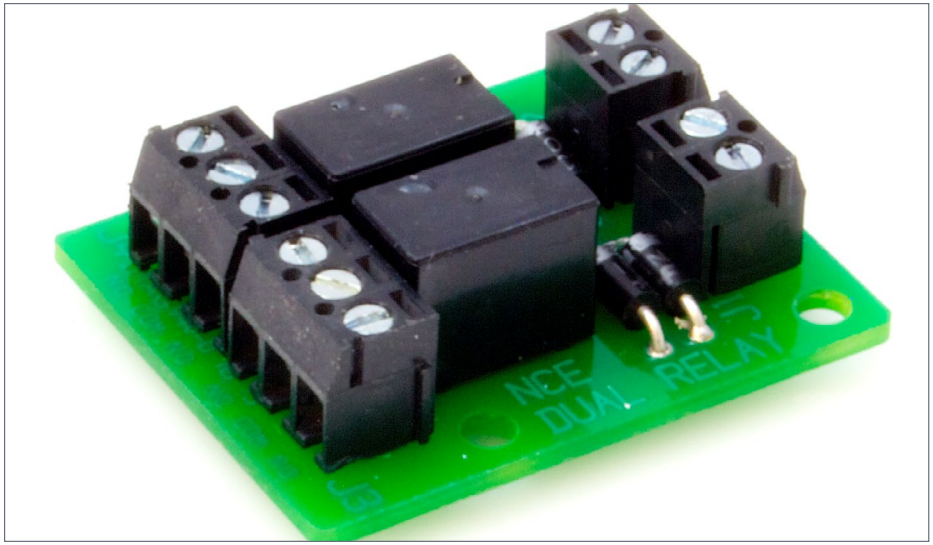
Another form of feedback involves having the motor tell the stationary decoder or an interface board that it has actually moved to the requested direction. Most often this is done with a stall motor that has a switch mechanism built in. When the motor moves, the contacts on the motor will change position. This change of switch position can be fed back to the computer.

While this is better than just relying on a decoder saying, "I told it to move," it still isn't foolproof. A rock between the points and the stock rail, keeping the turnout from throwing completely, would still report as thrown. The motor would move and report back that it had changed position. However, the rail wouldn't move due to the obstruction. The turnout could be in the original position or in the no-man's land in the middle, and the switch would still report that it had moved.

LEDs and relays

Stationary decoders are mostly designed to drive turnout motors. They can be adapted to LEDs for signaling, too. With the decoders designed for stall motors, an appropriately sized resistor in series with a LED will allow you to activate the LED with a throttle or from a system computer or a fascia switch. The LED lighting changes can be coordinated with other activities via macros.

To control other lights or track power, a relay is needed. The stationary decoder drives the relay which switches the desired power. NCE has a Dual Relay board [16] containing two relays, designed to work with their Switch-It series of decoders. It should work just fine with any stall motor type decoder. The Dual Relay board can be used as a pair of single-pole switches or a single double-pole switch. The relays on this board are rated at 2 amps and are designed for low voltages, below about 30 volts.



16. An NCE Dual Relay board is a way to control higher power items from your throttle or computer.

If you need to control power mains voltages and currents, say for room or area lights, then I recommend you use the NCE Dual Relay board and drive a 12 volt coiled relay with contacts rated to control the voltage and current you need. If you are at all unsure about working with power main voltages and currents, get help from someone who knows how to protect you and your layout from electric shocks and fires.

On NCE's web site there is a note about using the Dual Relay board to control the power to a staging track (ncedcc.zendesk.com/hc/en-us/articles/202180045-Using-a-Dual-Relay-to-Control-Staging-Track-Power). If you were to use one relay on the board to control track power and one to control another relay which powered lights, you could power up the track in hidden staging and turn on the light so you can see what you are doing with one command.

Folks always seem to have additional ideas to share. Just click on the Reader Feedback icon at the beginning or the end of the column. While you are there, I encourage you to rate the column. "Awesome" is always appreciated. Thanks.

Until next month, I wish you green boards in all your endeavors. There will be no Mr. DCC's Workbench segment this month. This entire column would qualify. ☑

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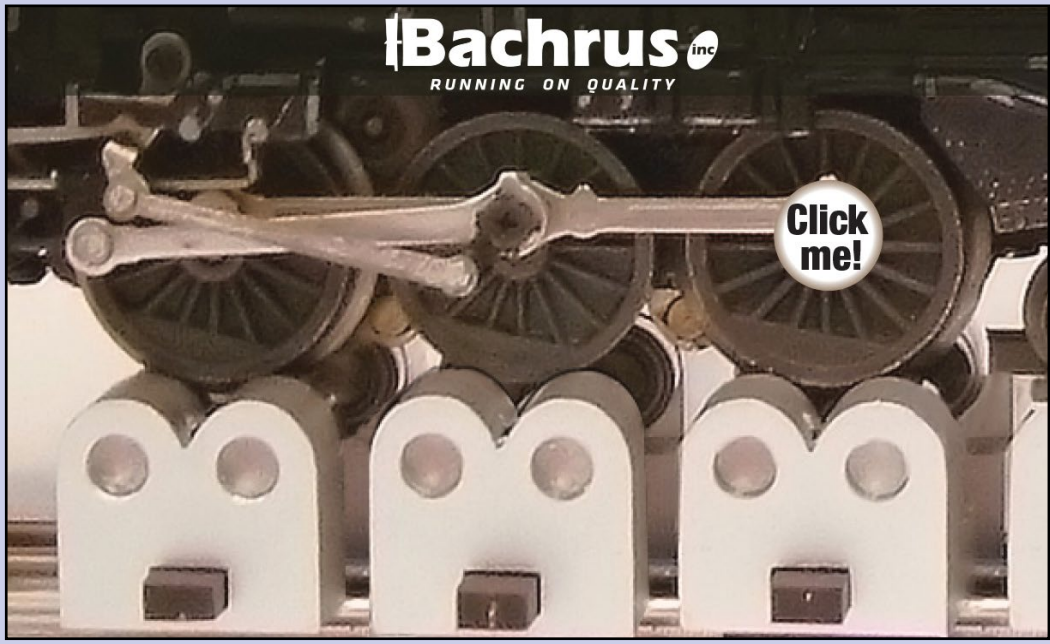

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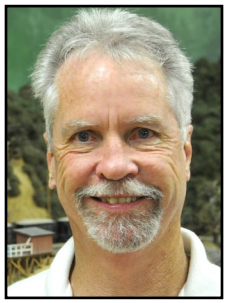

GETTING REAL
column

JACK BURGESS

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BUILDING THREE YOSEMITE VALLEY RAILROAD BOX CARS

| GOING A LITTLE FURTHER TO MAKE MORE ACCURATE MODELS

IN 1938 AND 1939 THE YOSEMITE VALLEY Railroad purchased four used box cars, numbering them 610-613. These cars were unique on the YV because they had pressed steel underframes, rather than wood underframes with truss rods like the rest of the YV box cars.

When I first acquired photos of these prototypes a couple of decades ago, I did not realize that their distinctive rolled side sills identified them as ex-Southern Pacific Railroad box cars constructed during the Harriman era. From an exchange of emails and photos with Al Westerfield, I learned that 610 and 611 were Class B-50-2 box cars and 612 was a B-50-4 box car, while the 613 was a B-50-5 box car. Class designations such as

MODELING REAL RAILROADS AND WHAT THEY DO

B-50-2 referenced the type of car (such as B for box cars), nominal capacity such as 50 (for 50 tons), and the design number (such as 1 for the first design and 2 for the next design). As noted by Tony Thompson in his book *Southern Pacific Freight Cars Volume 4: Box Car,* the Class 1, 2, and 4 cars were visually very similar.

Westerfield Models has long produced a resin kit for the B-50-1/2/4 cars (kit No. 1751). The 1700 series kits now all come with a new one-piece roof frame which is also available separately. This replaces the annoying roof cross beam and ridge pole arrangement in the original kits in this number series. Since all four of the YV cars looked similar, I bought four of these kits many years ago in anticipation of someday modeling them. However, the B-50-5 had an inside height 13" taller

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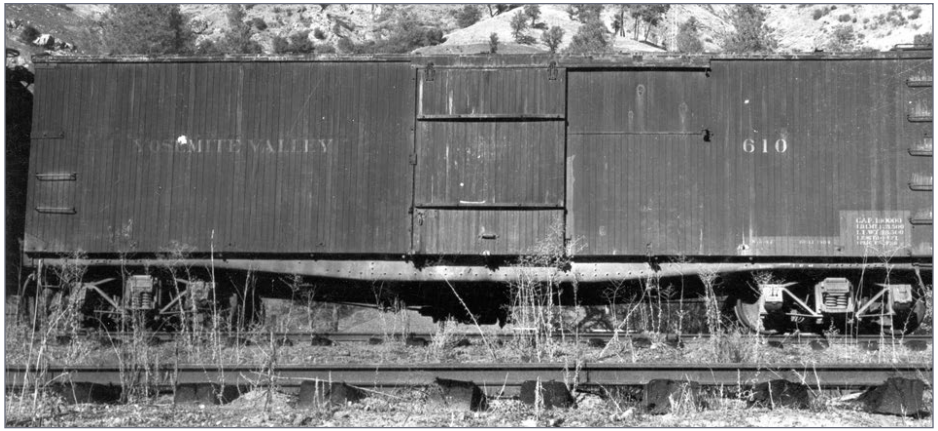
1. The view from the combine on the rear of an El Portal Local mixed train in March 1945 as it crosses over the Bagby bridge westbound. The third box car in the train appears to be YV 612, an ex-Southern Pacific Harriman-era box car. It is coupled with a Great Northern car ahead and a pair of SP steel box cars to the rear. Al Rose photo

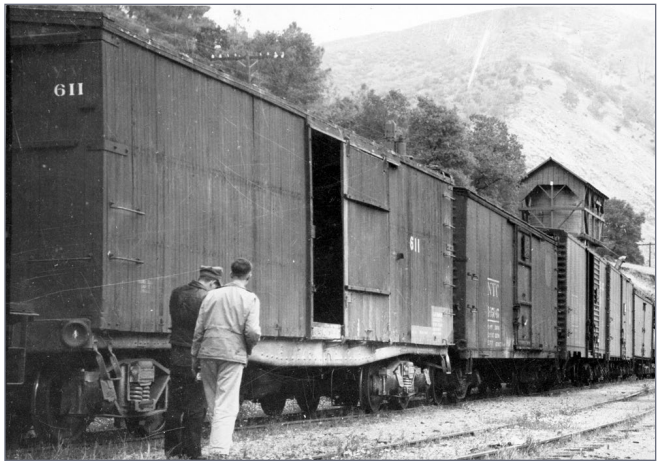
than the B-50-1/2/4 cars. I later learned that the new owner of Westerfield Models, Andrew Dahm, plans to release a kit for the B-50-5 car (which will be one of the next kits released) so I decided to build just the three B-50-1/2/4 cars at this time. [2-4]

Details and upgrades

The Westerfield resin kit models the B-50-1/2/4 cars as built. The B-50-2 were built with 5-foot wheelbase arch bar trucks, while the B-50-4 box cars were fitted with Bettendorf



2. YV 610, one of the three ex-SP B50-1/2/4 box cars on the roster, at El Portal. The black side sill is very light, suggesting that it was not repainted by the YV after purchase. The rest of the car was repainted by the YV. The area with the capacity data on the bottom left of the car appears to have been left untouched. Stanley Snook photo



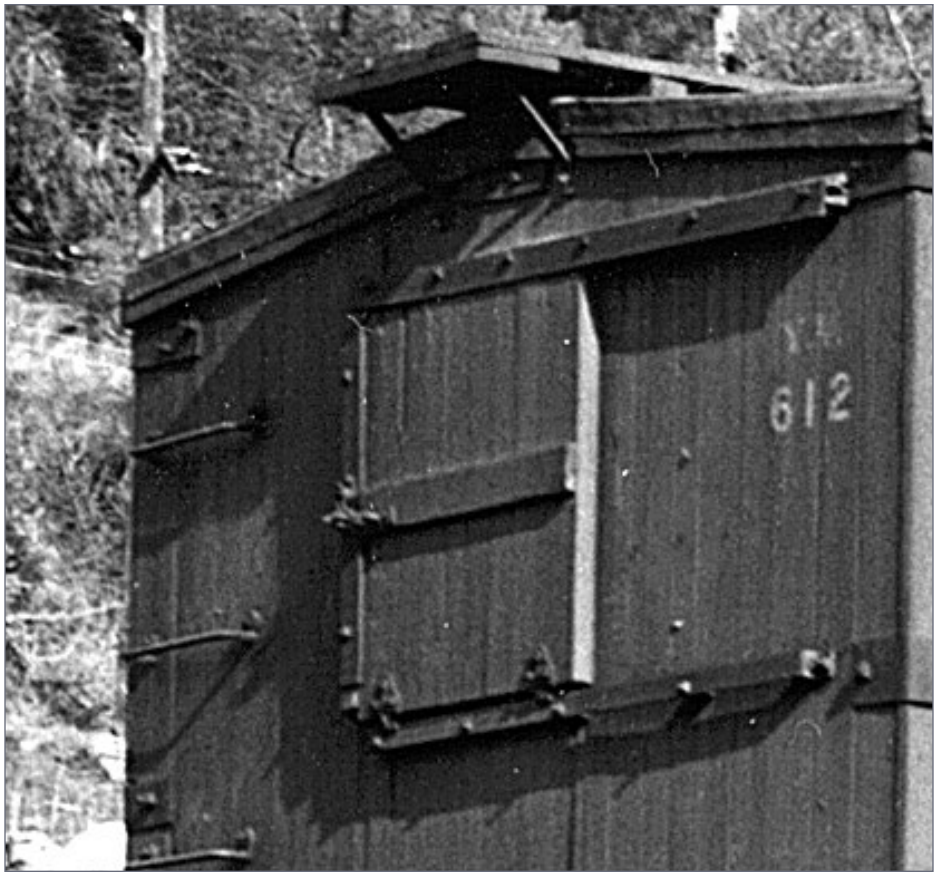
3. Another ex-SP B50-1/2/4 box car, this one YV 611 at Bagby in May 1945. This car did not receive any road name lettering. Louis Stein photo

4. A beautiful photo of YV 612 at El Portal shows the Bettendorf T-section trucks, unique to just this one car. This is also the only one of the three cars to have the road initials and car number stenciled on the door. Guy Dunscomb photo

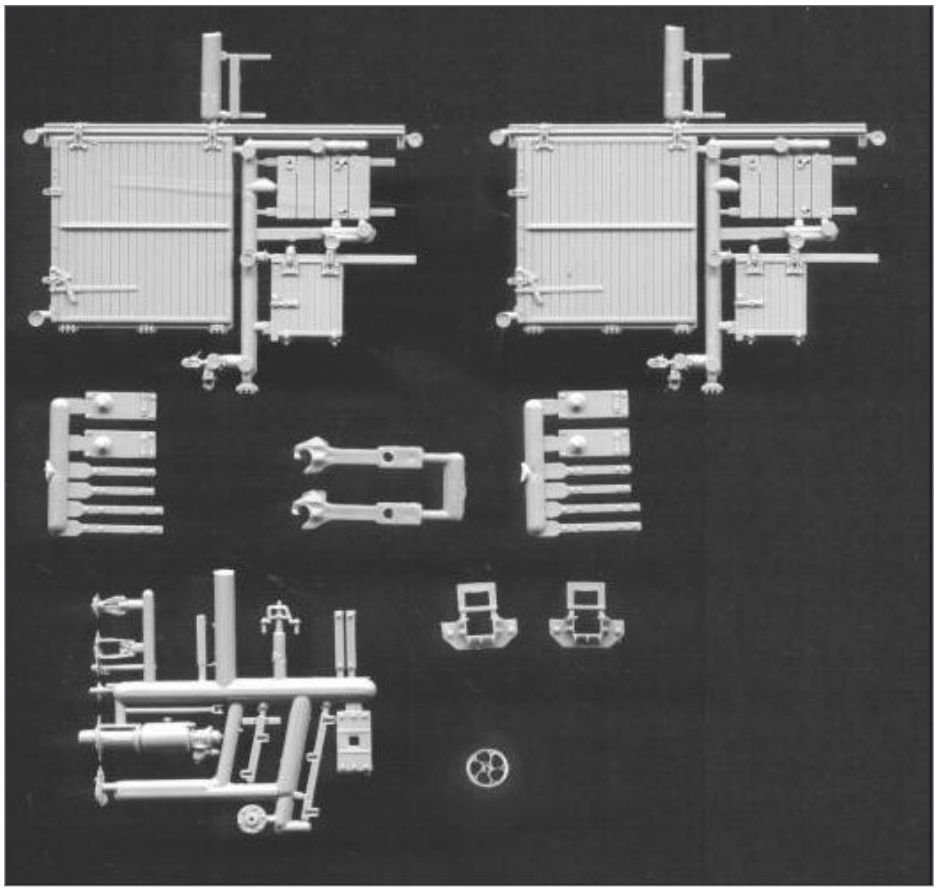
T-section trucks. I duplicated the arch bar trucks with Tahoe Model Works TMW 211 trucks. TMW does not have a website although flyers for each of their trucks are available online at sunshinekits.com/tahoe.html. An order form is also available on this site if you want to order direct. They are also available through Caboose Hobbies as Part 8126211 for the semi-scale wheels, or Part 8126111 for those with regular width wheels.

While Kadee has Bettendorf T-section trucks, they have not yet released this truck in the new style with molded springs rather than "working springs." I therefore used a pair of T-section Bettendorf trucks from The Bethlehem Car Works (bethlehemcarworks.com).

Based on *Official Railway Equipment Register* entries for these cars, all three of the cars had end doors on the A end of the cars (the brake staff was on the B end) as shown in the photo of YV 612 [5]. Some modelers might think that long pieces of lumber were loaded through these doors and frequently call them "lumber doors." In practice, pieces of lumber longer than one-half of



5. A close-up of 612 shows the details of the end door in the A end. ORER entries list end doors on all three of the cars. Guy Dunscomb photo



6. These are the parts included in Grandt Line Part 5001. While some of the parts are too small for standard gauge railroads, the end doors (on the sprue with the side door) are fairly accurate for these B-50-1/2/4 cars. The corner straps are also usable. Grandt Line photo

the inside length of the box car were loaded through the side door as far as possible and a worker inside the car then guided the excess length through the end door far enough to pull it back through the side door into the car.

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The Westerfield kits do not include end doors. Rather than scratchbuilding them, I used Grandt Line part #5001 (Colorado Style Box Car Hardware) [6].

This set has two end doors which are the same width as these cars had, and are very close to the height of the prototype doors.

The Westerfield kits have corner reinforcing straps which are 24 inches long cast into the sides, which is correct for two of the cars. But car 612 had corner straps which were about 4½ feet long based on counting the number of 3¼" boards, a common board width.

While I could have removed the cast-on corner straps for this car and made some replacements from scale 1x2s and NBW castings, I chose to extend the cast ones using the corner straps from the same Grandt Line detail set #5001.

These prototypes used Carmer uncoupling levers, a very distinct type which was original equipment on the cars. Many modelers dislike adding uncoupling levers to their cars because they are easily damaged on cars used for operations. Operators on my layout are simply told not handle the cars, so I have uncoupling levers on my freight cars. The kit includes resin Carmer cut levers but they are very fragile.

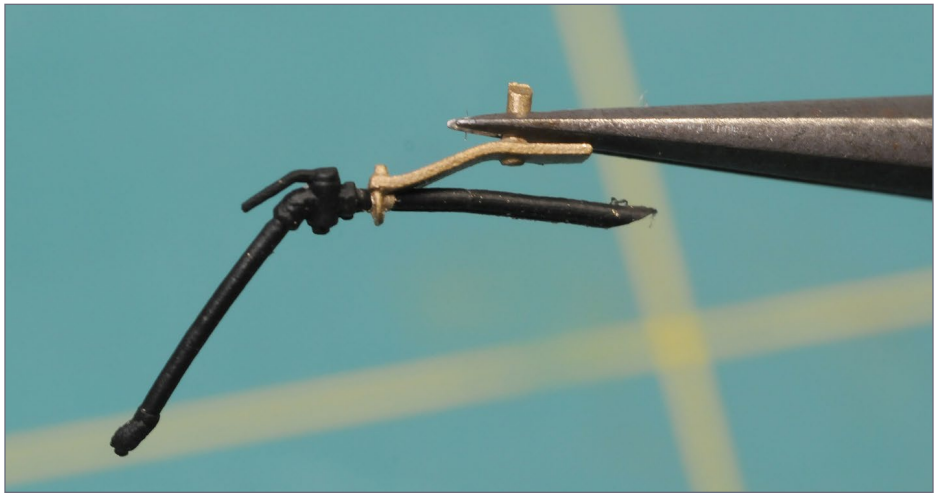
Photo-etched Carmer uncoupling levers are available from Free State Systems. This photo-etched fret [7] includes four different styles of Carmer uncoupling levers (they were used on a number of Pennsylvania RR freight cars) but the levers needed for these ex-Harriman box cars are style C and there are only four of this style Carmer lever per fret. The owner of Free State Systems, Michael Watnoski, does not have a website but you can e-mail him at freestatesystems1@comcast.net for an updated order form. The current price per package is $20 for 9 pairs. He accepts only checks sent via US mail.

The Westerfield kits provide styrene Tichy brake sets which include a plastic brake wheel. I have found

7. Free State Systems photo-etched Carmer cut levers or uncoupling levers.

plastic wheels very vulnerable on the layout and so I prefer brass castings. Precision Scale Co. makes brass brake wheels. You can order them from Caboose Hobbies (Part 05853181) for a package of 16" diameter brass brake wheels. They need to be soldered to the brake staff but that is not that difficult.

For a long time I used air hoses from Kadee but they are just too fragile, especially when uncoupling cars using bamboo skewers. Jimmy Booth at Hi-Tech Details (hitechdetails.com) has come to the rescue with rubber air hoses. Part HTD-6038 is a set of eight HO scale 22" AAR air hoses. I install them using air hose brackets specifically produced to fit these rubber air hoses from Precision Scale Co. (Part 39156). They are available direct or from Pro Custom Hobbies



8. A Precision Scale Part 39156 bracket with a Hi-Tech 6038 air hose. I drilled out the hole in the bracket with a #77 drill and then finished up with a #74 drill. Cutting the end of the air hose on an angle helps thread it through the hole.

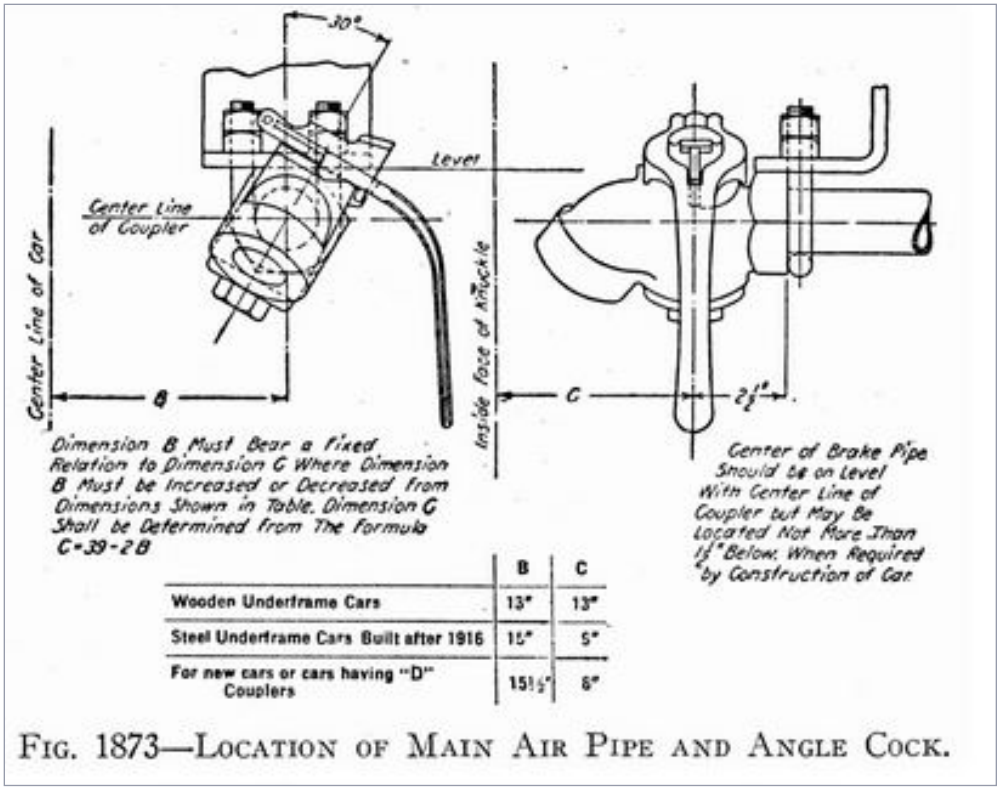


FIG. 1873—LOCATION OF MAIN AIR PIPE AND ANGLE COCK.

9. This illustration from the 1922 Car Builder's Cyclopedia shows how the angle cock for the air hose is tipped 30 degrees toward the coupler. This American Association of Railroads (AAR) standard makes it easier to connect the air hoses on two adjacent cars.

(procustomhobbies.com). (Click on Precision Scale Co. in the manufacturers list at the bottom of the page to find the listing of all of the PCS parts available from them.) [8]

I glue the rubber air hose in the brass bracket using canopy glue. Canopy glue looks like white glue but does a good job of

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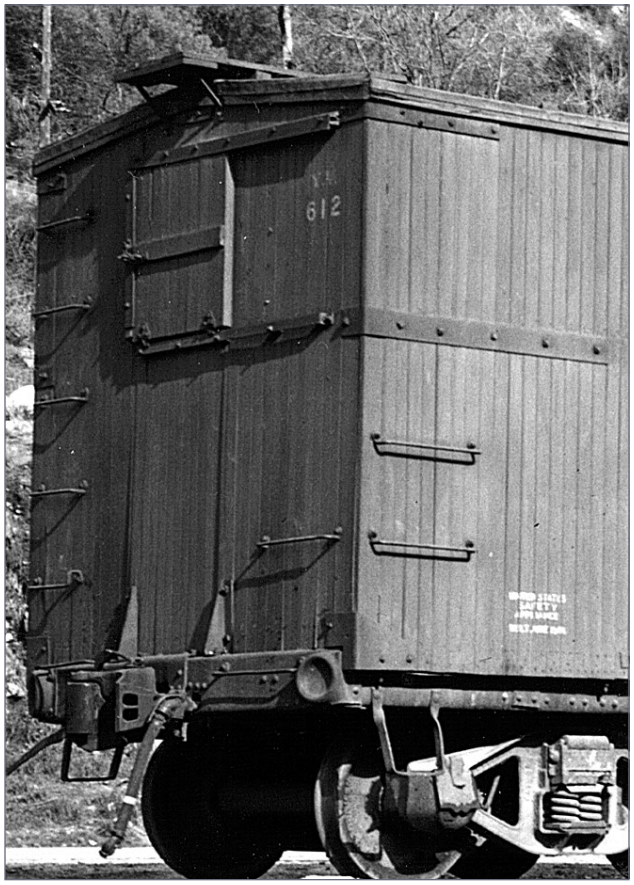
bonding dissimilar materials. Airplane modelers use it to glue canopies in place since it dries clear and stays somewhat flexible. Hobby shops that sell model airplane kits will have it. The canopy glue that I use is Formula 560 made by Pacer. Note that the angle cock and air hose should tip 30 degrees toward the coupler which was an AAR standard requirement. [9].

The sill steps in the Westerfield kit are resin castings which must be sanded thin before adding them to the car. Like the resin Carmer uncoupling levers, they are very susceptible to breakage if the cars are to be used in operations.

Years ago I began substituting A-Line steps (ppw-aline.com/detlfrgt.htm). A-Line makes three variations of corner steps and the type needed for these cars is their Style A.

The kit for the B-50-1/2/4 has jacking pads cast onto the side sills in line with the bolsters. However, YV 610-612 did not have these jacking pads. I cut them off and filed the area flat while cleaning up the side sills. That resulted in removal of the rivets in that area so I replaced them with Archer rivets. The photo of 611 [3] show the rivets at the bottom of the side sill rather than at the top like the castings. I also rounded the bottom edge of the side sills more like those shown in the photos of the YV cars.

I did not add the Archer rivets until construction of the cars was complete and the bodies had been washed prior to painting. Before applying the rivets to the side sills, I brushed on a coat of Pledge Floor Care Multi-Surface Finish (known for a long



10. Another close-up of 612 shows the long corner braces on this car and the steel triangular knee braces above the end sill. Guy Dunscomb photo

time as simply "Future") onto each of the places where the rivets would be applied. Future has been used for years by plastic modelers to provide a gloss surface before applying decals. A few years ago they changed the name of this product to the current Pledge Floor Care Multi-Surface Finish. (This product is a water-soluble acrylic coating – not a wax.) It can be a little difficult to find. I found my current bottle at Home Depot many years ago. After brushing on the coat of Future and letting it dry for a day, I cut pieces of Archer Surface Details #25 eight rivets long and applied them just like decals to the side sills.

I am not sure what they were for, but each of these box cars had nuts with rectangular washers along the bottom edge of the sides. They could have been the ends of horizontal tie-rods. They were not on the cars as originally built. They are very visible [4], easy to build, and add an interesting detail. I

11. The A end of 610 shows the lumber door, Carmer uncoupling lever, knee braces, and brake air hose. Note that the grab iron on the left of the coupler is installed "upside down" compared to the one to the right of the coupler per the prototype.

scaled their locations from the photos by counting boards. They were made from 1x4 styrene cut 6 inches long for the washers together with Grandt No. 5405 1-inch square nuts. Photos show that the long sides of the washers were parallel to the bottom of the side.

Photos of YV 610 show knee braces installed directly above the end sills. I estimated them to be about 18" high. They were made with styrene 1x6 strips cut a scale 18" long. These pieces were then cut on a diagonal to create two equal triangles. The close-up photo of 612 [10] shows that each triangular brace is actually formed by bending it to create a plate which can be bolted to the end. To duplicate this form, I bonded these triangles to 18" long strips of styrene 1x3s to create the final parts. While I don't have photos showing the ends 610 and 611, Tony Thompson states in his book that the knee braces were added to the SP cars in 1923-26 to reinforce the joint between the end sill and the end framing. I therefore added them to all of the cars. [11]

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Paint and weathering

There are several color photos of trains with these YV box cars which show that they were all painted boxcar red with black side sills. It is logical that the trucks and steel underframes were also painted black.

Color photos also show that when the photos were taken, the cars had faded to different shades of boxcar red. The challenge was to determine which cars are in each photo. For example, one photo [12] shows two of the box cars during the September 1944 fan trip. Based on the difference in height of the two cars, the car in front is the B-50-5 box car since it was 13 inches taller than the B-50-1/2/4 box car behind it. Looking closely at the photo, the second car is most likely 612 since it appears that it has the longer corner braces. Both of these cars had fairly faded paint by 1944, with the 613 slightly lighter than the 612. I used

12. A close-up of a color photo of the 1945 fan trip train shows two YV Harriman box cars behind the locomotive. The first car is the taller 613 (a B-50-5 rather than one of the B-50-1/2/4 cars) while the car behind it is the 612 based on the length of the corner braces. Al Rose photo

13. The locomotive on the front of a mixed train is backing into the double-ended siding at National Lead to pick up box cars loaded with either bagged or bulk barite lead. Note the combine for passengers left on the mainline and the empty tank car picked up from the facing point switch on the right/east end of the plant. Jim Boynton photo

this and other color photos to determine the most likely shade of box car red for each of the finished models.

Most photos of these three cars (some of which are not dated) show some light-colored "weathering" below the doors. Weathering also shows up clearly in the color photos of the cars which were taken in 1944. To accurately weather these cars I needed to figure out what caused this effect and, more importantly, when it happened in order to accurately weather the cars.

First, a quick history of the last few years before the Yosemite Valley Railroad shut down in 1945. The Yosemite Sugar Pine

Lumber Company ended operations in 1942. However the railroad still had a steady income from two other online industries—Yosemite Portland Cement Company (YPC) which shipped limestone (the main aggregate used to make Portland cement) from an online quarry at Emory at MP (milepost) 67, and National Lead Company, which shipped barite, a form of lead (used as a drilling mud in oil drilling). National Lead was located at MP 76 near the east terminus of the railroad at El Portal.

The Portland cement processing plant was located near Merced at the west end of the railroad. However, in those days many cement companies in California (with the exclusion of Permanente Cement Company founded by Henry J. Kaiser) were fixing prices of cement for the construction of dams and other large projects. Fixing prices allowed the YPC to still "compete" for such business even with the 65-mile railroad

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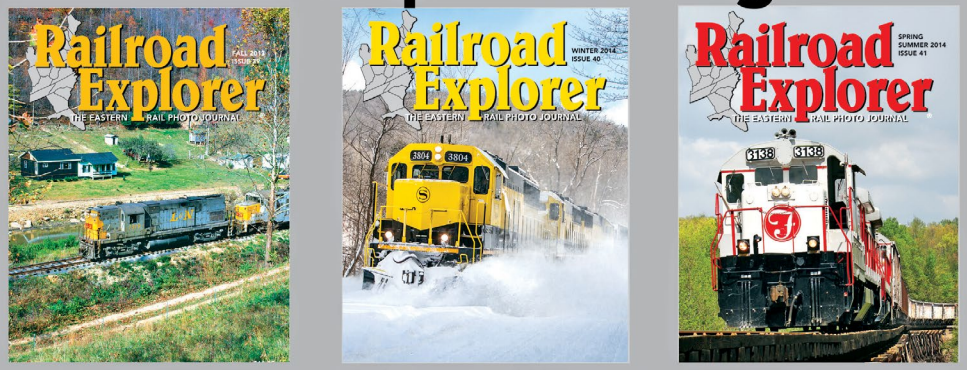

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14. YV box car 610 along the line. Based on photos of the prototype, I suspect the YV repainted this car when they bought it, but did not overpaint the dimensional data on the bottom right side of the car. I therefore painted this area of the car a light box car red. This area was then masked while I painted the rest of the car before applying the decal lettering.

haul of limestone. Henry J. Kaiser realized that the YPC cement plant was worth more than the value of the company itself, so he purchased the company in June 1944. He then shut it down and sold the machinery for more than he paid for the plant. The YVRR board of directors were aware of the sale of the cement company prior to it happening and voted to file for abandonment of the railroad a few days before the actual sale.

This was a major concern for National Lead Company, since they relied on the YV for shipping their heavy product. The barite was shipped in bags using the railroad.

So, what did National Lead Company do when they found out about the possible abandonment of the YV? How was it a factor in weathering these box cars?

An important clue is included in the July 1952 issue of the California Journal of Mines and Geology published by the California Division of Mines. That issue of the obscure

publication included a description of all of the "Mines and Mineral Resources of Merced County" which is where the Yosemite Portland Cement processing plant was located. It stated that, after the YPC plant closed, the storage units and warehouse facilities had been leased to the National Lead Company.

I read this article in the early 1990s and remembered it while trying to figure out why these YV box cars were weathered with what appeared to be a light-colored material. That led me to re-examine photos I have in my collection of the National Lead Company. One photo clearly shows three Harriman-style box cars spotted in front of the plant. [13] The car on the left is apparently loaded, as the side door is closed while the single-sheathed box car (probably an SP car) between them has most likely been loaded with bagged barite. Of the other two Harriman-style cars, one is spotted at the shipping dock and the one on the right is ready to be moved to the shipping dock when needed. The position of the cars and the open door (for some ventilation) on the one spotted along the shipping dock suggest that the YV cars were being hand-loaded with bulk barite.

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Why were these YV box cars being loaded with bulk barite? National Lead needed to get as much barite shipped

15. Like the prototype, this car was not lettered with the road name. The ends of the horizontal tie rods are readily visible. These cars were not allowed in interchange service so there are no "chalk marks" on them indicating routing and other information typically added by clerks or other railroad workers.

as quickly as possible before the YV shut down. I assume that the plant could produce more barite than could be bagged. Hence, their decision to ship bulk barite to the old YPC plant for loading while still shipping bagged barite as before. Once at the YPC plant, the bulk barite could be bagged as needed.

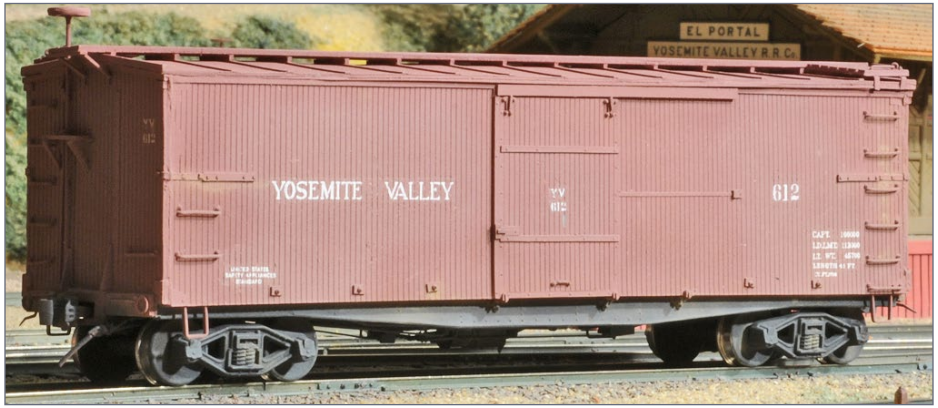
So, both doors of the YV box cars were open while bulk loading the barite into them, thus causing the light-colored dust which appears in photos.

I concluded that the amount of weathering on these cars should be restrained unless one is modeling them sometime after the June 1944 shut down of the cement plant. Is that a major factor when weathering these cars? No, and I admit

that a visitor would most likely "accept" the cars whether the cars were relatively new to the railroad circa 1939 or if I had weathered them per these later photos.

But I feel that this hobby is about satisfying our own values. I want all of my freight cars to not only replicate actual prototypes circa 1939 but to also be representative of actual freight cars which might have been in service on the YV circa 1939. Will visitors to my layout recognize that? Most likely not. But that is not the point ... life requires so many compromises every day that it is nice to have a hobby where we do not need to make compromises.

For example, when I built these cars I looked at my photos and decided that the cars with arch bar trucks were equipped with 5'-6" arch bar trucks. But while looking at the same photos



16. Based on prototype photos, this car was completely repainted and relettered after arrival on the YV. The lettering includes safety appliance lettering above the left truck, the road name initials and car number on the side door, and capacity data above the right truck.

while writing this article, I noticed that the wheels on those cars with arch bar trucks did not quite reach the sill steps. But the wheels on my models extended beyond those sill steps. That meant that I should have used 5-foot wheelbase trucks on those cars. I therefore stopped writing long enough to airbrush two pairs of correct trucks, weather them with chalks, and install them on the cars for a repeat photo session.

Would any visitor notice? Of course not. But I knew that the trucks were wrong and it was worthwhile to me to correct them. As I have said before, I do not like to compromise.

Getting back to my build of these cars. After painting the cars, I airbrushed a coat of Pledge Future Shine Wood Floor Finish (undiluted) onto those areas where I would be applying decals and then let it dry for a day. (Many years ago, I prepared artwork for all of the YV cars that I expect to ever build and had decals printed by Rail Graphics.) Once the decals were applied and had set for a day, I airbrushed a flat coat over the whole car prior to weathering. Weathering was a combination of airbrushed oversprays of Floquil Earth and a little Grimy Black, Bragdon Enterprises chalks, and Prismacolor colored pencils. I feel that the final cars accurately duplicate the prototype cars as they might have appeared in 1939. [14, 15, and 16].

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I mentioned that I read the article about National Lead Company leasing the old Yosemite Portland Cement plant in the early 1990s. Ten or so years later, I received an email from an environmental engineer in charge of the clean-up of the old YPC plant. Subdivisions were encroaching on all sides and it finally became worthwhile to demolish the plant and build homes where the plant had produced Portland cement for 18 years. He contacted me because he had discovered traces of lead (considered a hazardous material by then) on the site near what had been the bagging and warehouse operations. "Did I know why?" he asked. I remembered what I had learned several years earlier and gave him the bad news. ☑

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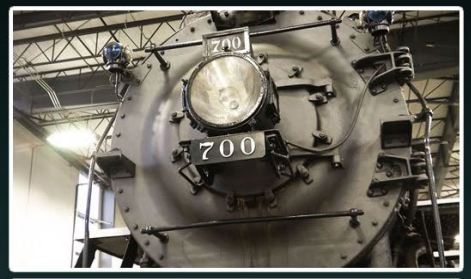

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WHAT'S NEAT WITH KEN PATTERSON

column

KEN PATTERSON

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PREPPING FOR THE NMRA NATIONAL ...

WE OPEN THIS MONTH WITH A VIDEO INTERview featuring Model Railroad Hobbyist magazine editor Joe Fugate. Started in 2009, the Internet publication is almost six years old now, with in-depth articles and videos covering all aspects of the model railroad hobby.

The NMRA national convention is coming to Portland OR this year, and that's Joe's home base. He is getting his home layout ready for the upcoming layout tours, where you will be able to register to visit or even operate his layout. Joe also talks about TrainMasters TV, and what a great job Barry Silverthorn is doing producing that monthly subscription-based show for the magazine.

▶ PHOTOS AND VIDEO OF SUPERB MODELS

1. Interview with Joe Fugate.

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Jeff Meyer stopped by to shoot some photos for the Weathering Shop Facebook page of this beautiful HO scale Athearn PS2893 covered hopper. It's blocked out into a Penn Central paint scheme, and soon to be "patched out" for Conrail. Jeff used artists oil paints to get the rust and weathering effects on this car using photos out of a Morning Sun book.

2-3. Jeff Meyer's shots.

Mike Budde appears in this month's video with a load of automobile frames loaded on two Accurail flat cars. He built the styrene supports on the deck of the flat car and T girder frames to secure the load from the top. Intermountain chain and rigging details attach the load to the flatcars. The loads are by JJM Models and can still be found on eBay.

4-5. Mike Budde and his automobile frames.

This month I photographed the Fox Valley HO scale Milwaukee Road Hiawatha, from Atlantic 4-4-2 #2 to the beaver-tail observation car. This is a beautiful model to run fast, or just display on a shelf. Built to provide speed and comfort on the 410-mile run between Chicago and the Twin Cities. It made this run in an advertised 390 minutes, with an average speed of 62 miles per hour with stops. The Hiawatha was known to run over 100 miles per hour on straightaways. The model performed flawlessly in test runs on my layout. You can watch it perform in this month's video.

6. Fox Valley HO scale Milwaukee Hiawatha.

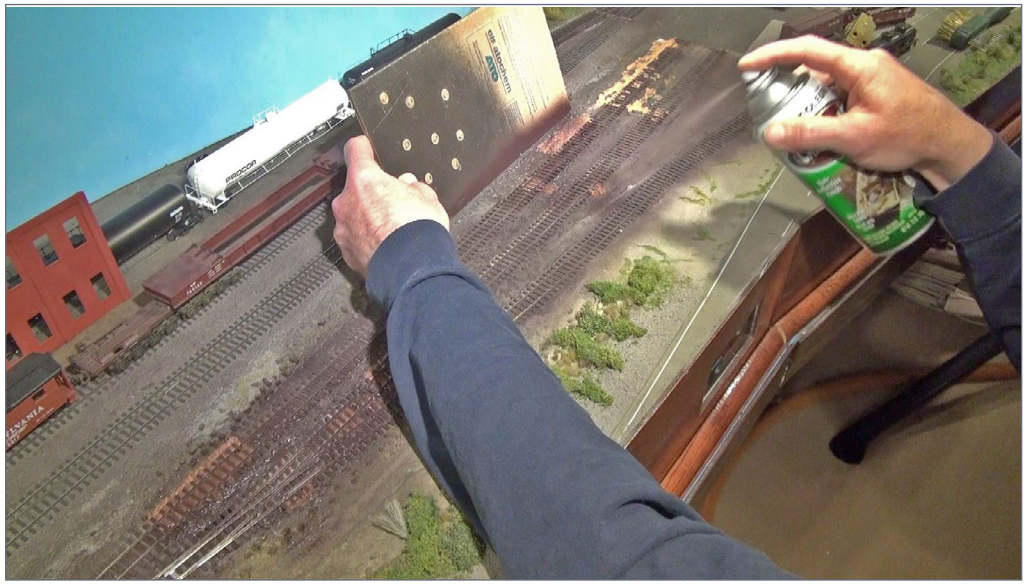
I talk again about Great Stuff Foam Pro, and all the great uses I keep finding for this stuff. I have found that spray paint does not attack and eat this foam like it does regular sheet foam. Because of this, it is very useful in tracklaying, where I have ripped up track on foam and needed to smooth the rough roadbed before laying new track. Some of my roadbed had holes in it from wiring, and digging out the old track. I filled these gaps by putting the stainless steel glue nozzle between the ties and squirting the foam under the track.

7. You can do most anything with Great Stuff Foam Pro.

The next day, after the foam set up and expanded a little to fill the voids under the track, I came by with a razor blade to cut off the excess foam and smooth it down with a wire brush, as you can see in this photo.

8. Cleaning up the foam.

I sprayed Rustoleum camouflage paint right out of the can on to the track and unsealed orange foam. This weathered the track and ties, and gave a neutral color to the entire area, preparing it for the dirt and ballast.



9. Spraying the Rustoleum camo onto the track and foam.

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- Pete V.

I covered the trackwork with sifted dirt that gives a nice weathered texture, to be further enhanced with an airbrush and some black paint. All of the dirt and track were oversprayed with Woodland Scenics "Scenic Cement" to glue down all the loose material. I then went over the entire area with golden brown 4mm static grass, to make the narrow gauge track disappear in the scene.

10. Covering the track with sifted dirt.

This is the scene finished off by mixing a few grass tufts from Silflor in with the static grass. You can watch me walk you through the entire process step-by-step, on video this month.

11. Finishing the scene.

This month I touch a little on foam shrinkage, and a section of my layout that has never been moved in eight years. This is the bluff section on my layout, where I modeled where I live. I cut the scene into two sections when I built it, using an old wood-cutting hand saw. The gap where the cut was made, an area where I can actually quantify foam shrinkage, has expanded over the years to just under ¼ of an inch. It has never affected track performance, but it's something I noticed and wanted to share in this month's video.

I am going to tear down this section of layout in the next few weeks and replace it with a little Colorado narrow gauge action. Watch for that in upcoming What's Neat videos. ☑

12. The finished scene from the air.

13. This shows the foam shrinkage over the years.

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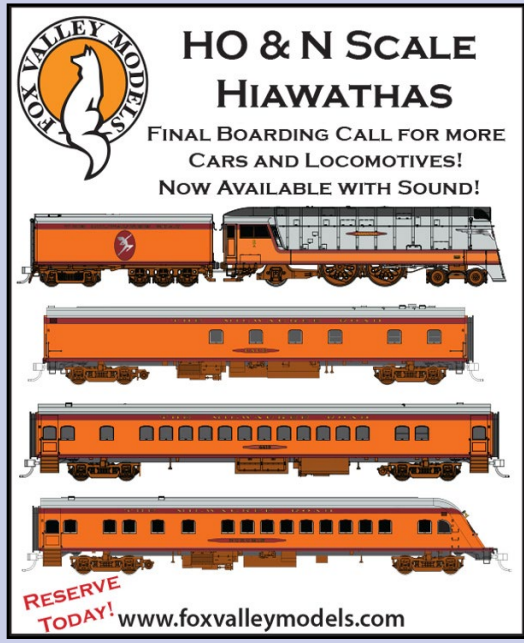

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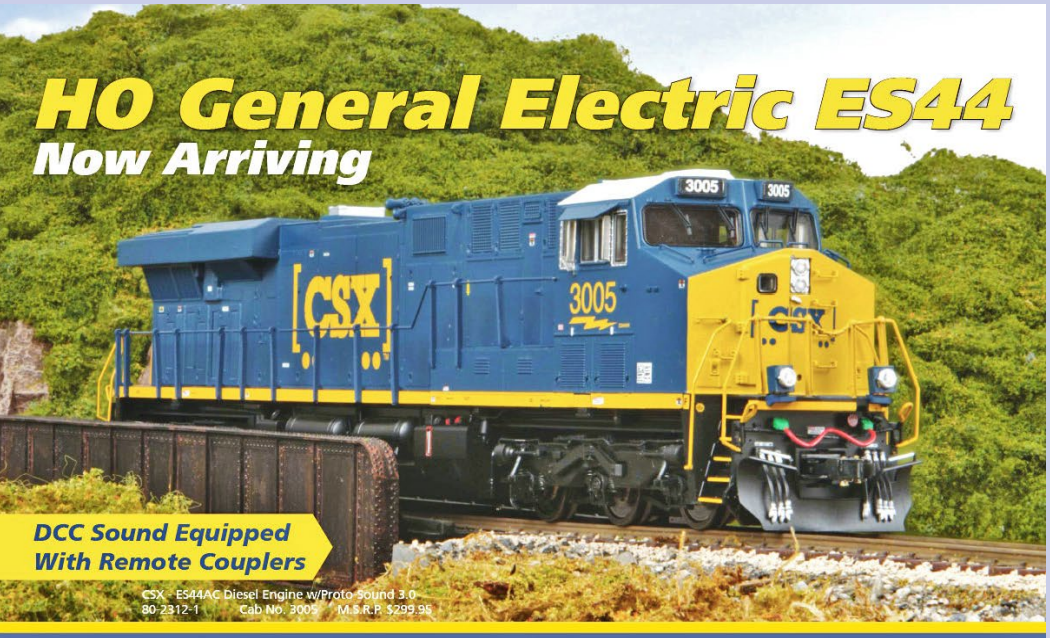

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IMAGINEERING
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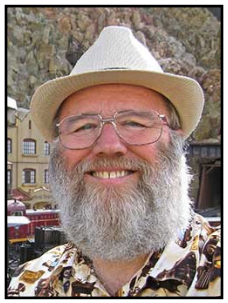

RAY R. DUNAKIN III

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The In-ko-pah Railroad
| Combining real-life elements to create a believable fantasy

Roughly 90 miles east of San Diego lies a region of stunning beauty and vast mineral wealth. Gold was found here as early as 1869, but the difficult terrain and harsh climate kept all but the hardiest prospectors at bay until 1880, when several small mining camps sprang up in the rugged mountains and canyons. Poor transportation and a lack of water made these operations unprofitable and most were soon abandoned.

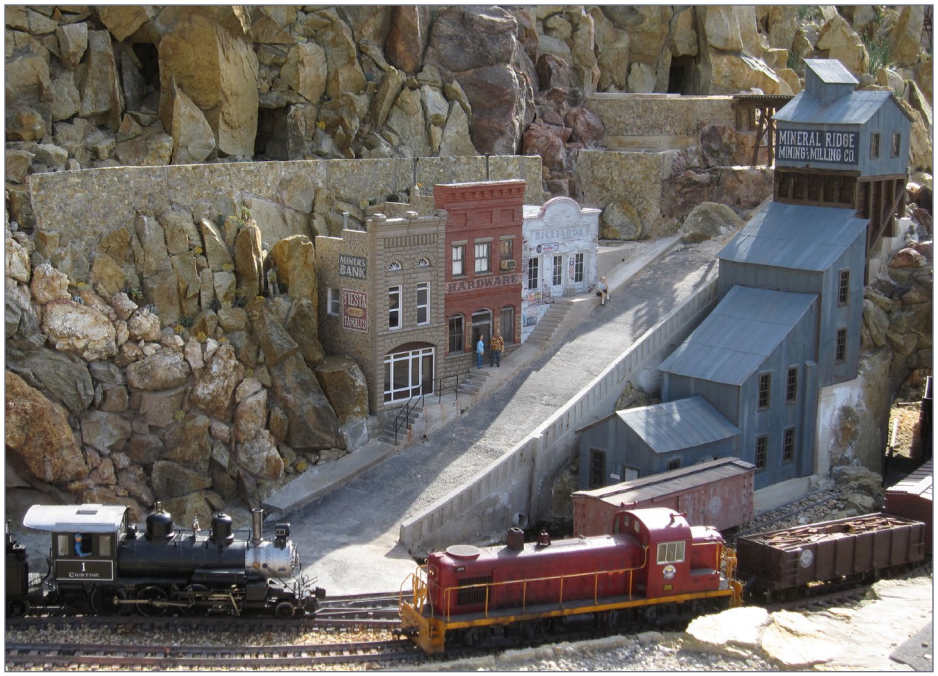
Richer veins were discovered in the 1890s. These new strikes were promising enough to entice investors to build a railroad to serve the mines. Narrow gauge was chosen over standard gauge due to the tight curves needed, and to keep costs down.

Carving a path through steep mountains of solid rock proved to be a Herculean task, requiring numerous tunnels, trestles, and bridges.

EXPLORING THE CREATIVE SIDES OF THE HOBBY

High summer temperatures and damaging flash floods, combined with the torturous terrain, resulted in costly delays. After a corporate reorganization, the railroad was finally completed a year late and over budget by $185,000, a significant sum in those days.

The In-ko-pah Railroad brought boom times to the area, providing transportation for the workers, material, and machinery needed to develop and work the mines. As the mines prospered, so did the railroad. Mining camps quickly grew into towns. New strikes were discovered, not only gold, but tungsten and other minerals. Though less glamorous, these ores kept the region and the railroad in business during the war years when gold mining was shut down as non-essential.



1. Intricate scratchbuilt structures form the town of Mineral Ridge.

As the years went by the railroad's fortunes rose and fell with the booms and busts of the mines. Somehow it always managed to hang on through the bad times. In later years tourism became an important source of revenue, along with shipments of bottled mineral water from a local hot spring. Ore shipments resumed as modern mining and milling practices allowed many old mines to become profitable again.

Except for the description of the terrain, *all of the above is pure fiction.* The desert at the western rim of the Imperial Valley is a truly incredible place of jumbled rock hills, steep mountains, deep gorges, and a unique mix of flora and fauna. But there are no significant mines, no mining towns, no mills. The only railroad tracks are those of the standard gauge San Diego & Arizona Railroad, which merely passes through the area via the Carrizo Gorge.

I first saw this land of rugged beauty as a teenager and have loved it ever since. I also had the opportunity to hike the SD&A tracks through Carrizo Gorge dozens of times during the '70s and '80s. Here I encountered dramatic scenes of railroad tracks clinging precariously to the sides of cliffs, stretched across spindly wooden trestles, and passing through numerous tunnels. It's a route as historic as it is breathtaking, for little has changed since the railroad was built. Even some of the original rails are still in place, 100 years after they were first spiked down. Seeing such an interesting segment of railroad in this fantastic desert setting was very memorable, and I have long dreamed of creating a layout in this locale..

I also wanted to model time-worn mining towns, and mines – both active and abandoned – like those I've seen on my annual trips to Nevada and the Mojave Desert. Scratchbuilding detailed structures is one of my favorite aspects of the hobby and would be a major focus of my layout.

Many of the mines and mining towns I've visited were once served by railroads. However, these railroads tended to have short lives, had a limited variety of rolling stock, and lacked the spectacular desert scenery I was so fond of. Some did little more than transport ore from mines to mill. Of course it's possible to build a model railroad based on any of these prototypes, and several of them would be an excellent choice for the right modeler – but not me. I wanted more than what these real-life railroads had to offer.

Fortunately we're not limited to modeling "what is" or "what was." We can also model "what if..."

2. A train passes over a stone arch bridge at Grandt Cliff, in the upper reaches of Cora Canyon.

In my case, it was "What if the rugged desert area at the rim of the Imperial Valley had been blessed with great mineral wealth?" Major strikes of gold and other ores would have completely altered the history of the region. Mining would have drawn people into this otherwise forbidding desert with its harsh climate and difficult terrain. Towns would spring up around the most promising strikes. The need for transportation would have led to the creation of one or more railroads that did more than just pass through.

This railroad, or railroads, would have been built at an earlier date, and for a very different purpose, than the real-life SD&A. It's very likely that a narrow gauge would have been employed, to cut both the cost and the time of construction, as well as to better accommodate the tight curves through the canyons. The tracks would have twisted back and forth through the canyons and up the mountainsides in order to reach the various towns and mines.

This alternate history is more than just a way to rationalize modeling mines and mining towns in a place that never had either one. (Not that I need to justify it to anyone but myself!) It also serves another, more important purpose. I find that imagining how the railroad and its environment might have come about helps me to model them more realistically, more believably. The history tells me something about what kind of buildings there will be, what styles of architecture, how much things will be aged and weathered, etc.

It's been said that a model railroad tells a story. The alternate history behind my railroad is what Hollywood calls "back story." It's the things that happen prior to, and leading up to, the events in a film. Each character has a past that shaped who they are in the film. Some of it may be revealed in dialog, flashbacks, narration, etc. Other parts of a character's back story may be known only to the writer, as an aid in creating a believable character. The film's

setting may have a back story too, particularly when the setting is pure fiction. For example, the worlds of "Star Wars" and "The Lord of the Rings" have extensive back stories that make for a richer, more textured story.

Creating a freelanced model railroad is just as much a work of fiction as making a movie. Its story must be logical, or at least true to its own internal logic. If it is haphazardly thrown together without rhyme or reason, it won't be believable. The back story is a guide to keeping it logical and believable. The back story doesn't necessarily have to be highly detailed, nor is it necessary to work it all out prior to building the layout. You can start with the basic premise and flesh it out as you go. You just have to remain within the "logic" set up by the premise.

Limitations and compromise

Designing and building the layout is where desire slams head-on into reality. Real railroads span vast distances, real mountains are enormous, and real towns sprawl across large tracts of land. It's not often a modeler can fit everything he wants into a layout, even in the smaller scales. Some things must be eliminated, and what's left is usually compressed. Accessibility and maintenance needs place further restrictions on what can be accomplished in a given space.

I'm modeling in 1/24th scale, which is HUGE. Fitting anything in is a challenge. The space I had available was 50 feet wide by about 20 feet deep. That sounds pretty big but it fills up really fast in this scale.

My layout is also outdoors, which complicates things further. It's on a steep slope which almost completely eliminates access along the rear of the layout. A path from end to end, through the middle of the layout, takes up valuable space but is vital for access. Tunnels can't be reached from under the layout, as with traditional

3. The Cliffside Mine is perched precariously on Grandt Cliff.

indoor benchwork, so I had to find a way to access them within the layout, without marring the scenery. And of course, everything on the layout requires special materials and construction in order to withstand constant exposure to the elements.

If you're modeling indoors, the specifics of constructing an outdoor layout are probably of little interest, and there's no need to go into detail here. But the point is that, indoors or out, regardless of scale, we all face issues of space and practicality that dictate the limits of our "dream layouts."

To aid in designing the layout, I made up two lists. One was a short list of "must haves," the features that I couldn't do without:

4. The town of Dos Manos. All the structures on the In-ko-pah Railroad feature authentic architecture and realistic weathering.

- Mountainous desert scenery
- A loop of track for continuous running, long enough that it would take a train several minutes to complete the loop
- Some sidings and passing tracks
- Plenty of tunnels, trestles and bridges – I especially wanted some mountainside trestles, like those in Carrizo Gorge
- Several mines and mine buildings
- Miner's cabins
- Two or three towns, with at least a few buildings each
- Some long-abandoned structures and ruins
- All footpath and tunnel access hidden from the normal viewing angle

Most of all, the layout had to be visually interesting and photogenic!

The second was a "wish list" of features that would be nice to have but I could live without if there was no way to fit them in. This included things like an engine house, fueling and maintenance facilities, one or more mills to process ore from the mines, a quarry, a hot springs resort, a bottling plant, and a fireworks factory. I have one mill now, but that's the only thing from the second list that made it onto the layout. Everything else is located off the layout, in the unmodeled portions of the railroad that exist only in my imagination.

The setting

The scenery consists almost entirely of real rocks – many tons of them – carefully mortared together to emulate the appearance of

the Carrizo Gorge, Jacumba Mountains, and In-ko-pah Gorge. It's not a perfect replica – some of the real life formations could not be accurately reproduced with the rocks available to me. But it captures the overall essence, and the textures and colors of natural stone are hard to beat.

Of course, it takes more than just terrain to set the scene. Even a rocky desert landscape such as this one needs plants to be complete. At first I tried using some miniature cacti and succulents – the obvious, and seemingly only, choice for an outdoor layout. But it still didn't look right. For one thing, even the smallest live plants were still much too large. Just as important, they didn't look at all like the kinds of shrubs and cacti that are typically found in the area I was trying to model.

5. A train stops for water at Dos Manos tower. The trestle in the background supports tracks winding up the mountainside.

6. The railroad has several mountainside trestles like those in Carrizo Gorge.

If I was going to model this area in a way that was believable and recognizable, I would need scale plants, Moreover, they would have to look specifically like some of the most iconic plants from the region. Even the stereotypical saguaro cactus would be as out of place here as a magnolia in the Pacific Northwest or a redwood in Texas.

This part of the desert has a very distinctive mix of plants, with some very unusual features. The cacti are mostly chollas (especially the cuddly-looking but hazardous Teddybear cholla), barrel cactus, beavertail, and hedgehog cactus. Shrubs include sagebrush, brittlebush, creosote bush, indigo bush, and the almost alien-looking ocotillo. A major succulent is the agave, which produces large, bright yellow flowers on a tall stalk. Down in the canyons one can find

7. Mountains of real rocks make up the terrain, such as this scene in Serenity Canyon.

8. Scale ocotillos, brittlebush, and other desert shrubs bring the landscape to life.

smoke trees, desert willows, catclaws, and mesquite. Fan palms cluster around desert springs.

It took some trial and error but eventually I came up with ways to model ocotillos, Teddybear chollas, barrel cacti, beavertail cacti, brittlebush, sagebrush, indigo bush, and some small, generic shrubs. These scale plants are somewhat impressionistic due to the limitations of working with materials that have to withstand constant exposure to the elements, but they're still very effective. What was once a mountain-like rock pile suddenly becomes an identifiable place, with a sense of scale that had been sorely lacking. I modeled

9. A long wooden trestle over Serenity Canyon is painted in the same reddish-brown shade used by the SD&A.

10. This miner's cabin was modeled after a real cabin in Ione, NV.

most of the plants in bloom, adding a touch of color to the otherwise harsh landscape as well as providing a visual clue to the season.

I've already made and installed at least two to three thousand scale plants on the layout. I will be making and adding many more of these plants as time allows. I'm also working on ways to create additional types of plants, such as agaves and yuccas. There are still a few live plants remaining on the layout but eventually these will all be removed and replaced with scale miniatures.

The In-ko-pah Railroad borrows more than just scenery from the SD&A. I've also adapted some of that line's iconic features. For instance, most of the wooden trestles in the Carrizo Gorge were originally preserved with a brownish-red paint. So too are the trestles of the In-ko-pah Railroad. The tunnel portals are a modified version of the style used in Carrizo Gorge, and the water tower is a

replica of the SD&A's old tower at Dos Cabesas siding, just east of the gorge.

The structures

I've been exploring and documenting the mines and mining towns of Nevada and the Mojave desert for almost 30 years. I've drawn on that experience to design, build, and weather the buildings, mines, and other structures on the layout. I've also used Google's image search to find additional structures for inspiration or to resolve questions I had about period construction.

All of my buildings are scratchbuilt. So far only one, an old miner's cabin, is an exact replica of a prototype. A few other buildings were

11. The steep town site at Mineral Ridge is inspired by real mining towns.

12. The fireman does a little sightseeing as the train passes through Dos Manos.

loosely based on prototypes, some combine elements from one or more real life structures, and the rest are freelanced. But even the freelanced structures are designed to match the architectural style, construction methods and weathering of period structures typically found in the Great Basin and Mojave deserts.

Finding room for the buildings has been a particular challenge due to both the limited space and the mostly-vertical terrain. To find realistic ways of meeting this challenge, I've looked beyond Nevada, to places like Jerome and Bizbee in Arizona, and Bingham City, UT. These former mining towns were wedged into narrow canyons and perched on steep slopes.

Conclusion

By combining elements from various sources, I've created a layout that is unique, full of character, and visually dramatic. Because everything is grounded in reality, the completely fictional world of the In-ko-pah Railroad has a high degree of realism and looks believable. ☑

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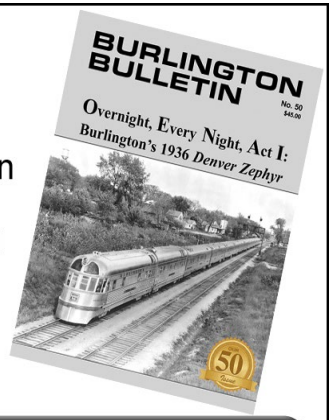

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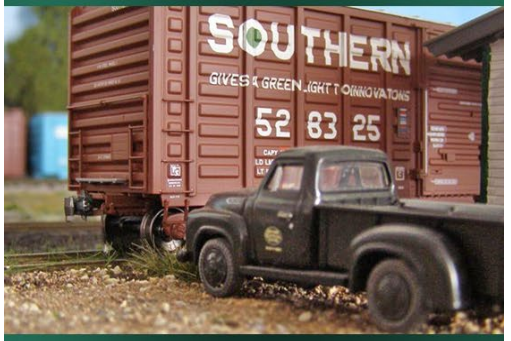

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Realistic Conifers *you can make yourself*

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1. CP Rail Engine model by Luc Comtois.

BY PASCAL LATULIPPE

Big creativity with little things at a small price ...

I WAS ABOUT 15 YEARS OLD WHEN I ENTERED the world of miniature trains (HO scale). I lived behind the Canadian National main line, and like everybody, I was

impressed to see all the locomotives passing by. That's where my interest in trains started.

Soon enough, I figured out that not only the trains interested me, but everything else that surrounded the trains. I was fascinated with the idea of miniaturizing all I saw.

It frustrated me that people didn't care all that much about the look of their dioramas. When I visited some layouts, nothing looked real. People seemed to prefer playing with trains rather than making the dioramas look realistic.

When I turned 18 years old, I put my passion for model railroading aside. Finally, in 2012 after a biking camp vacation in Arizona, my passion for the hobby was rekindled!

Every day when I did my bike training near Lemon Mountain in Tucson, AZ , I saw a parade of locomotives on the Union Pacific. This really caught my attention and ultimately triggered a renewed interest in the hobby.

As soon as I came back from my vacation, I began to Google model railroading, and saw the new DCC innovations, and how sound decoders had progressed.

Wow! I thought to myself, this is serious stuff! Still, for me, all this technology advancement was secondary, because my priority was still to make realistic diorama scenery.

I made myself a little 2'x4' diorama with a tunnel and bridge. When I got to the part of providing trees for it, nothing I could buy in stores or on the Internet looked real to me.

Then one day I went to an Ottawa, Canada train show. I met a guy there who made his own conifer trees for his layout using a kind of fiberglass filter material. His name was Luc Comtois (a friend now) and he inspired me to make my own realistic trees. I started to believe it was truly possible!

The next day, I eagerly started working on my own trees. What a disaster that turned out to be! I was so discouraged.

So I started asking myself some questions. Am I working with the right materials? Are the colors good? Is the bark thick enough? Maybe the dead branches are a little too small?

As I tried to make some trees by myself again, through further exploration, I came up with the following system.

Pascal Latulippe

Pascal Latulippe is 38 years old, and lives in Rosemere, QC Canada. Besides modeling, he also enjoys his other hobbies, road biking, and wine tasting. He owns a business (Platre artefact) that creates plaster moulding, dome, fireplace, column and architectural items. ■

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STEP 1: Preparing the trunk

Buy a square wood dowel 1/2” by 1/2”, and cut it around 10” long. Then start trimming the top with a strong knife to taper it to a point.

2-3. Square dowel that is trimmed down to the proper shape.

STEP 2: Texturing the bark

To make the bark, I cut a little 3/8”-thick, 6”x6” plywood block and drove 3/4” nails through it. Then I used this block to scrape the tree trunk up and down a few times to create the texture of the bark. Wear some gloves!

4-5. Scrape the shaped dowel with this nailed block.

STEP 3: Handle for the trunk

To get a good grip on the tree trunk, make a hole in the bottom of the tree trunk, and stick a nail in it for a handle.

6. Preparing a handle for the trunk for easier gripping.

STEP 4: Preparing the trunk for branches

To make the dead branches, I made holes all around the tree near the bottom. I left a 1-1/2" to 2" space at the bottom of the trunk, and start making holes up the trunk at about 1" increments or more.

7. Hand-drill holes all around the dowel.

STEP 5: MAKING THE BRANCHES

To make dead branches, I used some Caspia (see the picture). To reduce the cost, you can use any dried weed you can find that looks about the same. Prepare about a dozen branches.

8. Use Caspia or some other appropriate weed material.

STEP 6: GLUING THE BRANCHES

Dip the branch tips in white glue or carpenter's glue. Place them in the trunk holes from top to bottom.

9. This photo show the placement of the individual branches.

STEP 7: PAINTING THE TRUNK

I spray-painted the trunk with a can of Rust-Oleum flat black paint. Afterward I used gray matte spray paint, and delicately sprayed wispy bits on the trunk to add highlights to the bark. Leave the black in the groves to enhance the bark texture.

10-11. Use flat black and a light mist of gray matte for the trunk coloring.

STEP 8: LOCATING FOLIAGE

I used a Natural Air brand furnace filter for the main tree foliage. These can be found at Walmart, Lowe's, or Home Depot. Do a Google search first, as not all stores have this filter in stock. I did not find these filters outside the U.S, but you can also make the foliage from hoghair or coconut mat that can be found in tree nursery stores. This material is sold in mats, 1" thick and 24 x 36" wide.

Dip the mat in water, then in matte medium, or in dilute 50/50 glue. This is only necessary if you cannot find furnace filter.

12. Natural Air furnace filter.

STEP 9: CUTTING THE FOLIAGE MATERIAL

Cut out irregular pieces of the furnace filter or hoghair/coconut mat, about 1”x1” to 2-1/2”, then form the pieces into star shapes of four to seven points for large branches, or two or three points for smaller branches.

13-14. Cutting and shaping the furnace material.

STEP 10: PAINTING THE FOLIAGE

Paint the foliage clumps brown. I used a matte brown camouflage spray paint from Rust-Oleum. Paint them on both sides, and then let them dry.

15. Painting the furnace filter pieces.

STEP 11: Installing the foliage

Put some white or carpenter's glue in the center of each star and gently slip them from the top of the tree trunk to the bottom. Start by using the biggest star shapes, then use alternating smaller and slightly larger pieces as you go up, to make the tree look irregular.

Conifer trees don't always grow regularly. If you go for a walk in the forest and look around, you will see how various conifer stands look different. If a conifer grows between two other trees, the middle conifer will start to grow taller because it wants to reach the sunlight.

There are also some trees that grow beside rivers, and because of the wind, they tend to bend outward. If you represent more variety of trees like this, your diorama will look more realistic.

16. Placement of the foliage.

STEP 12: Trimming the ends of the branches

Trim the ends of the tree branches to remove any odd branch shapes that don't look realistic. The trimming helps improve the realism of your conifers, so don't skip this step.

17. Trimming the trees to shape.

STEP 13: ADDING TURF

Use any brand hair spray, and start by spraying a good coat of it underneath the branches of the tree. Then sprinkle on some turf foliage material. I use Woodland Scenics, or Scenic Express fine turf soil t1341 to create some shadow.

Add more turf on the top of the branches, but use a lighter color to create highlights. I used Green Blended Turf t1349 from Woodland Scenics. Add another coat of hair spray, and immediately add a last coat of fine turf weeds, t1346, but just lightly. Doing a variety of colors creates a more realistic tree. The foam colors you use can be varied if you're modeling other seasons.

When you are done, spray the whole tree to fix everything in place. Let dry at least 24 hours.

18-22. Applying the turf.

STEP 14: FINAL TRIMMING

All that is left to do is a final trim with a good pair of fine scissors. Take your time, you want the tree to look as realistic as possible. It's really this easy!

23. Final tree with the trim job completed.

STEP 15: FINAL SCENE

With this tree-making method, you can create interesting trunk variations like these if you like, to add more realism to your conifer forest scenes. ☑

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24-25. Examples of finished trees with specialized trunks.

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YES, IT'S A MODEL

compiled by
DON HANLEY

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1. On a late Pacific Northwest summer evening in September 1973, the rhythmic sounds of chirping crickets are interrupted by the low grumbling of Burlington Northern C-636 4360 as she idles outside the locomotive shop. Her sister 4368 takes her turn inside for routine maintenance. Both locomotive are by Bowser Manufacturing. Darin Larabee photo

MRH'S MONTHLY PHOTO ALBUM

2. This photograph was taken while railfanning the Wabash's West Side Branch in Detroit in the summer of 1953. Fortunately the Pere Marquette boxcar was not positioned in front of the building, so I was able to capture its architectural details. The advertising on the building reflects the corporate history of Kelvinator, founded in 1916. The Leonard refrigerator was the high-end line created by the purchase of the Grand Rapids Refrigeration Company in 1926. In 1936 Kelvinator merged with Nash Motor Corporation, hence the roof billboard advertising the Nash automobile. The HO scale structure was built using Monster Model Works brick sheet, windows are from Micro Engineering and Tichy, and the advertising was taken from the web. The box-car is a Speedwitch kit. David Karkoski photo

3. An aspiring writer has his solitude interrupted as a rail bus slowly rumbles by. It is backwoods railroading at its finest. The rail bus is a On30 model made by Bachmann, and the track is Peco code 100. Martin Welberg of the Netherlands created and photographed the scene.

4. CN MLW RS-18 3631 is handling a short mixed freight westbound to Montreal at Bois D'Arcy crossing. Jazz De Loungueuil posted this photo in the MRH forum. The HO models are on his Bonaventure & Chambly layout. Weathering is with gouache and paint brush, and the loco is a Proto 1000 with DCC.

5. Snapshot: a quickly-taken photo ends up with a wealth of detail and information for our modeler. Forum member Jappe posted this photograph which is typical of modern railroading. The reefers are from Intermountain, and the SIECO box car is an Athearn Genesis. Jappe did the weathering with the usual fading via acrylics together with oils and chalks, and Dullcote between layers to create the look of heavily-used cars. Jappe used markers for the graffiti.

6. Ross Ames posted photos of this HO scale depot that he scratchbuilt. It is based on the South Pacific Coast's Agnew CA depot. In his words, "While I did not attempt to make an exact copy, I did try to get as close as I could."

Ross used Evergreen novelty siding for the walls, and Grandt Line window and door castings. He cut out Sierra Scale Models real cedar wood shingles one at a time and glued them to the roof. He finished the depot using Vallejo acrylic paints, and signs he created on a laser printer.

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Shaun Toman's UP Oregon Division

BY THE MRH STAFF

Photos by the MRH Staff unless otherwise credited.

Layout in a shed by a 30-something modeler who has loved the hobby since age 13 ...

1. Shaun Toman's Union Pacific Oregon Division models 2005 to present day, as indicated by yellow instead of red sill coloring of his locos. Shaun models the Pacific Northwest in a 10x12 foot shed, and from this photo you can see he's captured the look of the modern UP in the Oregon foothills superbly on his layout. *Photo by Shaun Toman*

MRH: Let's start with who you are and where we are.

Shaun: I'm Shaun Toman, and we're here at my home in Cornelius, Oregon. When we moved in – actually just a year ago this month – we came out here and saw this shed. Being a model railroader I went, "Oh wow, this could be perfect for my next railroad!"

2 (above). Union Pacific Genset #2727 switches out a cut of cars at Barnes Yard on a sunny afternoon.

3 (below). Union Pacific 5516 (GEVO), 8718 (SD70ACe), and 1955 (GP60 ex-SP) sit idle at Barnes Yard awaiting their next assignment.

Both photos by Shaun Toman

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So here we are on a sunny day a year later, checking out my HO scale Union Pacific model railroad in my shed.

MRH: So what are you modeling?

Shaun: Basically it's the modern Union Pacific. By modern, I mean 2005 to present day. My locale is the Pacific Northwest Oregon area. While it's freelanced, I am trying to model the Pacific Northwest look correctly.

MRH: How did you get your start in the hobby?

Shaun: When I got started, it would've been through my grandfather, Alex Toman. When I was maybe five or six years old, he found an old door from Goodwill and put down that green Astroturf on it, with that old brass track, and those Atlas

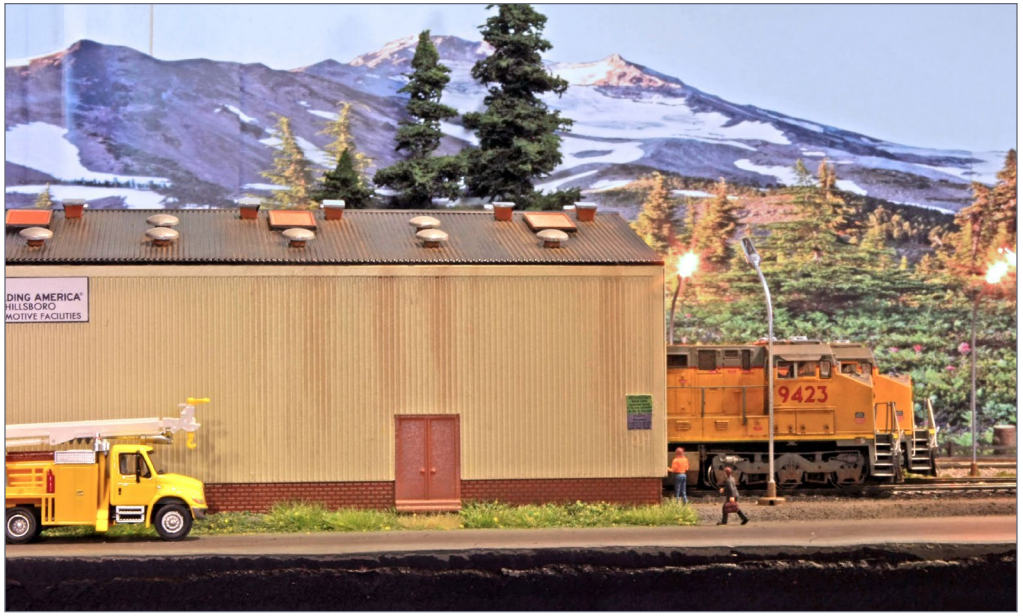
girder trusses were you can make the track stand off the ground. That was my first experience with model railroading. Obviously that was more toy trains.

My first serious railroad would have been when I was 13. I built a 10' x 11' railroad in my bedroom. It got so serious we had to pull my bed out of the room and my mom had to buy a hide-a-bed that I slept in all through high school. My model railroad pretty much engulfed my whole life!

So I've had the itch ever since. Of course I did rollerblading and RC cars as a teen, but model trains were always first for me.

I did get out of the hobby from 2010 to 2013 or so. Oh, I was still watching train videos and would go railfanning, but I didn't have a model railroad for about three or four years. During that time I was really busy with my band because I am a full-time musician. I also met my wife at the time, so I was traveling back-and-forth to Salem where she lived, which didn't give me much time for model

4. The last of the sun disappears behind the ridge line and dusk approaches, causing the lights around the Oregon Division UP locomotive facilities to start coming on. Shaun's photo backdrop does a good job of making his layout-in-a-shed look larger than it really is.



5, 6, 7. UP GE Dash-8's 9423 and 9414 idle at the Oregon Division engine facilities in Hillsboro, awaiting assignment. In the background, the last of the evening sun reflects off Mount Hood, one of the most prominent peaks in the Oregon Cascade range.

railroading. But once we got married and moved into this place, I'm back at it full-swing again.

MRH: Did the shed here where you built your layout need a lot of preparation?

Shaun: No, it just happened to be a perfect space for a model railroad. At first it was just studs with no carpeting and no insulation, so I added carpeting and insulation to make it comfortable. And here we are a year later with a nearly complete model railroad in this shed.

MRH: What was the inspiration for the track plan?

Shaun: Just my own experience from my previous layouts based on what I've learned works and doesn't work.

I was pretty limited, because this is only 10' x 12' or so. So there's not a whole lot of space for a much track. My thing, more than just running the trains, is doing the scenery. You can see there's a lot of scenery packed into this small space.

MRH: When did you actually start this layout?

Shaun: I started this layout just about a year ago. That includes insulating the shed and building the benchwork and getting to the finished look it has today. All that in just a year.

MRH: Are there challenges to having a layout in a shed?

Shaun: Yes, there are. I belong to a round-robin group that does regular op sessions every week. When everybody shows up, there are probably seven or eight people in the group – and obviously you can't fit seven or eight people in here.

MRH: Has weather caused you any problems?

Shaun: A year ago at this time there was almost a foot of snow out here, which is a little unusual for the Willamette Valley in Oregon. In ordinary winter weather, it's not much of a problem because I've insulated the shed and have it heated. In normal winters it doesn't get that cold here, but if it ever does get really cold, I can turn the heater on low and it keeps it pleasantly warm.

But if it does get unusually cold, like down into the 20s, I bring all my locomotives into the house. Cold weather like that probably wouldn't hurt them, but you never know.

"For my own modeling I prefer present day. I can go online and find a photo of a hopper I bought, and weather it to match that current prototype."

MRH: What does a typical operating session in this shed look like?

Shaun: Actually, we can fit about four guys including myself: so five total. There are usually a couple two-person crews, each with an engineer and brakeman. Op sessions start at 7 PM on a Thursday night and we're usually out of here by 8:30 or 9 o'clock – maybe sometimes 9:30.

For a small railroad, I've got a lot of switching. Everybody has a great time – these are guys who have their own garage railroads too, but when they come over here they say they have more fun with this one than they have back home because they have a lot of work waiting for them on their own layouts!

MRH: Do you aspire to someday have a basement-sized layout?

Shaun: Not a basement-size, no. That is just overwhelming. But I wouldn't mind something a bit larger. Maybe like a 20' x 20' – to me that's an ideal size. But for now, this is where we live and the space works. Who knows where we will move to next?

MRH: What else do you think needs to happen with this layout? Does it have a future outside of this shed?

Shaun: Probably not. I build pretty fast – in just over a year I built this layout. I actually built this all in sections, each about four feet long. I could take it out in pieces – and I could possibly incorporate some of it into a new railroad. But realistically, I would probably just start from scratch.

I like to dabble in photography as well. I have always felt good lighting is important – for photography good lighting is a must. I've used inexpensive track lights from Home Depot with CFL daylight bulbs. "Three on a tree" and I have maybe a dozen lights total. It's perfect for this small space.

MRH: You seem to have a lot of 1950s decor around, yet you are modeling 2005?

Shaun: My wife and I are both what you call "rockabillies" and we're big into 1950s culture. We've decorated most of our house in a 1950s motif. We have old 1950s furniture, and I have an extensive record collection from the 50s. For my full-time job I play in a band called the "Twangshifters." We travel all up and down the West Coast – we've even played Vegas and been on the same show ticket as Jerry Lee Lewis.

We started the band in 2009, so we're finishing our fifth year now. Yes, music has always been a huge part of my life, but model railroading came before all of that.

A lot of my modeling influence as to era has been other model railroaders I know who also model modern. I have more interest in modeling diesels than in steam engines. While I truly enjoy seeing the earlier eras – for example, I have friends who model

8. UP GP60s 1955 and 1964 pull a local freight out of town along the foothills of the Cascades, en route to a nearby industrial area to do some switching. These large conifers (made by Shaun's good friend Pete Vassler of Canyon Creek Scenics) accurately capture the look of the big trees typical of the Oregon Cascades.

1920s logging railroading – for my own modeling I prefer present day. I can go online, for example, and find a photo of a prototype hopper I just bought, and weather it to match that current prototype. I especially enjoy doing that kind of modeling.

My layout's not 2005 specifically. I think 2005 was when the FRA mandated the yellow reflective tape on all the boxcars, so you'll see that a lot on my rolling stock. I'm not using decals – it's actually RC plane pinstripe tape. I cut it with an X-Acto knife and since it has adhesive, I just stick it on the cars and it looks just like the FRA prototype striping.

9. In this closeup of ex-SP GP60 renumbered to UP #1955, you can clearly see the post-2005 striping on the sills. Massive fir and cedar conifers loom in the background – a common sight in the Cascade foothills of Western Oregon (trees made by Pete Vassler).

For years on the Union Pacific Railroad, the sill stripe on all locomotive walkways has been red, but now it's yellow. My locomotives are up-to-date with yellow sills, so that's why I say it's 2005-to-present-day. Before 2005, these paint scheme practices were not mandated.

I like being in the hobby now that it's 2015. I can meet model railroaders all over the world now through Facebook. On Facebook, there's a lot of different groups of model train guys – some post pictures of their Tyco stuff and others have fabulous scenery, and everything in between.

I kept seeing all that all mixed together, so I created my own Facebook group and we're up to about 250 members in the last two months. It's just called the HO scale Prototype Models Group. It's just basically what it says: guys who model exact prototype. That's more what I'm into doing – things like all the weathering, detailing the locomotives more accurately and all that.

Detailing locomotives is one thing I just started doing recently, and it's taking up a lot of my time in the evening.

MRH: So the layout is 10' x 12'. About how many feet of mainline you have?

Shaun: I've never actually figured that out – but if you stretch the layout out, it's probably a 50-foot mainline.

MRH: What's your rationale for this particular subject for a layout?

Shaun: The Union Pacific has been a big influence on me and that came mostly from a UP modeler that owned a hobby store out this direction. I would go to his store almost every day after school when I was in high school. It was Bill Metzger – and he had a lot of UP at his store, the "Evergreen Roundhouse," and he is still known to this day as an avid modeler of the Union Pacific. Many modelers know Bill Metzger because he has written articles, and he's a huge influence on me electing to model the Union Pacific Railroad.

MRH: Did it take a lot of iterations to get to this final track plan?

Shaun: I just drew it up and showed the track plan to our round-robin group. They threw in their input, you know thing like, "don't put a siding there" or "make this siding longer." I revised the track

10. In this industrial suburb of Portland, Oregon, it appears there is a 1950s vintage car show underway. In the background, the local track crew prepares to do some track maintenance as UP's SD70Ace #8718 rumbles by.

plan with input from five or six different people, and it became what it is today.

Of course, since I started construction, it's changed still more. I've added staging out of the yard and moved some things.

MRH: What was the impetus for those changes?

Shaun: I like auto trains and I bought some autoracks, but I had nowhere to put them. The back wall of the layout was just scenery and some trees, so I was able to fit two tracks back there. I did that a few months ago – otherwise I'd have nowhere to store

my autoracks because they are 89-foot cars. In the last couple months I've added a five-track yard on a peninsula – it gives a whole new dimension to operations, which is nice.

MRH: Has the layout progressed as fast as you would like?

Shaun: Yes! As I was saying earlier, I started on this layout about a year ago this month. As you can see, there's a lot that looks completed, so that's a lot of layout progress in a year. I know model railroaders who work on the same layout for 20 years and they don't even have scenery yet!

I'm to the point this layout looks fairly complete, so yes it went as planned. It started out as a different era, though.

I had 40-foot boxcars and I had SD24's and SD9s. I started out modeling the Union Pacific in 1982, the pre-Missouri Pacific buyout and merger, but then I got the urge to go modern again.

MRH: What's the layout height?

Shaun: The layout is about 48 inches high, but then with the track roadbed and cork, the rail height is approaching 49 inches. But that's one thing I would consider changing – the layout height.

I'm 6'-1" and I prefer looking at model railroads closer to eye level because that looks the most realistic. If I were doing this again, I would build it up a little higher.

Still, with what I had to work with, the ceiling is kind of low. That could cause a problem with scenery. Some of the trees I have are really tall, so that might not work so well if I made it too much higher. What I'd probably do is put it at about 55 to 58 inches.

MRH: What control system are you using and why did you choose it?

Shaun: What I've got for now is some hand-me-down Digitrax UT-1 throttles. I have five of them, plus I've got a DT-400 master throttle. It's all Digitrax – the Zephyr system. For this size railroad, it's perfect. If I ever change systems, I might switch to an NCE for ease of use and for easier programming, but I'm using Digitrax now, and it works fine.

MRH: What kind of decoders do you use in your locomotives?

Shaun: More than half the locomotives have SoundTraxx decoders with Tsunami sound. That's just how they have come stock. A couple others have QSI sound, and another is just a standard DCC decoder with no sound.

There's no specific sound decoder that I seek. I may buy a new Athearn locomotive and it comes with a Tsunami decoder already in it – that's kind of standard with Athearn. I'm not too picky on the whole sound thing. You can go in depth on nitpicking the various sounds, but I'm perfectly happy with what I have.

MRH: So you run a lot of sound locos on the layout?

Shaun: Yes, the typical op session has three trains going at once – one guy in the yard switching, and two crews out switching on the main – and all those have sound. In a small shed, those can get kind of loud.

One guy jokes about having to bring his ear plugs, it's so loud in there. I've got them adjusted so they're not turned up all the way. If a hundred-percent is full volume, I have them set at about 60, so they're actually turned down considerably.

11. It looks like #8718 is paired with UP's 1982 heritage Missouri Pacific wearing the Screaming Eagle paint scheme, with some auto racks in tow. Again, we see Shaun's photo backdrop, done by printing out photos and pasting them on hardboard painted bluish-gray.

MRH: How often do you host regular operating sessions?

Shaun: This particular group that I am part of – there's been different incarnations of the group – originally started with some guys meeting out at Bill Metzger's shop in Forest Grove, the "Evergreen Roundhouse."

It started with two or three people meeting for coffee and then going to somebody's house afterward and running trains. When I was 13 and had my railroad in my bedroom, they all came over one night and were amazed that a 13-year-old kid could build this much railroad.

12. As we follow 8718, it rolls on through town, crossing industrial side streets and rolling past a line of empty auto racks on the siding. Shaun has captured the look of a well-worn asphalt side-street grade crossing, complete with a multitude of cracks in the aged road.

I've known all these guys since then. Now I'm 32 and we've got the same group going. There are five or six guys in the group who rotate hosting each week. I host about twice a month. We can fit five people in here comfortably and have a real op session!

MRH: What's the biggest challenge you faced with this layout?

Shaun: I would say the biggest challenge came because I decided to change eras after I had laid all the trackwork. A lot of the newer cars are obviously not 40-foot boxcars, and most modern locomotives are not four-axle, they're six.

13. Another view of UP #8718 at the grade crossing. In the background, you can see the Portland suburbs.

A couple of the curves would not handle the larger equipment, so I had to redo them. Other than that, it all went together pretty easily.

MRH: What do you like most about this layout?

Shaun: What I like most about this layout is, it's separated from the house. I can come out, turn on my music, and maybe run a train or work on some scenery. I don't have to bother my wife – it's just very relaxing to be able to come out here and have my own man cave kind of place (laughs).

MRH: What do you like least about the layout? Would you do anything differently if you could?

Shaun: What I like least is the change of seasons. After all, it is in Oregon and with the layout outside in a shed that's heated and

14. To appreciate how small this layout is, it's worth noting you're seeing just about 20% of the layout in this photo of Shaun doing some switching. Shaun's modeling experience and his eye for making a scene look larger than it is helps his layout feel larger than it actually is. Truly a well-executed small layout that looks like a lot of fun to operate.

insulated and it serves it purpose. But it's not as well put-together as someone's home!

If I were to do anything differently, I would probably do a completely different track plan. I have no idea what that would be, but I do know it would be different.

MRH: Would you still model the UP?

Shaun: Yes, but I would add some things like more passing sidings and change the yard around.

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

Shaun: My least-favorite part is crawling underneath and doing the wiring. I think a lot of guys would say that. But what motivates me is, once it's done I can run trains!

But it's a necessity; you have to wire it. And I have plenty to do even on this small layout since I've got feeders probably every three feet.

MRH: Have you ever considered doing a different scale or gauge?

Shaun: No, not really. It's true in this small of a space, I could have a killer N scale railroad. I could do a lot more, but that would

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mean selling my HO stuff and buying more N scale stuff. But no, I haven't really thought about it.

MRH: How do you narrow your layout focus and not just do the Variety Central? How do you do a layout well?

Shaun: For me what makes the layout look more realistic and uniform is using the same color tones throughout the entire railroad. Not mixing up too many different colors of ground foam: some guys will mix up a lot of odd colors of ground foam, for instance.

Another thing that bothers me is when a layout has two separate towns just a foot apart. To me, just modeling one city throughout a layout this size is more prototypical.

What really polishes the layout is putting up your fascia board and painting it a nice darker color so the layout pops. Next is having good lighting, because really, you're building a glorified diorama and the focus is the trains and scenery.

As far as doing a layout well, just fine-tuning and making sure all your trackwork is functional, making sure all the wiring works, having proper lighting, and all the little finishing touches – that's what does it for me.

15. Recently Shaun decided to add a peninsula into the middle of the room, and he put a small yard on it. He says adding the yard has transformed layout operations and increased the enjoyment of the layout several-fold.

I must also credit the assistance I've received from modelers like Pete Vassler. Pete's been an integral part of all my railroads, helping me with his fantastic conifer trees and showing me a multitude of tips and tricks since I was 15 years old.

16. GP9 #193 switches the Agro-Grain facility. In the background are the east Portland suburbs and the Oregon Cascades. It's hard to believe this scene is just over 12" deep.

MRH: Speaking of setting the scene well, what did you use to build your backdrop?

Shaun: My backdrop's just Masonite hardboard painted a kind of sky-bluish-gray. Some modelers make a mistake with the sky and paint it bright blue – on a model railroad, a bright blue sky just doesn't look realistic.

The sky should be more of a blue-gray, so my backdrop is sort of a grayish blue. For all the photos on my backdrop, I created those using Photoshop. I just Googled "Pacific Northwest landscape photo" and grabbed the photos I liked.

I split them into thirds on 11" x 17" pieces of paper and printed them out. I cut the sky off – if there are trees at the top, I just take an X-Acto knife and cut out all the little branches and then glue them on my sky drop. That's how I did my backdrop.

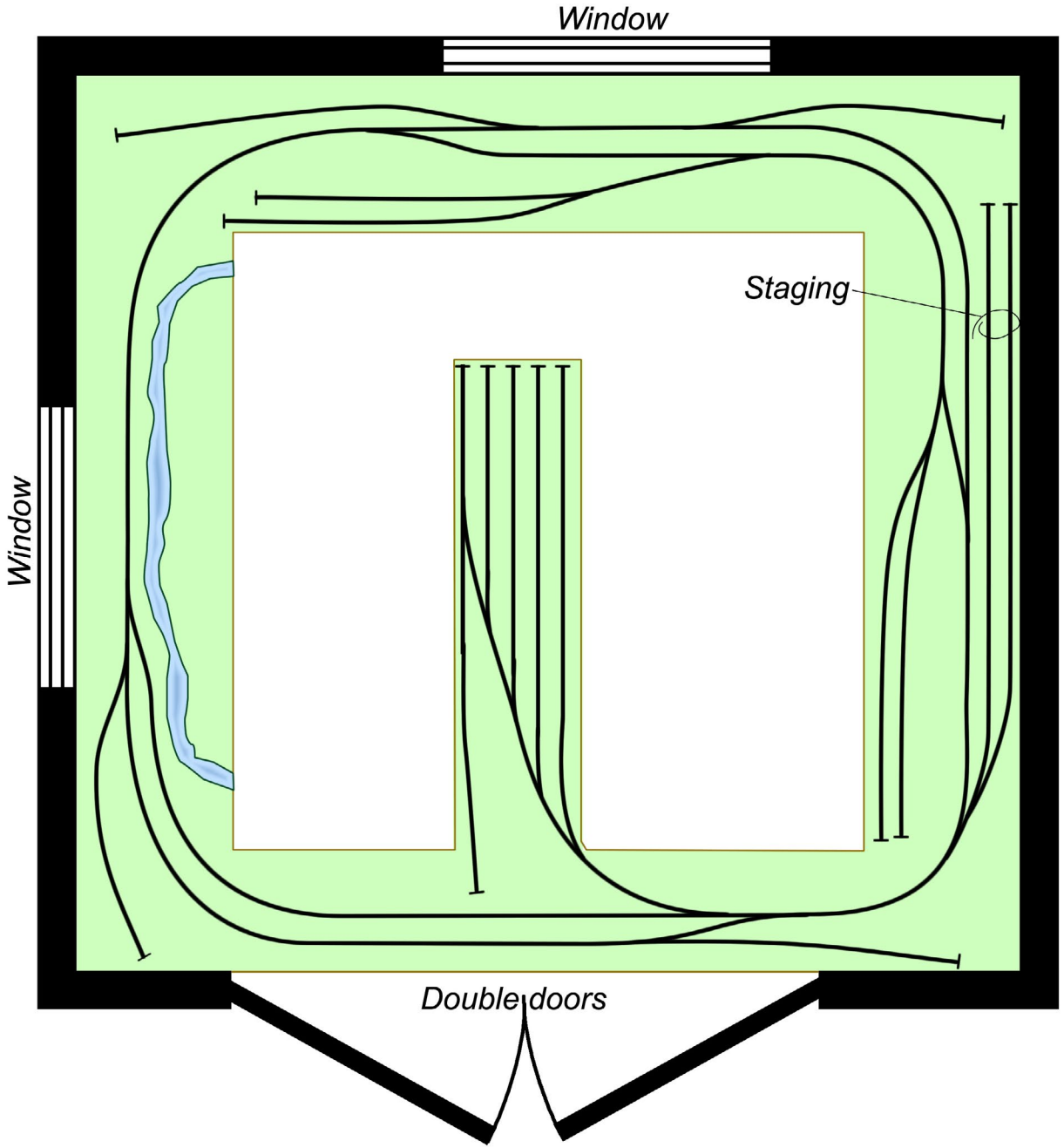
MRH: What advice would you give to someone starting out in the hobby of model railroading?

Shaun: When I was building my last railroad, I was in my mid-20s. The neighbor kids would come over and hang out all night long, watching me do scenery and what-not. As far showing them how to get started in the hobby, I'd have them start out on a 4x8 layout, which is how I started.

They don't necessarily have to pick a favorite railroad – just go out and get a locomotive that looks appealing. I would help them wire it up, to make sure all the track work performed well. I'd just tell them to go at it and have fun.

Buy some scenery materials and make a mountain, put some ground foam down. That's how you start! I didn't know how to do any of that when I started. Just get started and do it, that's my advice. ☑

General Info	
Owner	Shaun Toman
Scale	HO
Type	Along-the-walls
Size	11'-5" x 12'
Era	2005-to-present-day
Roadnames (Locos)	Union Pacific (14)
	UP in Missouri Pacific heritage paint (1)
Construction	
Benchwork	Open-grid with pink foam on top
Backdrop	Photos mounted on hardboard
Scenery Base	Plaster cloth over pink foam
Track	
Type	Atlas Code-83 laid on pink foam
Mainline Run	50' (0.83 scale miles)
Staging	Two 8' tracks
Ruling Grade	Mainline = 0%
Mainline super-elevated	No
Minimum Curve Radius	24"
Number of Turnouts	20
Turnout Type	Mainline = #6; Yard = #4
Electrical	
Controller	Digitrax Zephyr
Decoders	Mix of Tsunami and QSI with sound; one non-sound
Equipment	
Locomotives	15
Rolling Stock	~60



In this month's subscriber bonus downloads, get under-construction photos of Shaun's layout!

Visit bonus downloads now!

Shaun Toman's HO scale UP Oregon Division

11'-4" x 12'

You can see Shaun's layout at the Portland NMRA Convention this August ...

PORTLAND DAYLIGHT EXPRESS
NMRA NATIONAL CONVENTION
2015

SHAUN TOMAN

Shaun Toman was introduced to the hobby of model railroading at age 6 by his grandfather, Alex Toman. By age 13, Shaun had built a bedroom pike that almost took over the entire room!

Shaun has built a number of other small HO layouts since that time, and thanks to mentorship by Bill Metzger, he is a died-in-the-wool UP modeler. His latest layout, the HO UP Oregon Division, fills a 10 x 12 foot shed behind his house.

Shaun and his wife Tessa live in Cornelius, Oregon and enjoy their "Rockabilly" lifestyle. Shaun is a full-time musician in the Twangshifters band. ■

ADVERTISEMENT

Adding customized sound
TO A BLUE BOX ATHEARN DIESEL

BY MICHAEL WOLF

Upgrade a classic to 21st century standards ...

LOOKING THROUGH MY LOCOMOTIVES FOR A potential DCC upgrade, an older "blue box" Athearn Fairbanks Morse H-24-66 Train Master [1] caught my attention. The locomotive had little run time, was unrepresented on my DCC roster, and looked like a good candidate. My upgrade plan was to improve the electrical conductivity, replace the motor, add LED lighting and install a customized sound decoder.

1. The upgrade candidate for this project is an Athearn Fairbanks-Morse H-24-66 Train Master.

The first rule of thumb for DCC conversions is "if it doesn't run well on DC, it's not going to get better with DCC." The locomotive had little (if any) run time, electrical pickup from all

Click here for reader comments

12 wheels, and did run reliably on DC. However, I wanted to improve the flow of electricity to the decoder and make it as bulletproof as possible – to see what I did, check out the following story, "Improving blue box Athearn electrical performance."

Choosing a decoder

For this project, I chose the Digitrax SDH164D decoder. With their SoundFX line of decoders, Digitrax provides a relatively inexpensive way for hobbyists to experiment, and customize sounds in their locomotives. The Sound Depot section of Digitrax's website at digitrax.com/sound-depot has a number of sound project files (.spj). New steam, diesel, and electric locomotives are added regularly.

While I don't have the audio or programming skills to create a new sound project, I'll show you how easy it is to tweak an existing sound project to match your prototype. An additional resource for anyone interested in tinkering with Digitrax sound decoders is the Digitrax Sound Yahoo group. Additional resources and sound files are available in the group's files section, and I've found the group to be very helpful in learning more about decoder programming, troubleshooting sound issues, and as a source of additional sound files and custom sound projects.

For this project, I started with the sound project titled "Fairbanks Morse Opposed-Piston Switcher #1860" on the Sound Depot webpage. The prime mover sound files are from a Fairbanks Morse 38D-6 engine. The H-24-66 had a 12 cylinder

2. The speaker is tucked into the top of the cab and is barely visible from the outside.

version of the motor (38D-12), which is close enough for me since there are no operational Train Masters from which to record new sound clips. The ferryboat horn that came with the sound project will need to be changed to match the PRR prototype I am modeling. My research revealed that most PRR TMs were equipped with the Leslie S-3L horn. A quick posting to the Yahoo Digitrax Sound group and within hours, one of the members provided several 8-bit sound files for a Leslie S-3L.

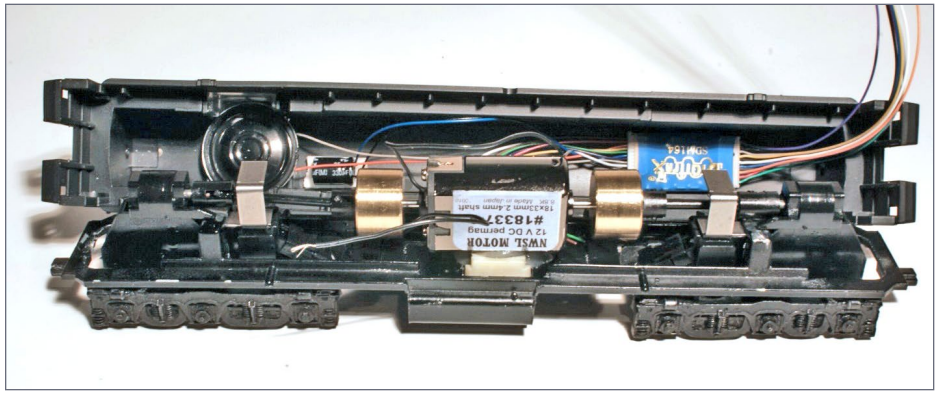
Decoder installation

Decoder installations are not new to the pages of MRH, so I'll just hit the highlights. The basic steps for this install are: find a location for all the components, install the LED lighting, and make the electrical connections.

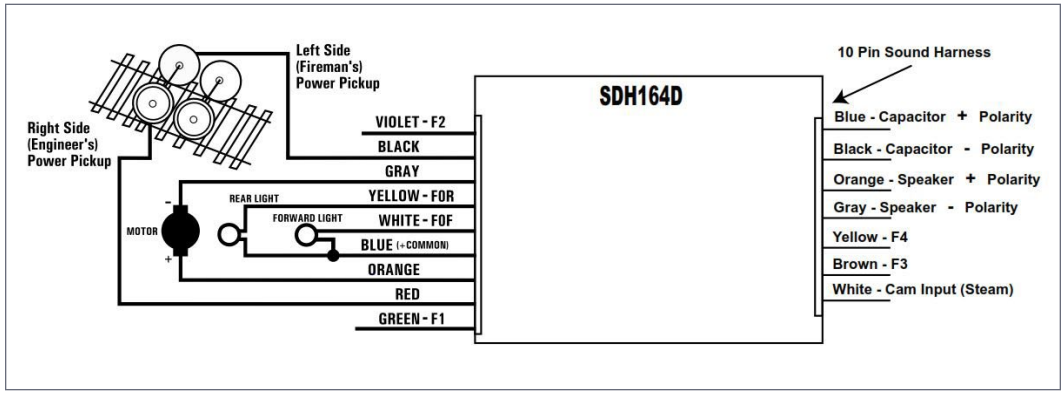
The SDH164D comes with a 28 mm/32 ohm speaker, a 330 µF capacitor, and wiring bundles on each end of the decoder

package. Fortunately, the Train Master shell has a fair amount of space above the motor and drive train. I modified the single-piece window glazing by removing the non-visible center portion, so the speaker would fit into the top of the cab. It is barely visible from outside [2]. I used double-sided foam tape to completely enclose the back side of the speaker and to attach the speaker to the roof.

Although not a perfect speaker enclosure, it does a pretty good job of ensuring the sound waves produced by the front of the speaker cone are not absorbed by the opposing sound waves from the back of the speaker cone. There are plenty of pathways through the bottom of the chassis for sound to come out, so no additional holes are required. Double-sided foam tape was also used to attach the capacitor to the top of the hood, in an open area above the drive shaft. Finally, I located the decoder above the other drive shaft and carefully reinstalled the shell so the components had adequate clearance [3].



3. Prior to installing the lights, check the positioning of all the components in the hood to ensure adequate clearance for the drivetrain.



4. Digitrax SDH164D decoder pin configuration. Digitrax instruction manual

Once the wiring for the lights was installed in the top of the shell, I used a blob of silicone sealant to hold the decoder in place.

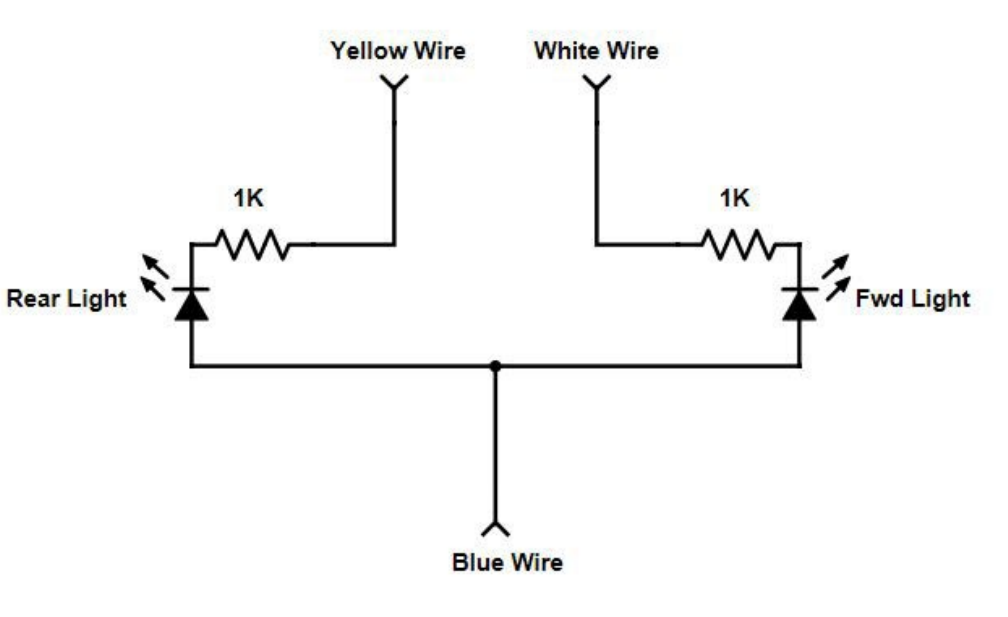
Installing lights

I prefer warm white LEDs, and used standard 5 mm round package bulbs (T-1¾) for this project. Pennsy ran most of its diesels, including the Train Master, long hood forward. As shown above, the SDH164D has a wiring harness on each end. The wires leading to the speaker and capacitor are the 10 pin sound harness. The forward (white), rear (yellow) light function and common (blue) leads are on the other end [4]. After slipping a piece of shrink tubing over the white lead, I soldered a 1K ohm ¼ watt resistor to the shorter lead (cathode) of the LED and then to the white lead. I repeated this process with the yellow light function wire and the rear LED. Finally, I soldered and shrink wrapped the longer LED leads (anode) to the blue (common) wire from the decoder. The schematic for the light wiring is shown below [5].

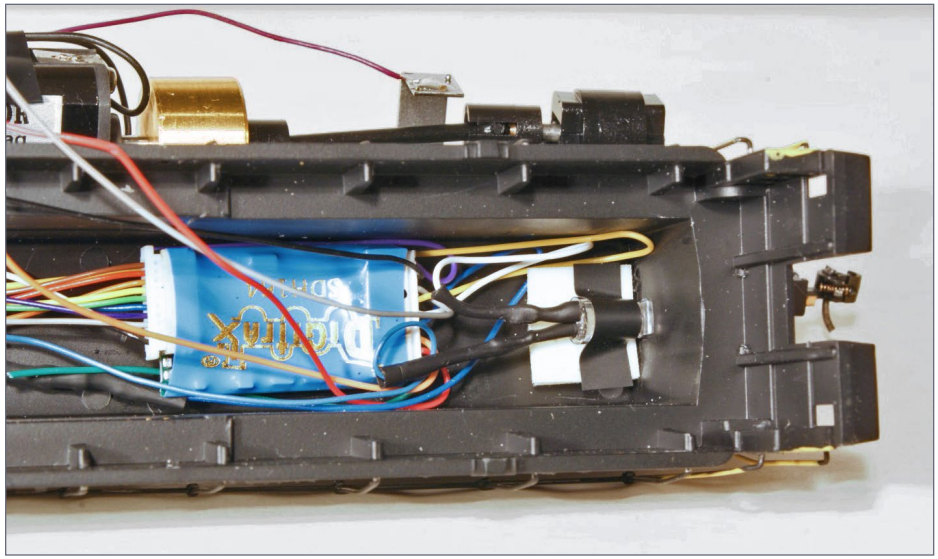
The resistors can technically be attached to either lead but as Bruce Petrarca pointed out in his "DCC Impulses" column on DCC lighting at mrhmag.com/magazine/mrh-2012-03-mar/dcc_impulses it is important that each light have its own resistor. Double-sided foam tape is used to center the LEDs on the back of the headlight [6]. A dab of silicone sealant is used to hold the lights securely in place, and a small piece of black electrical tape is used to ensure light does not leak into the shell. Photo 7 shows all the components secured in position and ready for the final wiring connections.

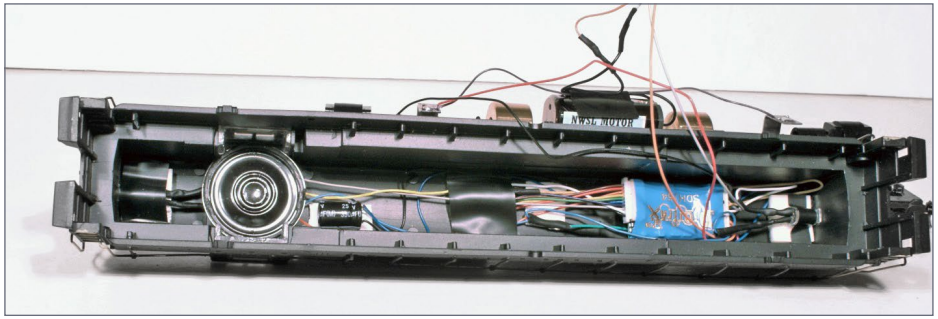
Finishing up

The red and black decoder wires are now connected to the truck/chassis jumpers installed earlier (see the Athearn tuneup story),



5. Wiring schematic for the front and rear headlight LED lighting circuit.





6. White double-sided tape is used to shim and align the LEDs to the headlight lens.

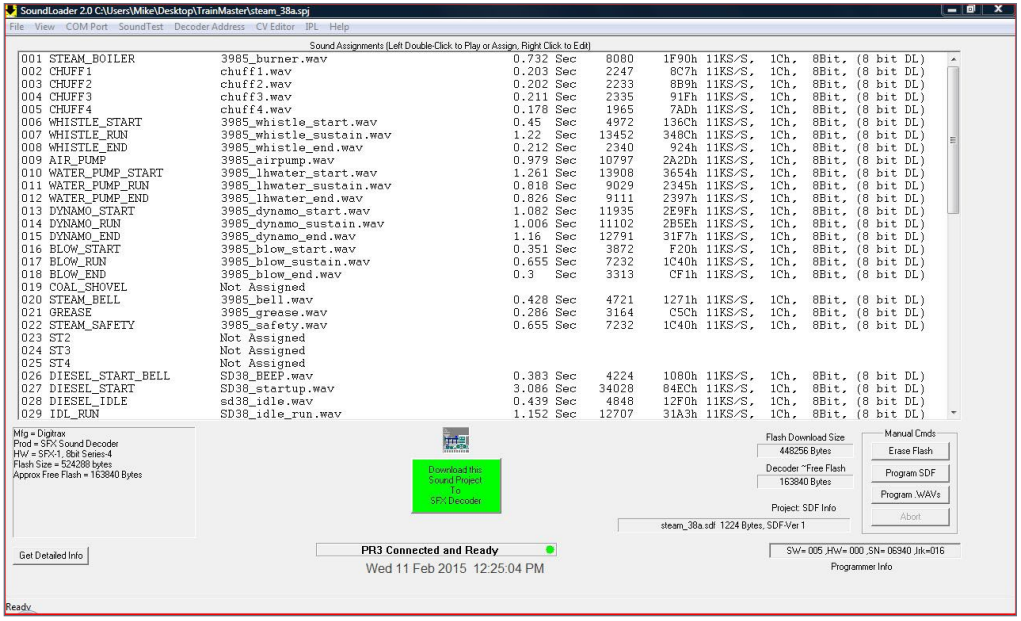
7. Final configuration of all components in the hood.

and the gray and orange wires were connected to the motor leads. All were shrink-wrapped and carefully positioned to avoid the drivetrain when reassembling the shell and chassis. Kadee couplers were added and the locomotive was ready for testing.

Programming

A Digitrax PR3 or PR2 SoundFX USB Decoder Programmer is required for uploading sound project files to SoundFX decoders. I use the PR3 as the interface between my laptop and a dedicated stand-alone programming track. For this project, I used two freeware software programs – JMRI DecoderPro and SoundLoader. The Bill of Materials has more information on these and other programs you can use with programmable Digitrax decoders.

SoundLoader v2.0 is a free download available from the Digitrax website and is required for uploading sound projects to the decoder. After downloading, installing and configuring for the PR3, we are ready to start. I downloaded the sound project file



8. SoundLoader screen shot with the initial sound project file loaded.

007 RUN_IDL	1860_run_idle.wav	4.617 Sec
008 DIESEL_TURNOFF	fm1860_shutdown.wav	3.197 Sec
009 HORN_START	dash9_hornstart.wav	0.059 Sec
010 HORN_RUN	dash9_hornsustain.wav	0.711 Sec
011 HORN_END	dash9_hornend.wav	0.419 Sec
012 DIESEL_BELL	1860_bell.wav	0.505 Sec

9. Horn sounds to modify – items 009, 010 and 011.

007 RUN_IDL	1860_run_idle.wav	4.617 Sec
008 DIESEL_TURNOFF	fm1860_shutdown.wav	3.197 Sec
009 HORN_START	S3L_HORN 8bit Start A.wav	0.576 Sec
010 HORN_RUN	S3L_HORN 8bit Sustain A.wav	0.352 Sec
011 HORN_END	S3L_HORN 8bit Decay A.wav	0.672 Sec
012 DIESEL_BELL	1860_bell.wav	0.505 Sec

10. Modified sound project with new horn sounds.

FairbanksMorse_OP_6.spj from the Sound Depot website and the Leslie horn WAV files from the Yahoo group into a folder on my laptop. I opened the sound project file with SoundLoader [8]. SoundLoader allows you to see, hear and modify the sound files used by the programmer who created the sound project.

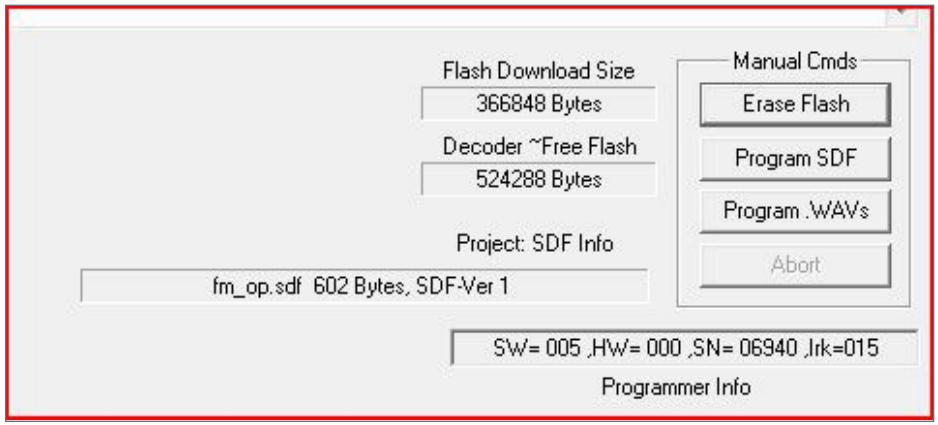
To sample each of the sound files, highlight the sound file, right click, and select PLAY SOUND. The sound files I'll change are the horn sounds (numbers 009, 010, and 011) [9]. To conserve the memory space on the decoder, sustainable sounds like the horn are actually three sound files strung together by the decoder program – a beginning, a middle (held as long as the horn is called for) and an end.

Fortunately, the Digitrax Sound group member who recorded the sound had already chopped the horn into three pieces: S3L_HORN 8bit Start A.wav, S3L_HORN 8bit Sustain A.wav, and S3L_HORN 8bit Decay A.wav. Changing them is simple – right click, select Assign Sound File..., and select the new .wav file from the file folder I created for this project [10]. I saved the sound project with a new name (FM TM w Leslie S 3L horn.spj)

and it was time for the moment of truth – reprogramming the sound file on the decoder.

First, a few notes on the sound projects on the SDH164D. From the factory, the decoder is loaded with both generic steam and SD38-2 diesel sound schemes. CV60 is used to switch between the two (CV60=0 steam; CV60=1 diesel). Only 512Kb of flash memory is available for the Sound Project file. In the lower right corner of the SoundLoader screen you'll note we are using 366,848 bytes for this project [11]. SoundLoader is used to erase the program data stored in the flash memory and for uploading the new sound project file components (see the Sidebar for a description of the components).

Although it's fairly straight forward, I've found it's best to follow the advice of experts. The Checklist for Programming a Digitrax



11. Lower right corner screen shot of SoundLoader showing the memory used by the sound project (Flash Download Size). The sound project cannot exceed the memory space available on the decoder. This screenshot was captured after I had erased the flash memory and the decoder's entire flash memory of 524,288 bytes is available (free).

SoundFX Decoder (see the last Sidebar) was adopted from a checklist created by John McMasters, a major contributor to the Yahoo Digitrax Sound group, and provides a foolproof guide to re-programming a Digitrax decoder. To watch me accomplish steps 1-10 of the checklist, check out the following video (youtube.com/watch?v=Kmy3Dk4jm-Q). After completing step ten, I switched from SoundLoader to DecoderPro to complete fine tuning the operation of the locomotive.

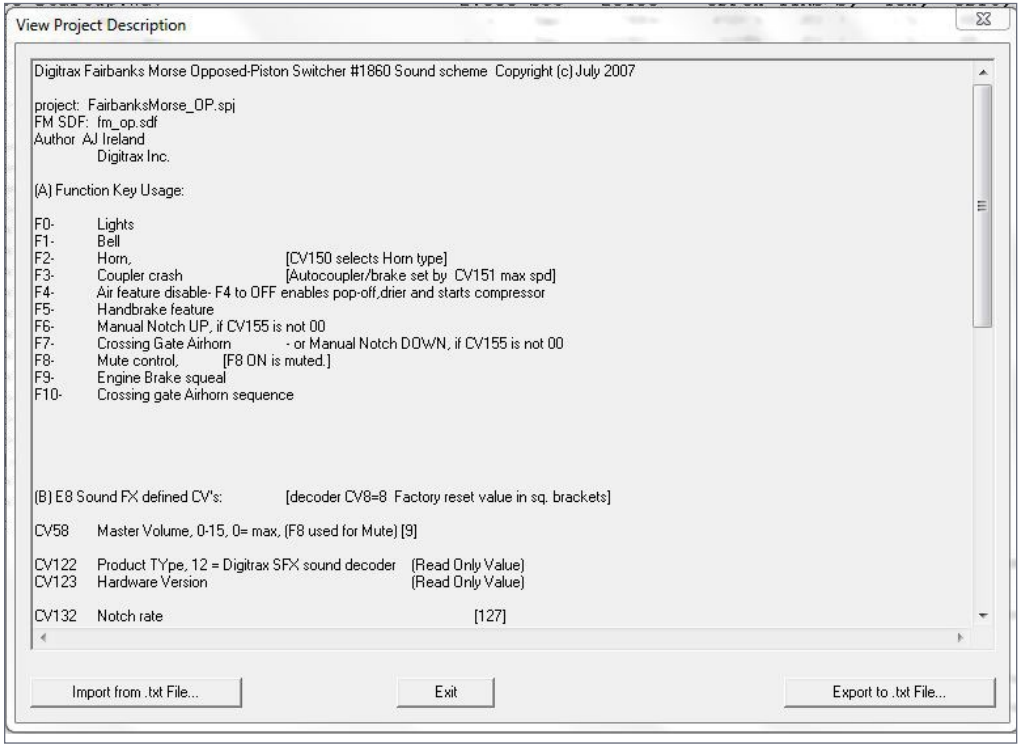
If you are serious about decoder programming, Java Model Railroad Interface (JMRI) DecoderPro is a must. JMRI is an open-source Java-based program which runs on Windows, Mac and Linux. While there are various components to JMRI supporting operations, control panels and signaling, the DecoderPro module significantly simplifies the modification of configuration variables (CV) within the decoder. Using DecoderPro, I adjusted the start voltage, top speed and momentum, the volume levels and the direction of travel. The direction of travel can be fixed by swapping the motor or track feed leads at the decoder, but with everything connected and shrink wrapped, a software change (CV29) was easier.

An important component of the sound project file is the text description written by the programmer. This .txt file can be viewed by using SoundLoader (Select View, View Project Description...) [8]. Within the text file, the author will include details about the program file useful to the user. Examples from this sound project include:

- F2 sounds the horn
- F5 activates the handbrake sound
- F6 is used for manually notching up the prime mover
- F7 sounds a road crossing air horn sequence
- Notching mode is controlled by CV155 (0=auto, 1=semiautomatic, 2=manual)

- CV150 selects the horn type (0=standard, 1=playable, 2=alternate horn)
- and much more

This project only scratches the surface of what is possible for a hobbyist interested in modifying the sound quality and performance of a sound decoder. Unlike many manufacturers, Digitrax has made its decoder programming language available for those who like to experiment with these programmable decoders. If you are interested in diving in and learning Digitrax's decoder macro language, you can create one-of-a-kind sound projects or further refine and improve existing sound projects.



12. Screenshot of the TEXT file viewer. The file can be exported as a .txt file and printed out for future reference.

13. Here's the completed loco on the layout and going through its paces. Sounds and runs nice!

To see and hear the completed Trainmaster in action, check out the video at youtube.com/watch?v=Z1-PwU0FzoU.

Note: *Since I completed this install, Digitrax has replaced the 4-series decoders with upgraded 6 series decoders (e.g. SDH166D and SDXH166D). These new decoders provide 4 (versus 3) sound channels (the decoder can produce four sounds simultaneously vs three), and 2 Mb of storage (vs 500 Kb). Each decoder has eight preinstalled locomotive sound sets. The "premium" SDXH166D features 16 bit sound files (vs 8 bit on the SDH166D and SDH164D). I'm using the "premium" SDXH166D for my current projects.)*

SIDEBAR
COMPONENTS OF THE DIGITRAX SOUND PROJECT FILE

For those interested in digging deeper into programming Digitrax decoders, here's a primer on the four components of a Sound Project File.

1. The main program SDF code. It is compiled into a HEX file from the Assembly Language (ASM) file using a Macro Assembler like the one listed in the Bill of Material (MPASM).

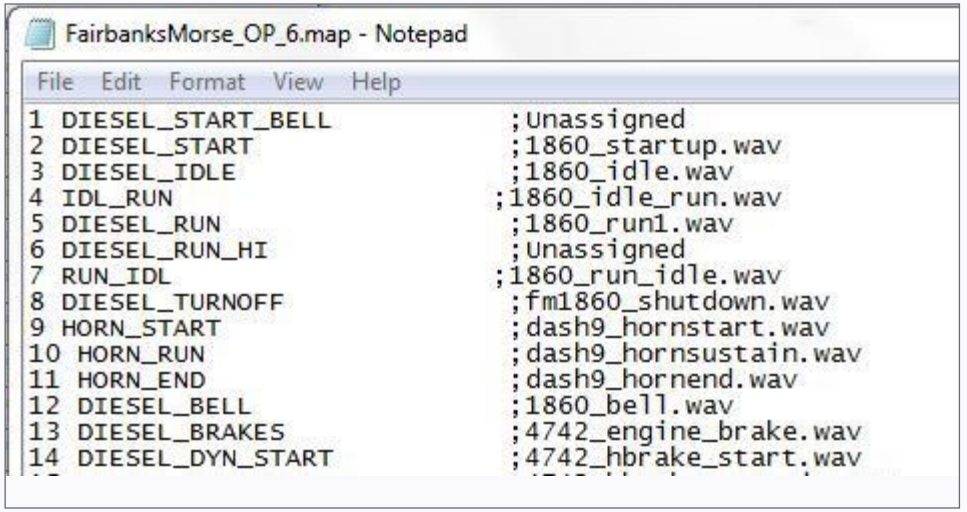
2. The Text file (TXT) which provides documentation by the author of the sound project. It also provides descriptive information which pops up when using SoundLoader (i.e. pop up descriptions of the F keys and default CV values). [See table.]

3. The MAP file that matches the sound clips to their identification in the SDF code. It can be viewed using SoundLoader (the two left columns) or exported and viewed with Notepad (see table).

4. The sound clips used by the project (in Microsoft WAV file format).

SoundLoader can be used to view the MAP and TXT file while SPJHELPER can extract all the components from an existing sound project file.

For more information on these components, Digitrax SDL macro language, SPJHELPER, and more complex decoder sound project modifications, refer to "All About Digitrax Sound Decoders" by Fred Miller (available in the files section of the Yahoo Digitrax Sound group). ■



14. An example of a MAP file. The MAP file matches the identification code used in the SDF code (i.e. HORN_START) to the specific wav file used to produce that sound (i.e. dash9_hornstart.wav). When we changed the horn wav files, SoundLoader updated the MAP file so the decoder would play the new wav file.

Bill of materials

Digitrax SDH164D decoder

Northwest Short Line 40"/110 tread, half axle, outside frame, bright finish wheelset (37139-4)

NWSL Replacement Motor 167-4

Resin core solder

Electrical tape

2 - Warm white, 5 mm LED (numerous suppliers)

2 - 1K ohm resistors

Double sided foam tape

Silicone bath and kitchen sealant, clear (GE Silicone II or others)

30AWG wire (multiple colors)

Shrink tubing – 1/16 and 3/32 inch

Hardware

Digitrax PR2 (via serial port) or PR3 (via USB) Decoder Programmer (the PR3 has been upgraded to the PR3XTRA).

Computer. JMRI and SoundLoader are available for Windows or Macintosh. (Many of the other programs only run in Windows).

Software

Several software applications are available to assist in viewing and modifying Sound Projects on a Digitrax SoundFX decoder. All of the programs listed are free/shareware. As a minimum, SoundLoader is required. To utilize SPJHELPER, the remaining programs are required. The Java Model Railroad Interface (JMRI) is also highly recommended for modifying a decoder's control variables (CVs).

SoundLoader v2 – Used to download the components of the Sound Project Files (.spj) to Digitrax SoundFX decoders. SoundLoader can also be used to replace sound files (.wav) in an existing project file. Also allows you to play the sounds while on the programming track using a simulated throttle screen and can be used to change CVs in the sound decoder. Finally, it can be used change 12 or 16 bit wavefiles to a smaller bit structure – sacrificing sound quality for smaller file size.

Download available at digitrax.com/sound-depot/soundloader.

Java Model Railroad Interface (JMRI) DecoderPro – Simplifies the job of configuring complicated DCC decoders by providing screens on which you can select the various options and values you want.

Download available at jmri.sourceforge.net.

SPJHELPER – Developed by Fred Miller, MMR, to assist in the development of macro assembly language code using Digitrax Sound Definition Language (SDL). It utilizes the other software listed below to modify sound files, modify text files describing the code, compile the program code into a HEX file, and download the code into the decoder. The program has two modes of operation: "Simple non techie" and "Nitty Gritties for programmer types."

An operator's guide and the software are available at fnbcreations.net/spjhelper. If not already installed, the program will assist in installing the other required components.

Audacity – A sound file editor. Used to fine tune a sound recording. Can also be used to divide a recording into individual sound files (i.e. start, sustain, and end of a horn sequence)

Download available at audacity.sourceforge.net.

WavePad – Another sound file editor.

Download available at nch.com.au/wavepad.

MPASM – Used to compile the program code into a HEX file.

Download available at microchip.com.

NOTEPAD++ – An alternate to WordPad or Notepad for editing TXT files.

Download available at notepad-plus-plus.org. ☑

MICHAEL WOLF

Photo by Lydia Wolf

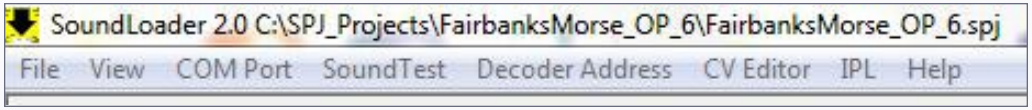
Mike's interest in trains began at an early age with Lionel trains at Christmas. By the time he was in high school, he built his first permanent HO scale layout. College, 23 years as a pilot in the U.S. Air Force, marriage and kids derailed his modeling but his interest in trains remained strong. After his military career, construction of the West Valley Union Railroad began shortly after moving to Ohio. Thanks to assistance from the Tuesday Night Gang, his modeling and operations skills have expanded a lot in the last six years.

Mike is a corporate pilot and flies around the world. His wife Julia, a daughter, and a son, support his hobby, vacation visits to train-related stuff, and the monthly Tuesday night ops sessions in the basement. When travelling on trips with extended ground time, he travels with a modeling project and his tools. If you find styrene scraps in the hotel carpet, Mike was probably there. ■

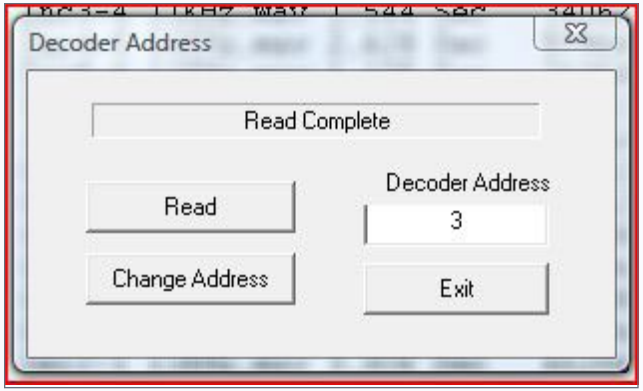
SIDEBAR
CHECKLIST FOR PROGRAMMING A DIGITRAX SOUNDFX DECODER

Begin by checking the basic operation of a newly installed decoder.

1. Open SoundLoader2.0 [A] and select Decoder Address. Read address. This should be a value of 3 for a new decoder. [B]



A. SoundLoader2.0 main tool bar.

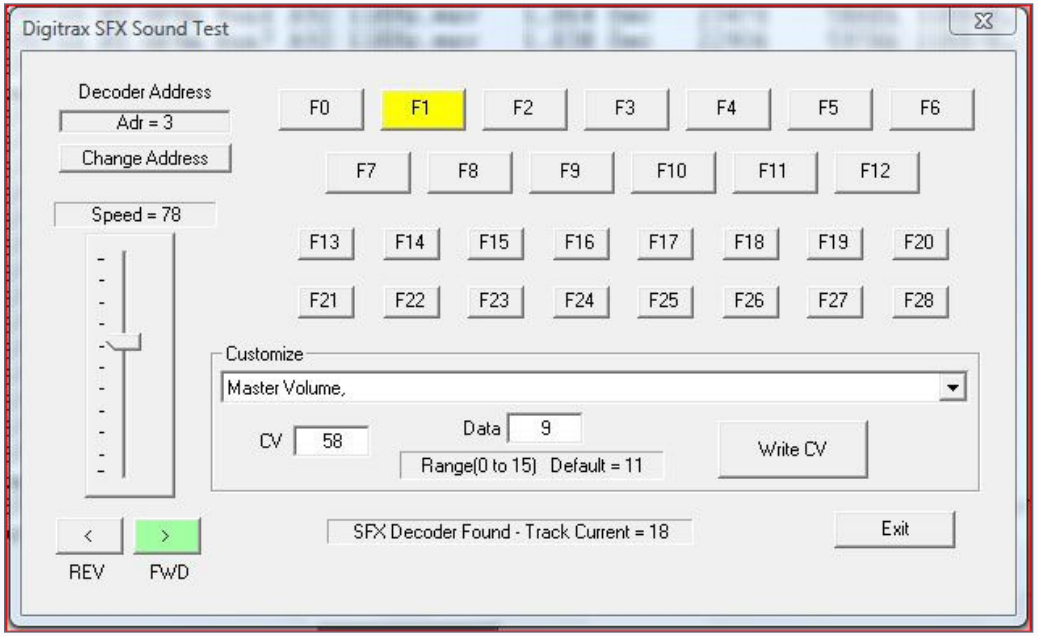


B. Decoder Address screenshot. After selecting Read, SoundLoader confirms the decoder address is 3. This screen can also be used to change the decoder address.

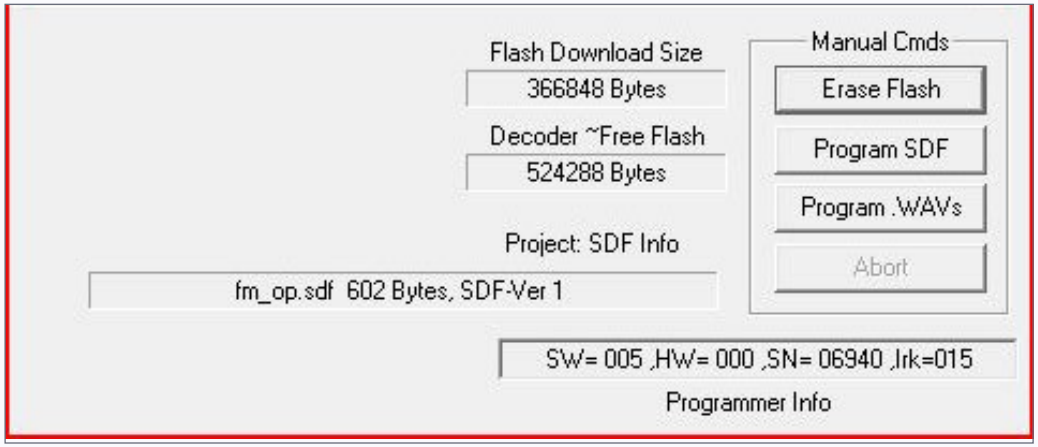
Check the sound operations of the decoder.

2. Open Sound Test. [C] Turn the default volume down until you are just able to hear (CV58=1-9). Play horn (F2) and further reduce the volume if the decoder resets and starts over. Use throttle and function keys to test first sound scheme (steam if CV60 is set to 0).

3. Change CV60 from 0 to 1 and play diesel sound scheme. (CV60 can be cycled through 0-7 for the eight pre-installed sound schemes on the new 6-series decoders)



C. Screenshot of the Sound Test function. One benefit of SoundLoader is the ability to test the sounds and functions of the decoder while still on the programming track.



D. Lower right corner of SoundLoader main screen after accomplishing an Erase Flash command. Note that the available (free flash) memory is 524,288 bytes.

4. If any of the above fail, accomplish a factory reset via the CV Editor (Factory Defaults button). [E]

Clear out the existing sound project and replace with new and check for correct operations.

5. Select Erase Flash (bottom right of main screen). The idea is to erase the decoder flash memory so that no other SPJ artifacts are present. When complete, select Get Detailed Info (bottom left). 512Kb of flash are required for 8 bit custom projects. (2Mb for 6-series decoders) [D]

6. Open your custom sound project in SoundLoader2.0.

7. Select Write (Download) to Decoder (green button in lower, center of screen).

8. Using CV Editor, reset CV60 to 0 (or the appropriate scheme if your sound project contains more than one). [E]

9. Read CV126 with CV Editor. A value of 7 indicates a successful download. A value of 5 can sometimes be salvaged by re-accomplishing Program SDF. Any other value requires restarting at step 7. (Some of the older Digitrax sound decoders (i.e. 004, 064, 006) cannot acknowledge downloads so continue testing below.)

10. Select Sound Test. Adjust SPJ defined CV values and play the defined functions. Functions are documented in the SPJ Text file. The Text file can be reviewed by selecting View, View Project Description... from the SoundLoader tool bar.

Switch to DecoderPro and complete fine tuning of the decoders CVs.

11. Open JMRI DecoderPro3.

12. Create a roster entry for this specific locomotive/decoder.

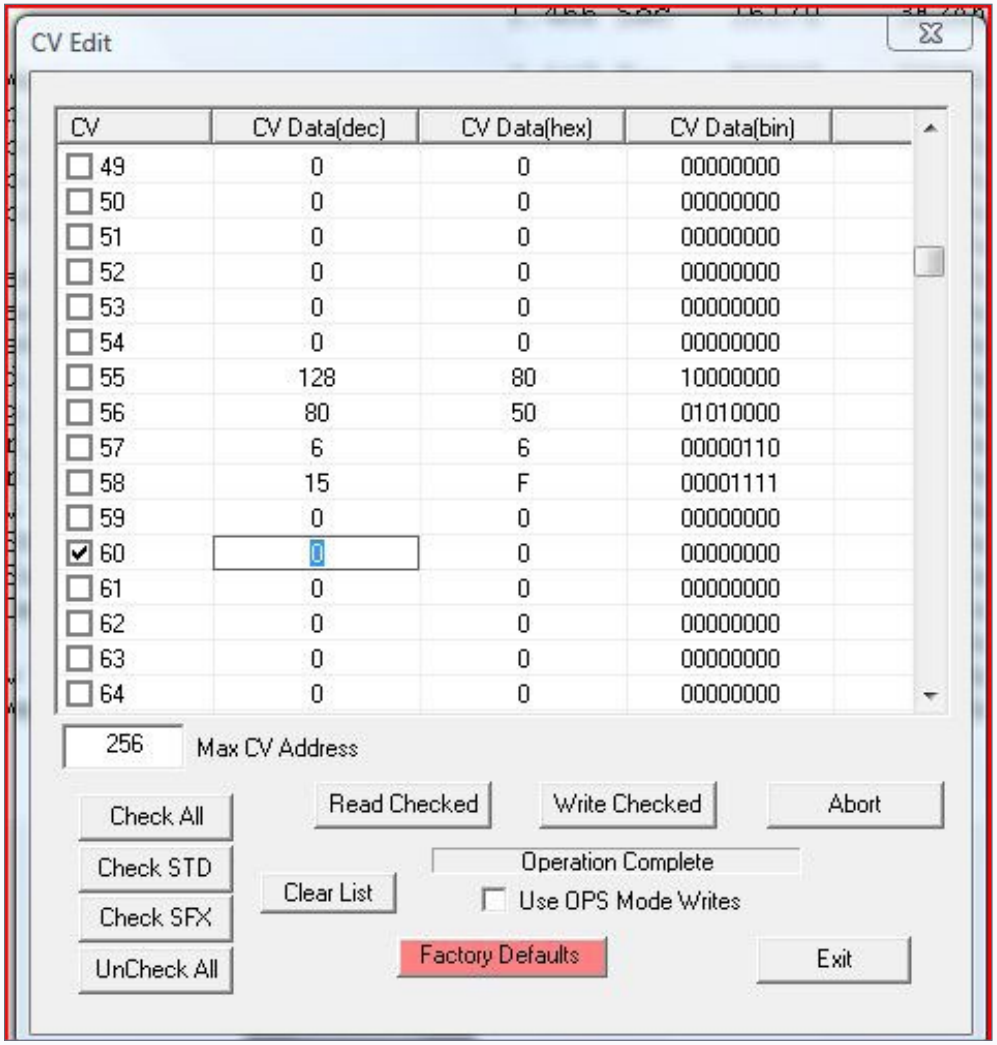
13. Set basic decoder values and then Read All Sheets.

14. Save the roster entry. You can use this roster entry to re-write your decoder later if needed.

15. Adjust the sound levels, running CVs values, and light/functions CVs.

16. Save the roster entry and enjoy using your new sound project! ■

Click here for reader comments



E The CV Editor can be used to read and write most configuration variables (CVs). In this screenshot, I am about to change CV60 from 0 to 1 to test the diesel sound scheme. The CV Editor can also be used to accomplish a factory reset with the use of the Factory Defaults red button. This restores the CV values, NOT the sound project file. ☑

Improving Athearn Blue Box

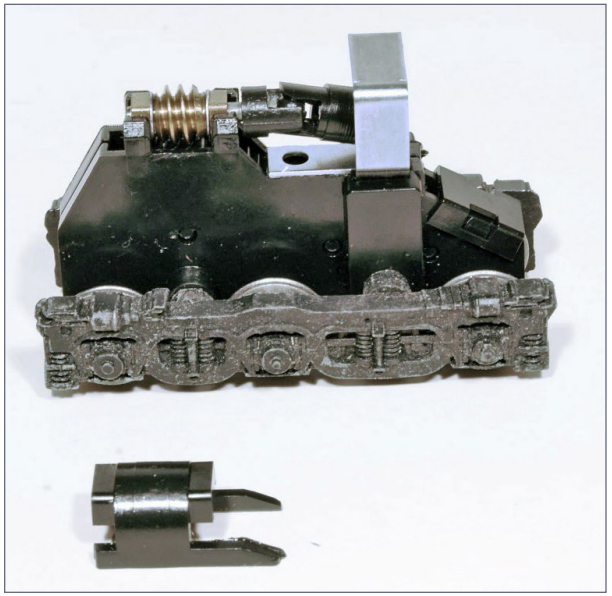
Electrical performance

BY MICHAEL WOLF

A simple disassemby and rewiring process will convert an old Athearn locomotive to one with the foolproof electrical connections needed for the best performance of DCC systems.

The first electrical connection to address is the transfer of power from the rails to the wheels. Athearn locos of this vintage came with sintered iron wheels which tend to attract dirt easily. Replacement wheels are available from several suppliers. I chose the NorthWest Short Line 40"/110 tread, half axle, outside frame, bright finish replacements [1]. They feature a much smoother, solid nickel silver wheel that will require less cleaning.

1. Side-by-side comparison of the original wheelsets in the truck, and solid nickel silver half-axle replacement wheelsets from NorthWest Short Line.

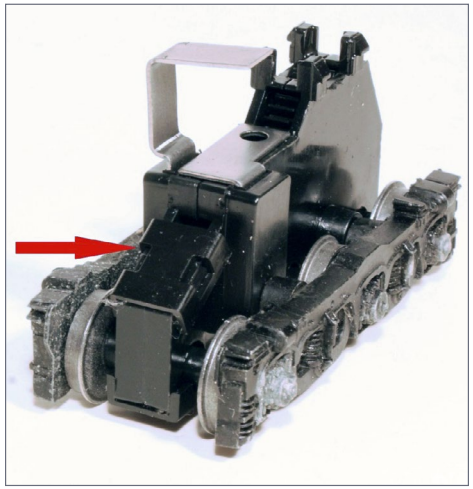


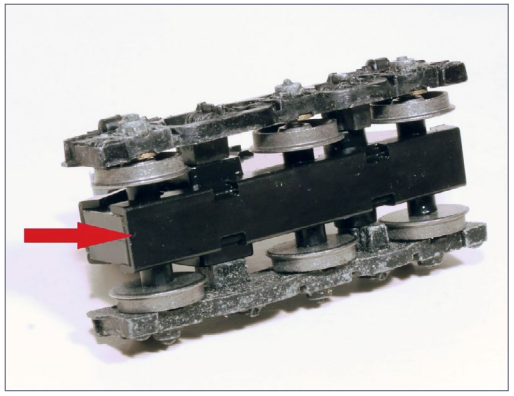
2. Clip holding truck to chassis has been removed, allowing the truck assembly to be removed from the frame.

Mechanically, the locomotive is pretty easy to disassemble. Pop off the shell, remove the metal electrical pick up strip and light assembly (we won't use them), and then gently pry the cover off the top of the worm gear assembly on each truck [2]. Once the cover is off, pull the worm gear, drive shafts and universal joints. Don't lose the thrust washers or the brass bearings on either end of the worm gear shaft. The truck should slide out through the bottom of the chassis.

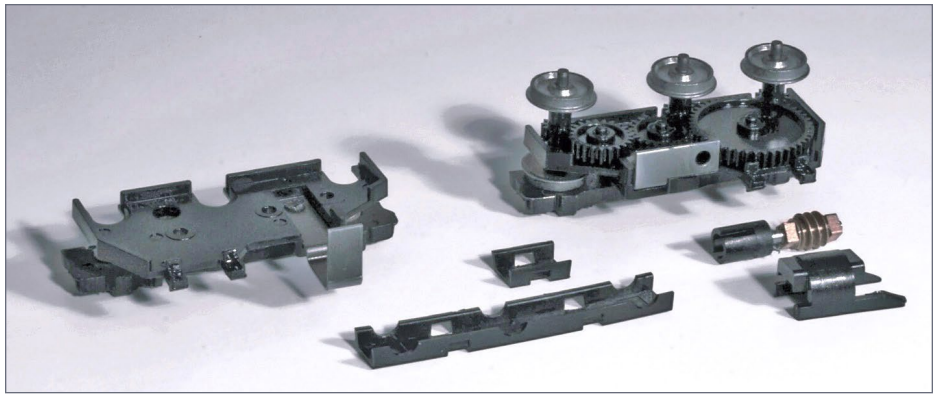
A little more disassembly is required to get to the wheels. On the truck is a long clip on the bottom and a short clip on the top. If you slide a small screwdriver along the side of these clips, they will pop free [3, 4]. Photo E shows a disassembled truck assembly after a pretty good degreasing. These trucks are the older Athearn design and use the outside frame to transfer electrical power. The newer design has a removable, plastic outside truck frame and power is transferred to the inside frame via small brass square bearings on each axle.

The replacement axles are different for the two types so it is important to know which truck you have before ordering them.





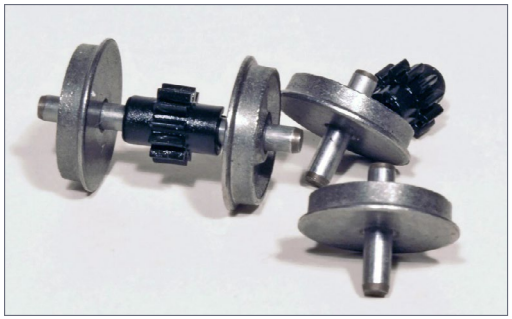
3-4. The upper and lower clips hold the truck assembly together. Use of a thin blade screwdriver along the edge of each will pop the clips off.



5. All of the truck components have been disassembled and cleaned in preparation for replacing the wheelsets.

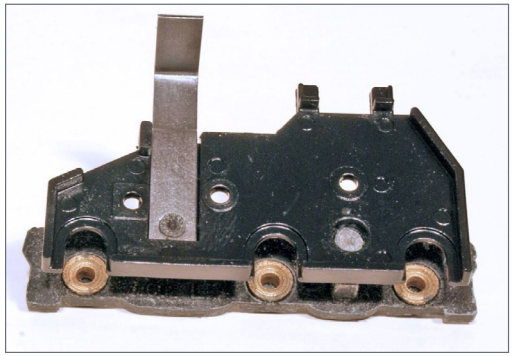
Click here for reader comments

Carefully twist the old wheelsets off the axle gear. The replacement wheelsets should slide into the axle gear with a very snug fit – do not ream them out [6]. Have no fear, if the axle gear splits, replacement gear axles are also available from NWSL and others. Ask me how I know. Check the gauge of the wheels after you slide (twist) them in. They must not go all the way in. The axle halves will short out if they do. Before you reassemble the truck, take the time to check the gears and gear housing for burrs. Lightly file off any burrs. Lube and reassemble the gears and move to the next step in the electrical chain.

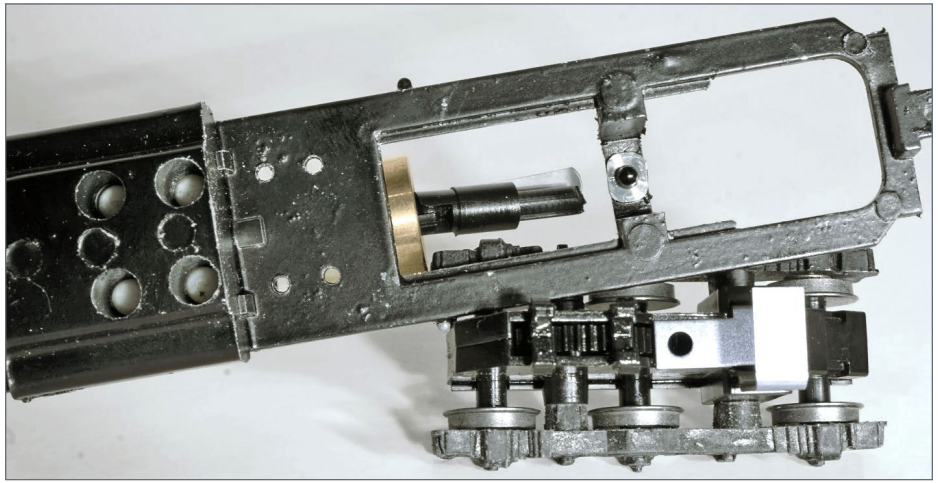


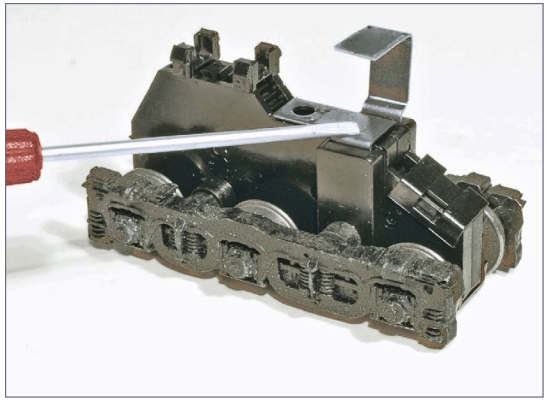
6. Examples of unassembled and reassembled wheel sets. An NMRA standards gauge is used to check wheel gauge before reassembling the truck. The axle gear should be centered on the axle.

Electrical power is transferred from the truck to the motor through two paths. For one side of the truck, the electricity flows from the wheel, through the brass or copper contact plates and via an L-shaped metal bracket originally attached to the light/top power bar [7]. The other path is through the wheels, the brass or copper axle contact plates, and via a metal-on-metal contact point between the truck and bottom of the chassis [8]. Inspect the contact between the truck and the chassis. If it is free of corrosion, as mine was, polish it a little and move on. If you have any doubts, it's probably worth the time to carefully tin and connect a feedwire to the truck in the area shown in [9]. Take care to avoid melting the plastic truck components.



7. Electrical transfer is made from the wheels' axles through the brass contact plates on the outside frame, and then via the L-shaped bracket which originally rubbed the headlight/top of motor connection strip.

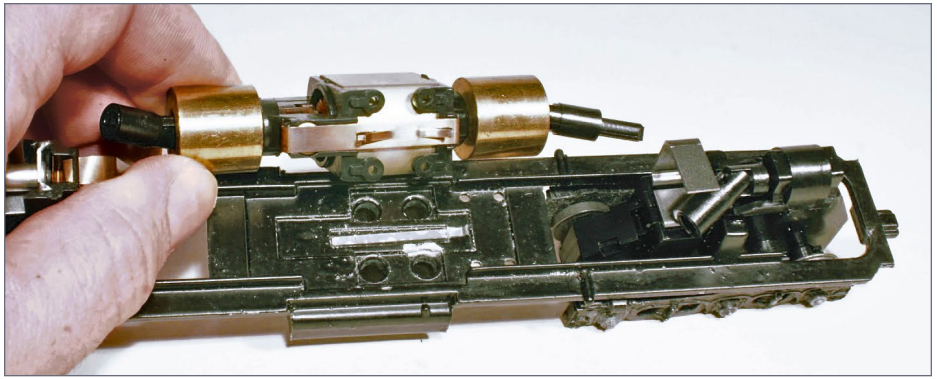




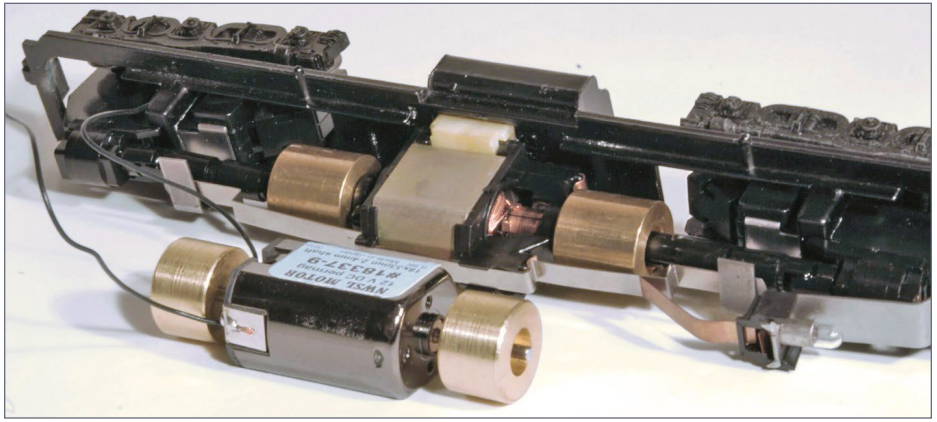
8. The metal-on-metal connection between truck pivot point and chassis is the second path for electricity to transfer.

9. If the metal-on-metal connection is not reliable, a feed wire can be attached to the metal area indicated by the pointer.

Prior to disassembling the chassis, I tested the motor on a test track connected to a DC power supply, volt and ammeter. During my DC testing, the stall current test at 12V showed a 2 amp draw, too high for most HO scale decoders. Additionally, the frame would require milling to isolate the motor from the chassis



10. Electrical power to the motor was designed to flow from the unpainted strip on the chassis to the copper strip on the bottom of the motor. The motor must be isolated from the frame for DCC. The lower motor lead must be connected to the motor output lead from the decoder, not to track power via the frame.

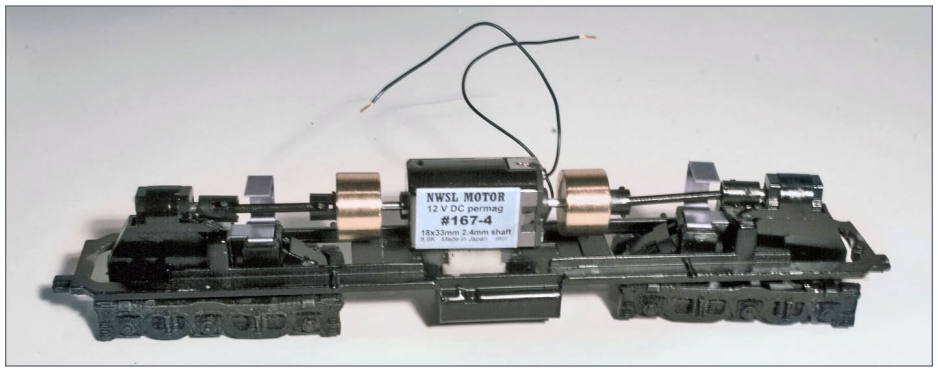


11. Original drive train with replacement motor from NWSL.

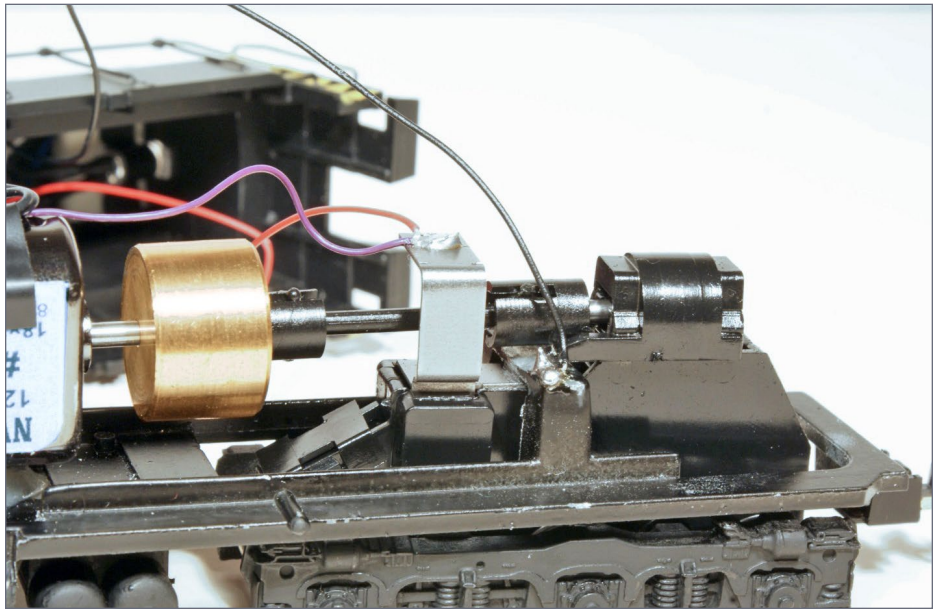
(the lower connection to the motor is via the tabs touching the chassis [10]. Several manufacturers make one-for-one Athearn replacement motors. I had an NWSL on hand and used it [11].

Photo 12 shows the reassembled drive train. Connect a DC powerpack to the motor leads and ensure the drivetrain spins smoothly.

The final electrical connections we need to make are two jumpers to supply track power to the decoder. I soldered a wire between the two L shaped brackets on each truck. Make the wire long enough to allow the trucks free motion. The other jumper is connected to the chassis. File and solder to a convenient location, or drill and tap for a screw connection [13]. If you made the connection to the truck discussed above [9], this jumper is not required. At this point, we have a solid drivetrain and electrical path, all set to add DCC and sound. ☑

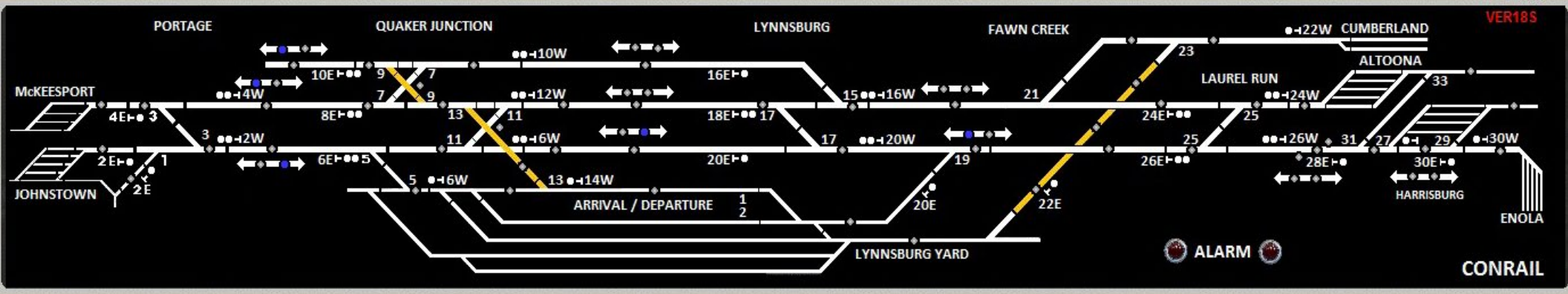


12. Reassembled drive train with replacement motor. Clear silicone adhesive and sealant was used to attach the motor to the frame.



13. A solder connection is made to the chassis for providing track power to the decoder (black wire). A small set screw could also be used, by drilling and tapping a hole in the chassis. The purple wire, connected to the other truck, and the red wire to the decoder provide power from the other set of wheels.

Click here for reader comments



VIRTUAL SIGNALS

on the Quaker Valley Railroad

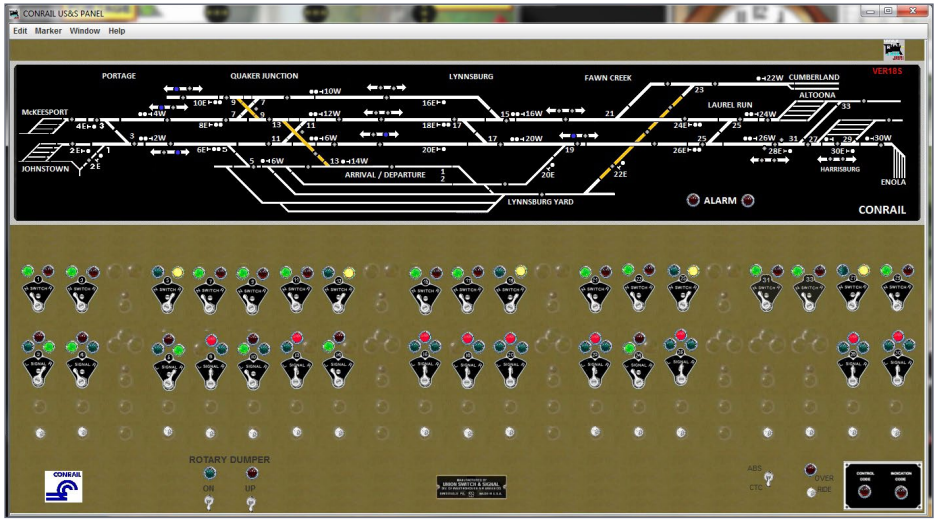
BY BOB BUCKLEW

Click here for reader comments

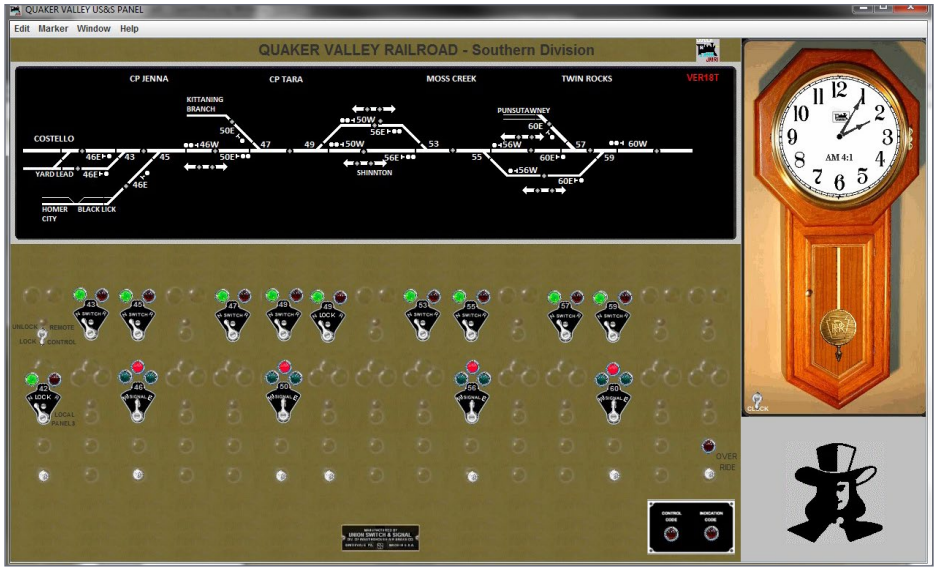
Using smart phones and tablets to enhance operations ...

THE QUAKER VALLEY RAILROAD HAS BEEN creating and refining a functioning CTC Panel using the Panel Pro feature in JMRI's Decoder Pro since 2003, when I saw the CTC panel Bob Jacobsen and Nick Kulp were developing. Over the past 10 years, it has matured into two full-featured US&S-style panels that are now controlled on a flat-screen touch monitor as shown in [1] and [2].

Although I also dispatch on Ken McCorry's large model railroad that includes a physical CTC panel [3], I find my computerized panel just as easy to use, and much easier to modify. JMRI is often known as Decoder Pro by model railroaders, but includes



1. Conrail CTC panel.



2. Quaker Valley CTC panel.

3. Ken McCorry's CTC panel.

several other tools, including Panel Editor, Layout Editor, Panel Pro, Layout Editor, Operations (covered in the October 2013 *MRH*), and Sound Pro. They are all contained in one free program download (jmri.org). Donations are encouraged to cover incidental costs.

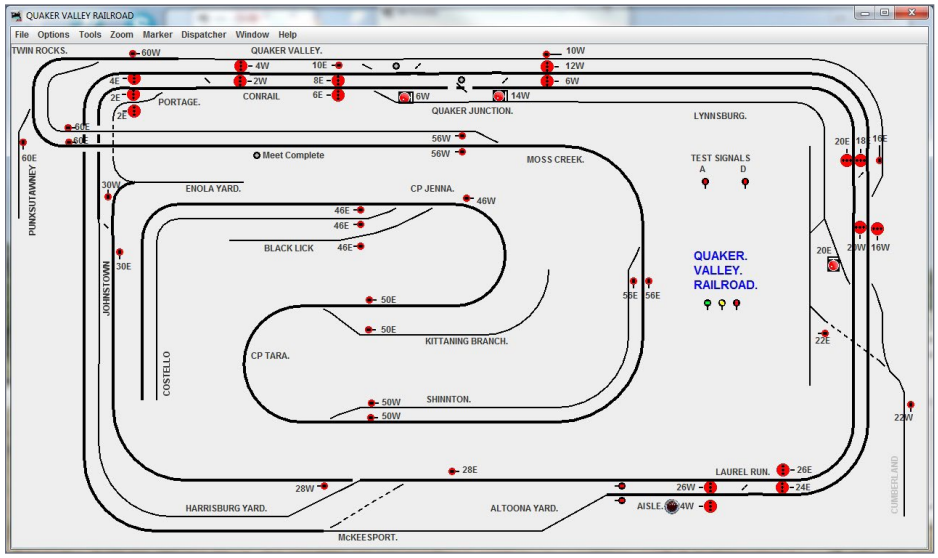
Included in JMRI are all of the elements of a US&S-style CTC panel, including background slices, switch and signal plates, levers, and buttons. The JMRI developers added multi-position lever icons in 2006 that now permit signal and turnout lever operation with a mouse, trackball, or touch to the screen.

The JMRI Layout Editor ties all of the blocks, turnouts, and signals together logically so you can develop simple signal logic (SSL) to replicate ABS or CTC type signaling. JMRI provides interfaces to a wide variety of DCC hardware used in the model

railroad community. Best of all, JMRI permits use of more than one interface, so you can choose the best pieces to meet your railroad's needs. My website at quaker-valley.com shows how I use an NCE Power Pro command station to run trains and turnouts, and a separate RR-CirKits-powered LocoNet for block detection and physical signals on my model railroad.

I started down this path by first automating the mainline turnouts in 2003. It was easy then, and even easier now to create a panel that will issue DCC accessory commands to operate turnouts. And you can do this on a CTC panel or from an animated layout panel, or both.

Later I added block detection to all of the mainline blocks, and some key yard locations as well. These are shown on both types of panels. Over time, I added code buttons and logic to the CTC panel so the turnouts could not be thrown under trains occupying the interlocking. I have developed an online JMRI tutorial



4. Quaker Valley Layout Editor panel.

5. CP Laurel East has a physical signal.

(linked from my website) that explains how the Layout Editor and Panel Editor can be used together to create a functioning US&S CTC panel. Completing the tutorial gives you an understanding of the basic JMRI tools so you can tackle your own project.

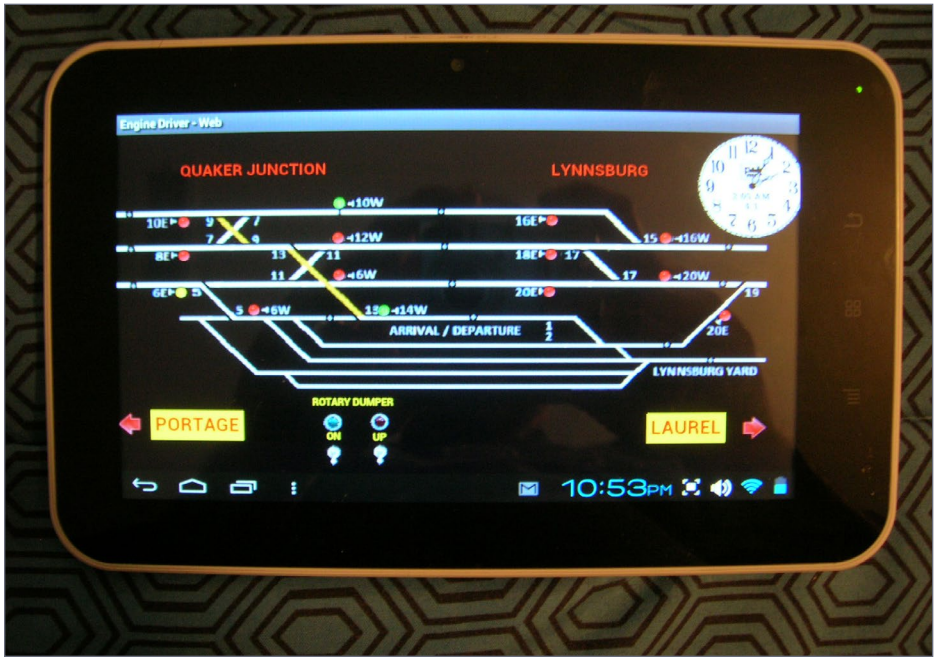
Next, I placed what JMRI calls internal signals on the Layout Editor panel for the Quaker Valley [4]. Over time, I defined the Simple Signal Logic for each control point, and added the Logix (a JMRI term) to hold the signals based on actions by the Dispatcher using the CTC panel. A held signal will display red even if the block beyond is unoccupied. When the Dispatcher clears the signal, the hold is released and the SSL determines what signal aspect is displayed. My CTC panels are fully functional now, showing mainline block occupancy as shown by the TOL block occupancy indicators. And using the JMRI Logix, the signal lights on the panel drop as the trains progress through each control point.

With my LocoNet hardware in place, I had the means to turn those internal signals into functional physical signals on the Quaker Valley. And I have an Oregon Rail Supply PRR-style signal mast in place at CP Laurel, as shown in [5]. But I found it is both time-consuming and expensive to add the hardware and build the signals I need to fully animate my railroad. This is especially true since I want PRR-style position-light signals on my Conrail mainline. It still is a project I will continue to tackle over the next several years, and into my retirement.

Then at Christmas 2012, I received an Agptek 7" Android tablet from Santa. I had wanted to explore the use of the JMRI Web server in order to provide signal indications along the mainline of the Quaker Valley Railroad. I installed an old router on the train room computer, and found it very easy to set up the tablet to work with JMRI. Once I started the JMRI Web server, I was able to start the JMRI WiThrottle and download Engine Driver for the Android tablet. I was up and running trains, although at first I thought the 7" tablet was a bit too big to be a handy throttle.

Next, using Control Panel Editor, I tackled the local tablet panel labeled QUAKER JUNCTION as shown in [6]. This panel can be seen by any PC, smart phone or tablet using my Wi-Fi network by simply entering the appropriate URL. The JMRI developers have included a home page for the Web server which includes all of the open panels, so you can simply click on it and then save it as a favorite.

The most surprising thing was that the panels on the browsers are fully interactive. That is, I can pull up my full CTC panel on the tablet, and control both turnouts and signals. It does take some zooming to activate the smaller icons. But I walked around the layout room testing that feature, and soon realized it was not something I wanted my train crews having access to during an operating session. Fortunately the JMRI developers included a way to easily exclude panels you do not want visible.



6. Quaker Junction local panel on an Android tablet.

The tablet panel shown for Quaker Junction has indications for 14 signals, but only one exists physically on the model railroad at this time. This less-than-$100 tablet can be viewed by the train operators to see if they have a signal indication to proceed. At $25 to $50 per signal, that is a big savings of hard-earned capital. I initially thought I would place three or four tablets at key locations for use during operating sessions.

I have completed three additional local panels that can be accessed from the tablet like the one shown in [7]. You could easily operate your turnouts from these local panels, but I have chosen to lock them for exclusive control of the Dispatcher. If you like, you could lock those on the mainline, and permit operation of turnouts in a yard. You can also have the Dispatcher unlock a turnout for local crew control. At Quaker Junction, I

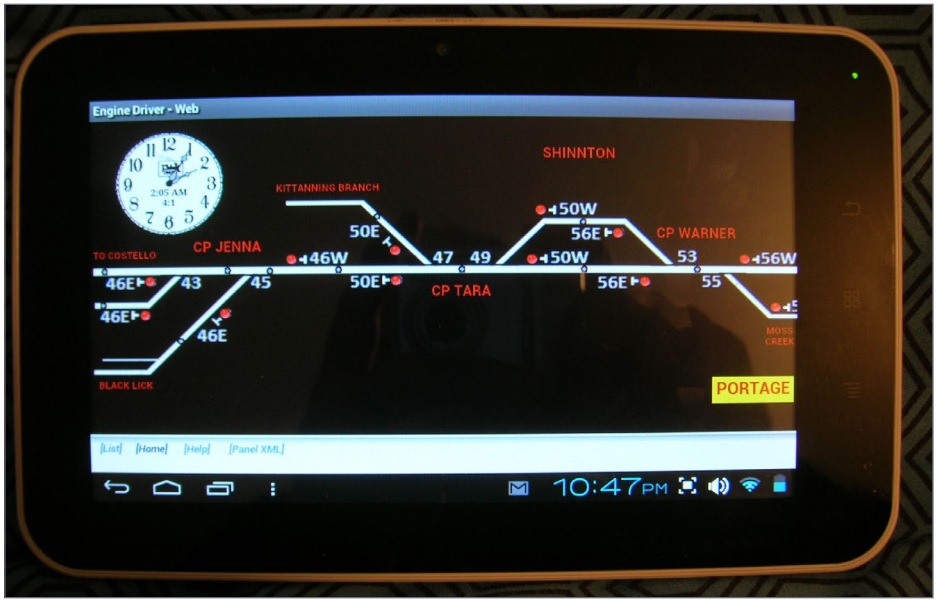
included two switches to operate my rotary dumper which is powered by an under-the-layout DCC loco decoder. That was much easier than installing fascia-mounted switches and wiring. See the video link below for the rotary dumper operation from a tablet panel..

But I didn't stop with the local panels. Late one night, I had some other thoughts for the tablet displays. I took digital pictures of the actual layout with empty signal bridges in place, and used them as a background to display the JMRI internal signals at these same locations. So the tablet panel shown in [8] is the view looking east at Quaker Junction. I superimposed a set of PRR-style position signal icons I created to include the lower head for a restricting signal. You could use any of the many styles of signal icons provided in the JMRI distribution.

I later changed the signal on the far left to be a three-color three-light display as shown. That is the nice thing about

Playback problems? Click here ...

Video 1: Rotary dumper controlled by JMRI panel.



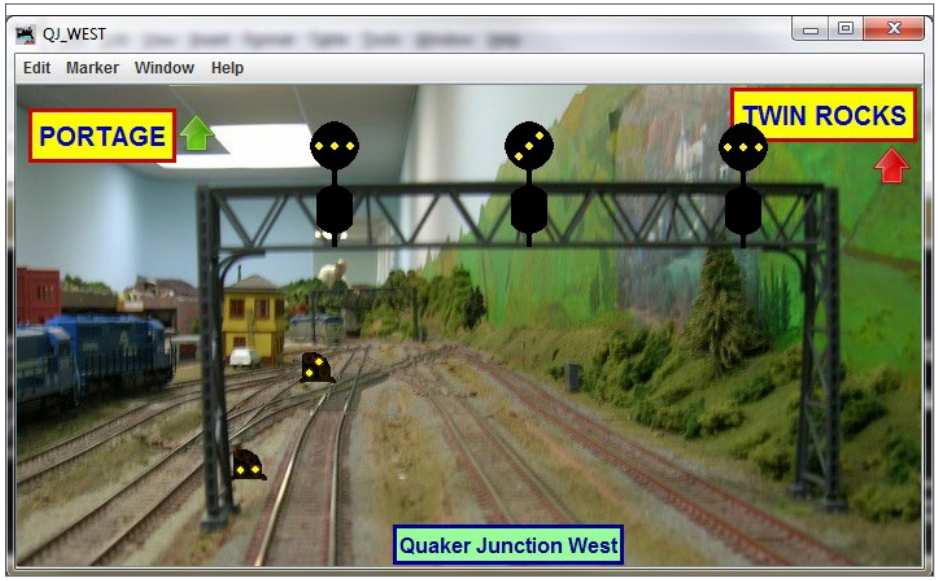
7. Shinnton local panel on the tablet.

8. Engineer view east at Quaker Junction.

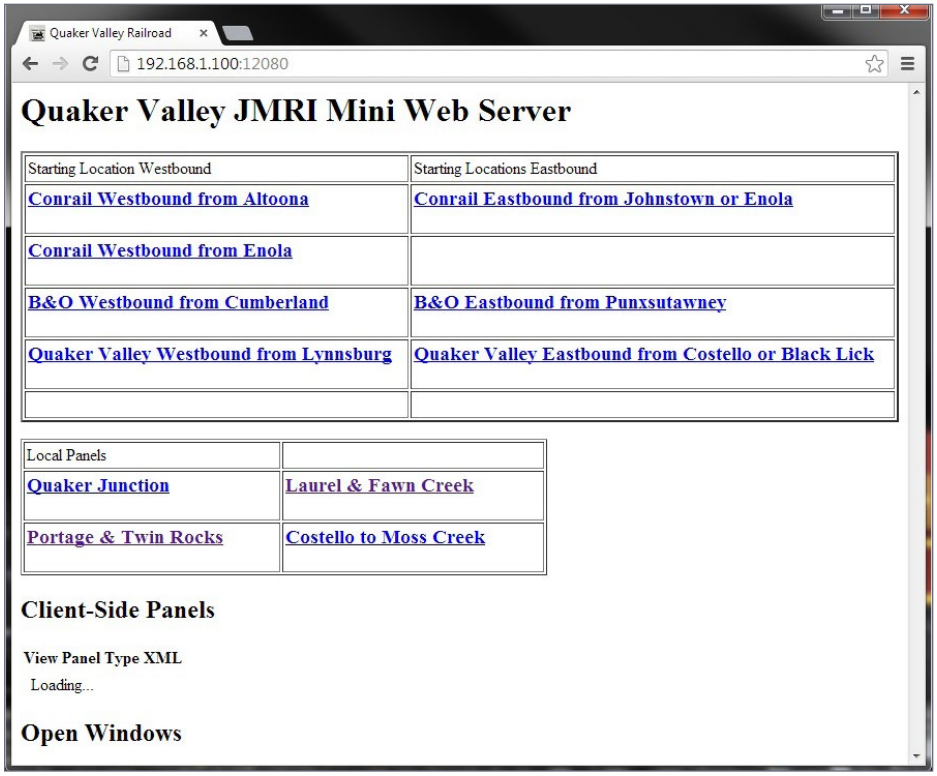
developing in JMRI software. It just takes a little time and development of Logix to get the correct display. And you don't need to drill new holes or patch unneeded ones. The signal mast here is from Oregon Rail Supply, and one day soon will have working RR-Cirkits driven bi-color LEDs.

When initially released, there was no way to navigate to the next panel without going back to the home page. But my online suggestion on the JMRI yahoo group to the JMRI developers resulted in a new feature about 10 days later. It may have been something they were already working on, but the developers never cease to amaze me. Thanks to Bob Jacobsen, Steve Todd, and Pete Cressman who collaborated on this fine work in the Control Panel Editor.

The tablet panel for Quaker Junction shown in [9] is looking west, and has new icons and text added to navigate between panels on the tablet. Clicking the arrow icon or text in the



9. Quaker Junction West showing linking icons and text.



10. Quaker Valley JMRI Web server home page.

upper corners takes you to the next signal indications at Portage or Twin Rocks, since the railroad splits here. I recently added a text box at the bottom of each engineer's view panel to indicate the location of the signal.

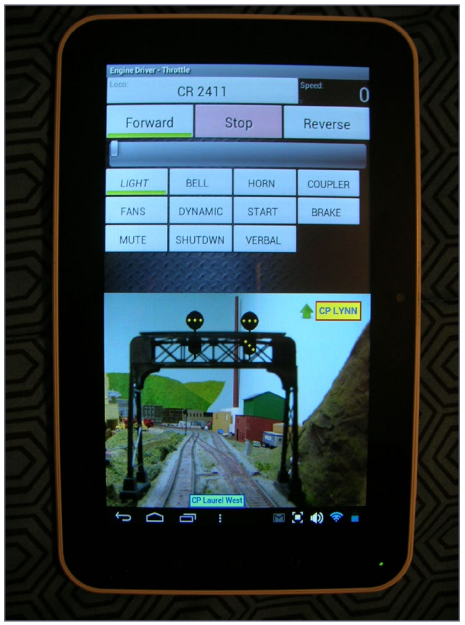
So an engineer can go to the Quaker Valley JMRI Web server home page [10] when acquiring a train in staging.

This can also be displayed right below the throttle in Engine Driver as shown in [11]. Touching the starting point (in this case "Conrail Westbound from Altoona") will bring up the first signal as shown in [12]. After getting Dispatcher permission to leave, the

crew can easily follow their train around the layout, and always look ahead for the next signal in the direction of travel.

Engine Driver now includes the ability to display the Web page full-screen in the landscape position as shown in [13]. This is especially useful when using a smaller device like an Android smart phone. The display at Laurel West is adjacent to the aisle gate described in my article in the February 2013 issue of *Model Railroad Hobbyist* (mrhpub.com/2013-02-feb/land/#105). I have the hardware to install on this signal bridge, but have not gotten it built yet. The westbound signal is showing a PRR-style restricting aspect as the plant is aligned to cross over to the opposing main and then enter the Lynnsburg yard.

Touching the icon or text for the next control point will display the next signal as shown in [14]. Note in this location, I placed



11. Web server home page on Engine Driver throttle.

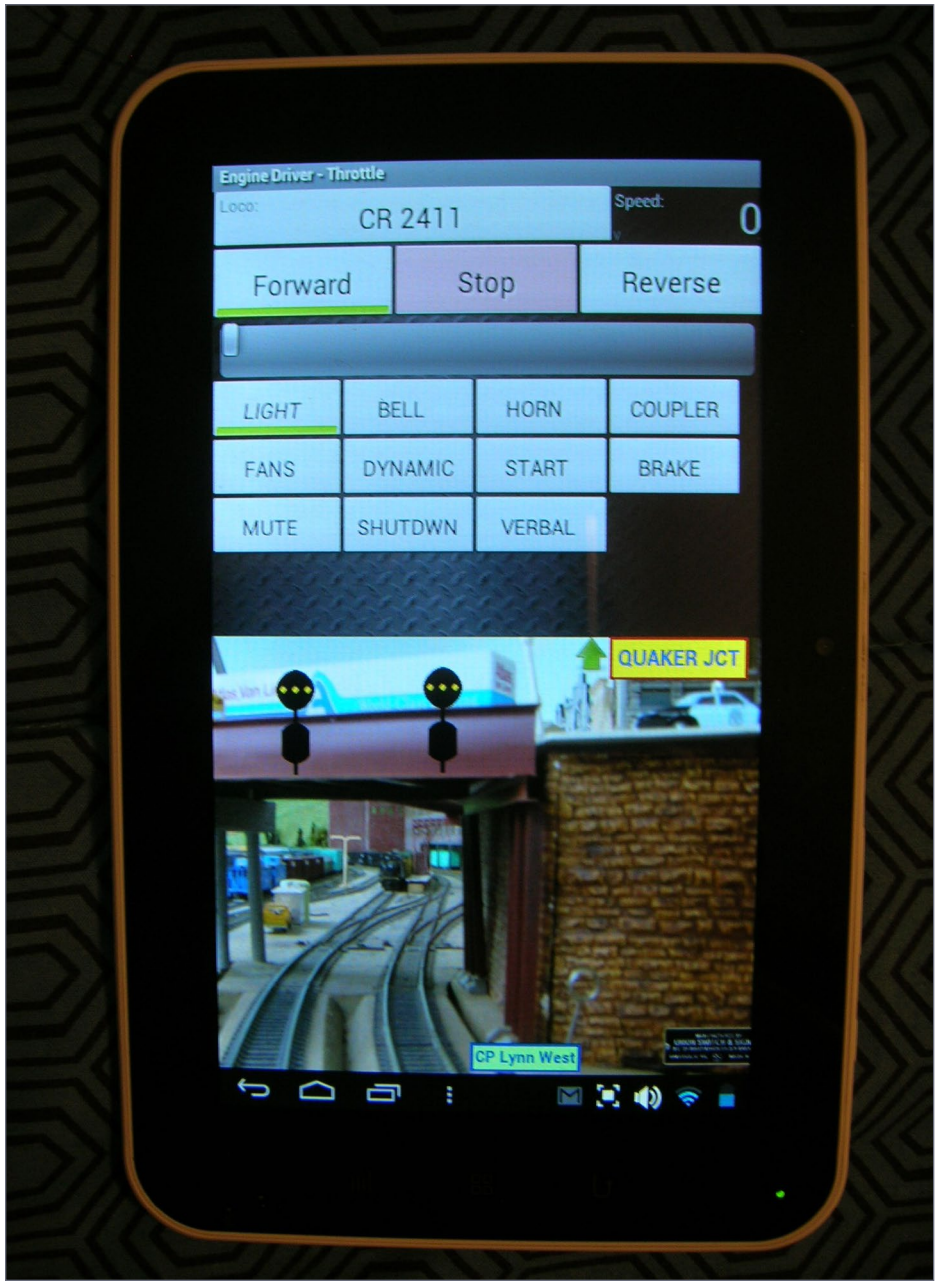
12. CP Laurel signal shown on Engine Driver.

13. CP Laurel shown in full-screen Web view on the tablet.

the virtual signals right on the highway bridge crossing overhead. I plan to add real PRR-style position-light signals on the model railroad in the same way one day soon.

During 2013, I hosted a few sessions where two Quaker Valley operators with tablets and smart phones were giving the JMRI Web server a workout. I'm unsure what limitations might be reached, but find the developers of both JMRI and Engine Driver responsive to issues with performance or features. I now have some experience with WiThrottle, a similar application available for iPhone and other Apple products. The "Lite" version does not include the Web viewer available in the full app.

These background pictures of the different control points have given me a whole new visual perspective on the Quaker Valley Railroad. I have already taken quick shots of each control point (even those in staging), and developed engineer tablet views



14. Signal view at CP Lynn West.

for every control point on the Quaker Valley. I'm seeing that the operators with the iPhone and smart phone throttles will be able to browse each of these panel displays, and greatly reduce the need for permissive radio traffic with the Dispatcher. This has already happened, as I would hear the Quaker Valley Dispatcher clear a train from staging, and just say "CAPI is cleared to CP Laurel, then follow signal indications." See the video link below for a demonstration of CTC panels, local panels and the engineer panels as used on the Quaker Valley.

The JMRI, Engine Driver, and Withrottle developers have made this all possible. I hope this article will inspire you to try and jump into the deeper end of the JMRI pool.

More information, tutorials, and reference materials are available on the author's website at quaker-valley.com.

You may also obtain the free download, and explore the features of JMRI at the group website jmri.org. ☑

Playback problems? Click here ...

Video 2: JMRI CTC panel and tablet operations.

BOB BUCKLEW

It began with a Lionel train set passed down by an uncle when Bob Bucklew was eight. Bob really got serious with HO model railroading while working for Excelsior Truck Leasing. For more than three decades, Bob's jobs in fleet management often brought him in contact with prototype railroading.

Bob's current HO scale Quaker Valley Railroad is a freelanced bridge route set in western Pennsylvania circa 1977.

Bob and his wife Lynda live near Reading, PA. They have two daughters who graduated college and were married three weeks apart last summer! ■

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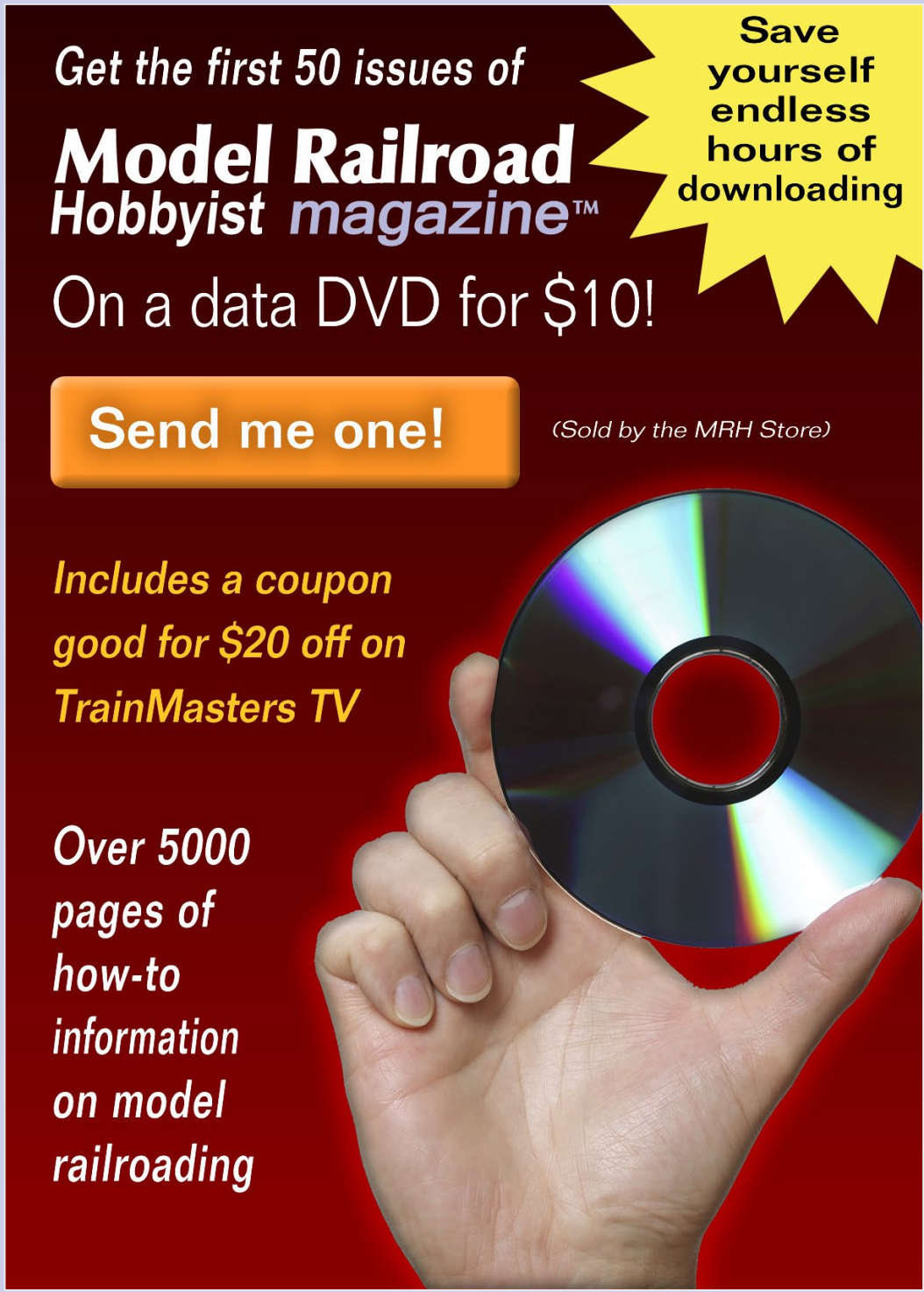

CONRAIL

Ex-Reading GP35 #3627 Part 2

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CONRAIL

Reading lines

Weathering the Conrail GP35 ...

BY CHRIS THOMPSON

FINALLY IT'S TIME FOR PART 2! THIS ENGINE has been completed for nearly a month but I just haven't had time to put together another update. Part 1 left off with the painting and decals complete, so we'll continue on with weathering and the Tsunami installation.

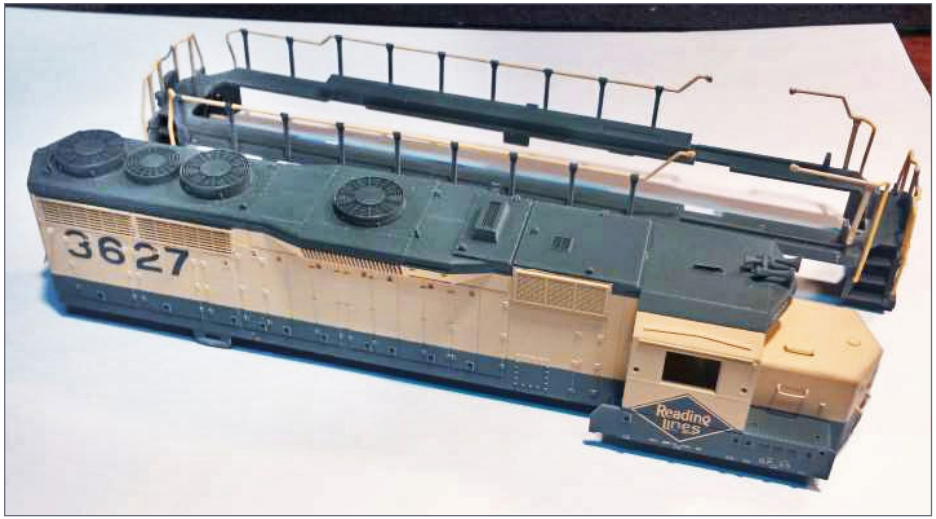
See Part 1 at: mrhpub.com/2015-04-apr/port/files/154.html.

STEP 7: Paint fade base coat

Now begins the weathering process! I've already used my own mix of yellow and green for the toned-down color of a unit that's been in service for years, as I showed in part 1. Time to add a paint fade base coat before applying the weathering.

To get my fade base coat, I mixed a wash of Floquil Reefer White using about 90% thinner and 10% paint. I set my airbrush to 20psi and applied a mist of the wash from about four inches away from the model. Sometimes it's a barely noticeable difference, so I do one side of the engine at a time for comparison. Better to do this twice than too heavy the first time!

When satisfied with the amount of fade, I applied Dullcote to the entire loco to seal it prior to the next steps.



31. Remove the shell from the running boards/handrail assembly in preparation for applying the paint fade base coat.

STEP 8: Weathering

Everyone has their own methods and tastes for weathering. I use gouache thinned and cleaned up with Windex, and airbrush oversprays.

Gouache is similar to oils and acrylics in method, however the pigments are ground much finer and drying time is minutes instead of days for oils. You can even use a hair dryer to dry gouache for the next step in just seconds.

I mixed burnt umber into a blob of raw sienna to tone down the reddish tint a little. This will be the brighter, fresher rust, so I applied it to the horizontal surfaces like the top of the nose, roof, and walkways.

I then use a cosmetic sponge dampened with Windex and gently blot away the rust bit by bit until I'm happy with what's left. I find I can take it all off and start over if need be, as many times as I wish, without harming the paint.

32. Fresh rust-colored gouache applied to the nose and roof. Note the heavy buildup on the nose.

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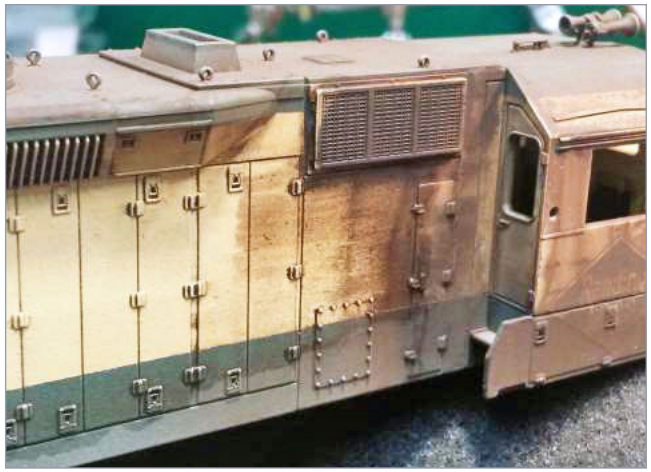
STEP 8: WEATHERING *CONTINUED ...*

33. The nose after blotting away most of the gouache with a cosmetic sponge dampened with Windex. Seal with Dullcote when satisfied.

34. After sealing this layer of weathering with Dullcote I again mixed raw sienna and burnt umber, but this time about 50/50 to produce more of a brown-colored older rust. This color needs to fill in all the recessed areas such as hood door gaps, radiators, and access door latches so I added a couple drops of Windex to the gouache to thin it, then applied it to the entire loco with a large soft brush.



35. After drying, 98% of this crud is ready to be removed, but only from the top-most surfaces. I did this by again using a cosmetic sponge dampened in Windex, but instead of blotting I lightly drag it across the surface perpendicular to the hood door gaps. This cleans the doors and leaves the gaps filled.

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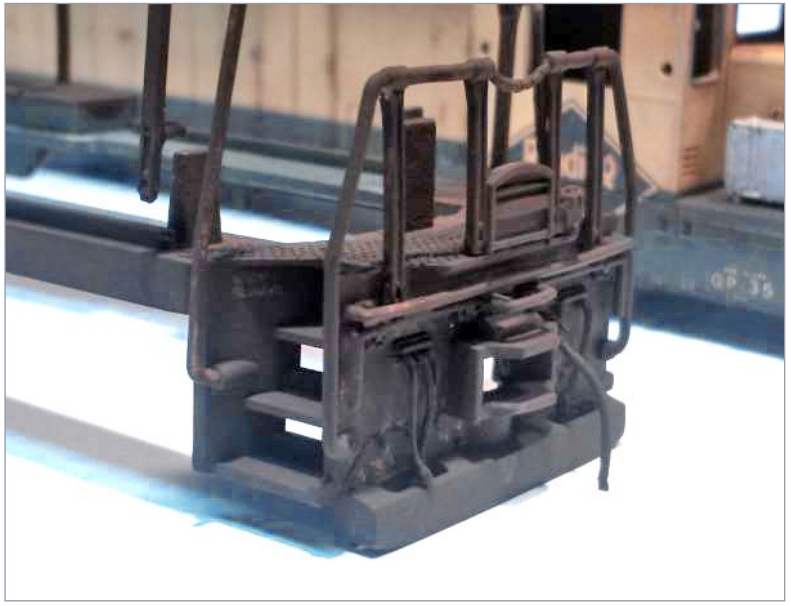
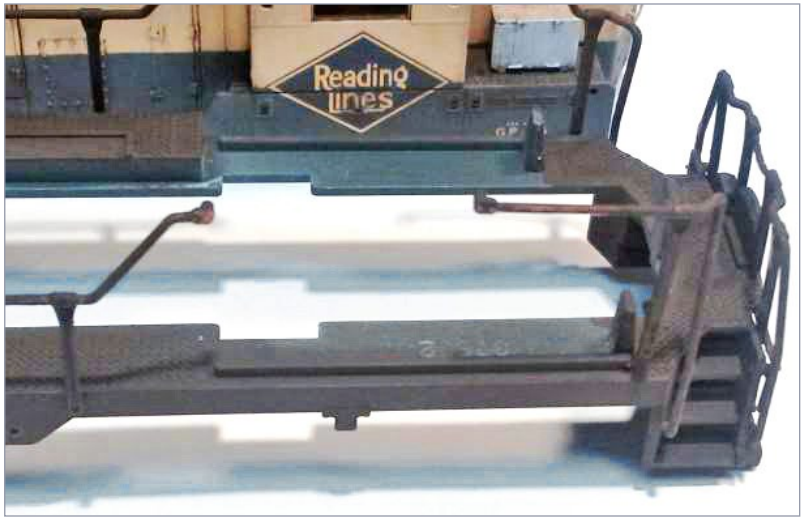
STEP 8: WEATHERING *CONTINUED ...*

36-37. Do the same with the radiator section and all other panel lines. Clean the gouache off your sponge frequently. When it becomes bloated and unmanageable, tear off the used part or get a new sponge – they're cheap! The process does a nice job weathering the radiator: [36] and [37] show the radiator section before and after.





38-39. I followed the same routine with the walkways and pilots. Coated it, let it dry, then removed most of it.

STEP 8: WEATHERING *CONTINUED ...*

40. Once again everything gets sealed with Dullcote when satisfied.

So far it's a great looking Reading GP35 that's been in service for several years and shows it. We'll change that Reading decal in the next step.

In the next steps I patch out the Reading markings, add Conrail stencils, then finish up with a final airbrush weathering. That done, last of all I install a Soundtraxx Tsunami DCC decoder with speaker. Let's get to it!

STEP 9: PAINT MASKED-OFF AREAS

41. Once again all the weathering was sealed with Dullcote before beginning these steps. Using prototype photos as a guide, I used 3M blue painter's tape to mask off the areas to be painted black.

STEP 9: PAINT MASKED-OFF AREAS *CONTINUED ...*

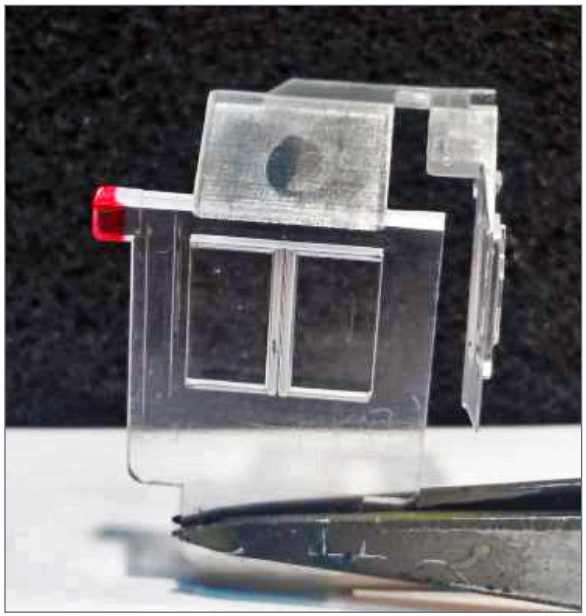
42. To protect the body completely from overspray, I covered it with painter's tape. I painted the exposed areas with Scalecoat II Engine Black for a glossy, decal-ready finish.

43. Here's the result with the masking tape removed. These patch jobs were carried out by shop forces in a hurry and were done with paint rollers, spray cans, or anything else available that day. Neatness is not a requirement here! Imperfections are visible in almost any prototype photo.

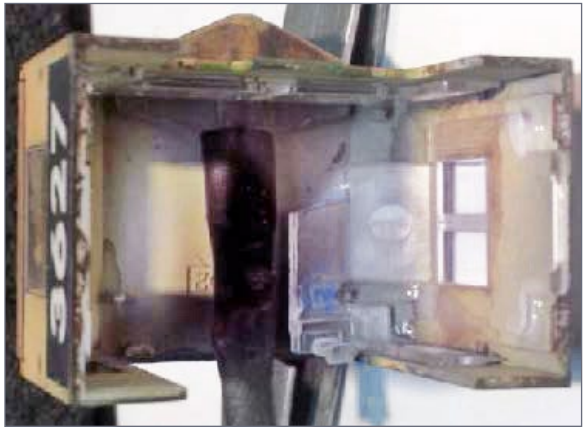
STEP 10: APPLY CONRAIL DECALS

44. I used Mount Vernon Shops white Conrail patch decals. This set includes different stencil styles and lettering sizes to do almost any locomotive. Decal application is straightforward with normal methods, and based upon actual photos, so there isn't much to cover here. After the decals were applied I cleaned up any watermarks and applied a very light overspray of Grimy Black wash to tone down bright colors a bit, then I sprayed Dullcote on the model.

STEP 11: Install cab glass



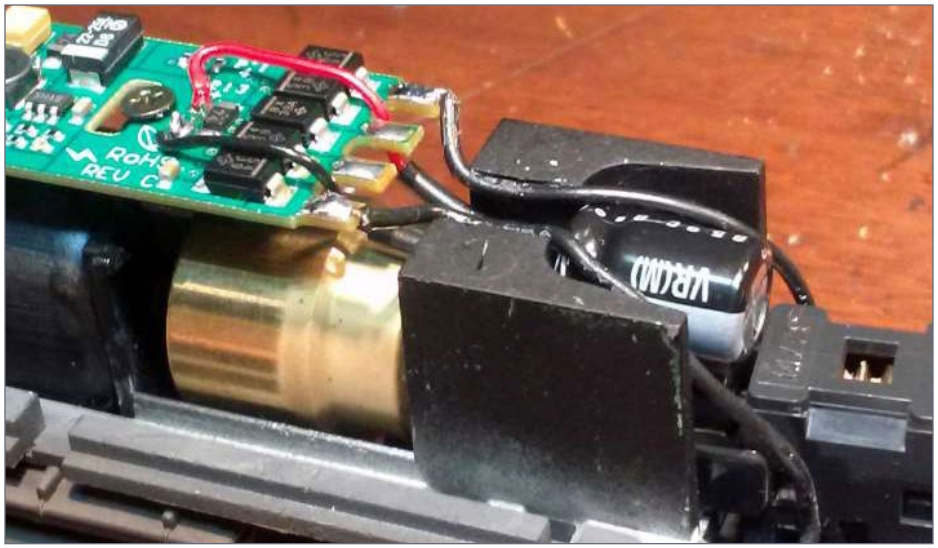
45. I re-used the factory Kato cab glass on this model, but I don't like the way the glass pieces rub against each other while removing or installing it, causing scratches. To work around this I cut the tab off the side window piece (shown in red).



46. I cut the side window glass in half and removed enough material to fit around the now-enlarged headlight tube and LED. All the glass was installed firmly, then secured with a few dabs of Aleen's Tacky Glue, leaving them removable with a little effort.

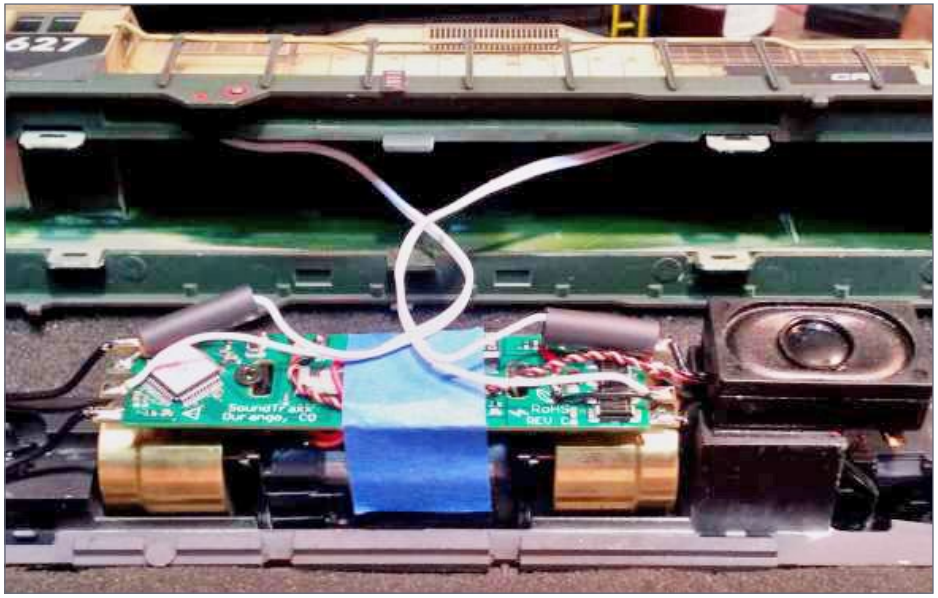
STEP 12: Install Tsunami decoder & speaker

Next is Tsunami and speaker installation! I intentionally purchased the Atlas (AT-1000) format PC board style instead of the made-for-Kato (KT-1000) style. The Atlas board has a separate wired capacitor making the board flatter overall. In the past this feature has allowed me to cut off the board mounts and move the decoder forward or back to make room for a speaker. I can always find a place to stuff the capacitor! It turns out with this GP35 I could've used the Kato style board without issue, but here's what I did.



47. I mounted the separate capacitor above the driveshaft and attached its heat-shrink tubing to the metal frame protrusion with a drop of super glue to hold it in place, yet still be removeable. I tucked the truck power leads into the frame as well, leaving a flat surface to mount the speaker. I solder all of my connections for reliability.

STEP 12: INSTALL TSUNAMI DECODER/SPEAKER *CONT ...*



48. Here's the RailMaster 1425-8 speaker installed, and headlight wiring in place. After testing the headlights one more time, shrank the heat-shrink tubing. I perform assembly like this on a Bowser foam locomotive cradle, with the chassis in the gully and the body shell sitting above and behind the chassis. I leave enough extra wire to easily make the solder connections. If the need to disassemble arises, it's easy to remove the shell and set it out of the way on the Bowser cradle.

STEP 12: FINISHING UP

49. The finished model (almost, read on ...).

That pretty much wraps up assembly, so now it's time to fix some mistakes. Nobody is perfect and there's generally something that goes wrong.

When removing the masking tape after painting the black patches, I lifted accidentally a layer or two of Dullcote and weathering. It didn't seem too bad until I was going over the finished model pictures, and it stood out like a sore thumb.

I couldn't let it go this way so here's the story ...

STEP 12: FINISHING UP *CONTINUED ...*

50-51. This shiny spot under the black patch was too much to handle, so I mixed a drop of black paint into a blob of white gouache to create a gray color. I applied it with a small brush to the area, dried it within seconds using a hair dryer, then blotted most of it off using a cosmetic sponge. I rubbed over the gray color with my finger to work it into the green and remove excess, then brushed a light coat of Dullcote over it.

Here are several photos [52-57] of the finished model! ☑

STEP 12: FINISHING UP *CONTINUED ...*

Click here for reader comments

Christopher Thompson

Chris Thompson has been a life-long model builder. He has given several presentations and clinics on his building and weathering methods at NMRA conventions and other gatherings.

While he does not currently have his own layout, he enjoys contributing to friends' layouts including Jack Ozanich's Atlantic Great Eastern Rwy. Chris worked in the retail hobby industry for 15 years before hiring-out with Conrail (now Norfolk Southern) in 1997 so he could play with the big trains. His wife Laurie and son Nick are very supportive of his hobby. ■

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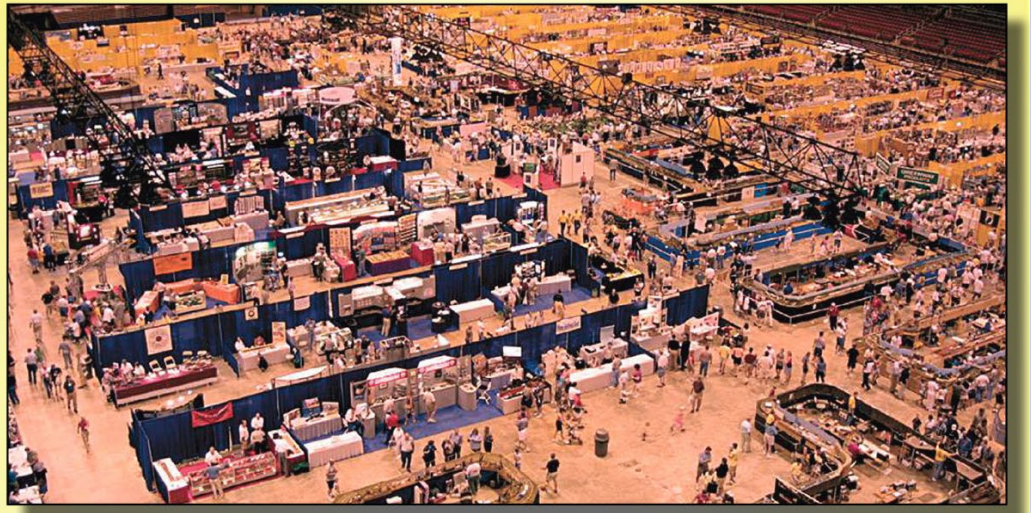

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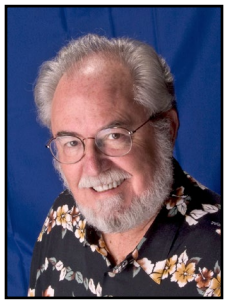

JUNE NEWS column

Richard Bale *and* Jeff Shultz

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Anspach receives Gerald Best award

Dr. Denny S. Anspach, M.D., a long-time model railroad hobbyist and activist on behalf of the California State Railroad Museum, is the recipient of the 2014 Gerald M. Best Senior Achievement Award. As founding president of the Sacramento Trust for Historic Preservation, Anspach proposed the establishment and construction of a first-class railroad museum in California to house the historically significant collection of the Pacific Coast Chapter of the Railroad & Locomotive Historical Society. To gain support for the project from then-California Gov. Ronald Reagan, Anspach hosted an elegant dinner in 1970

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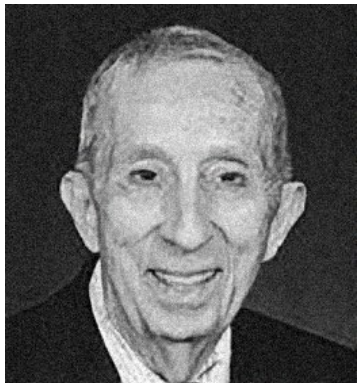
for the Reagans on board Lucius Beebe's old Georgia Northern "Gold Coast" private car. The seed was planted, and today the California State Railroad Museum is recognized as one of the premier railroad museums in the world. The affiliated library holds a large railroad collection for research including the National Model Railroad Association library formerly housed at Chattanooga, TN. A graduate of the Stanford University School of Medicine, Anspach retired after 46 years as a diagnostic radiologist specializing in breast care ...

Joe Collias 1928-2015



Noted railroad photographer and author Joe G. Collias died April 30, 2015 in St. Louis, MO. Collias is best known in the model railroad community for the large collection of freight car and steam locomotive photographs he shared with fellow enthusiasts. He was a prolific photographer, often driving thousands of miles to capture a subject. He was active in several railroad historical societies and authored numerous articles and seven hard-bound books including *The Last of Steam, The Search for Steam, MoPac Power, Frisco Power, The Missouri Pacific Lines in Color, The Texas & Pacific, and Katy Power.* Collias is survived by his wife, Marjorie ...

Bill McClung to retire

Bill McClung has announced his retirement from InterMountain Railway. McClung became general manager of

Red Caboose when the company was formed in 1981 specifically to develop an O scale GP9. InterMountain owned the GP9 tooling but Red Caboose retained the exclusive marketing rights for several years. The tooling was later sold to Atlas O. InterMountain assumed responsibilities for manufacturing and distributing Red Caboose HO and N scale products in 2010. McClung joined InterMountain as vice president of sales that same year. In late 2014, Fox Valley Models acquired the N scale portion of the Red Caboose line. Prior to his involvement with Red Caboose, McClung was associated for many years with Precision Scale Products. The retiree told MRH that he has been pretty busy for the last 40 years and is now looking forward to having some time to do a little modeling. He will be relocating this month from Colorado to Crescent City, CA ...

NRHSA selects new president

Noel Bays, owner of Hobby Force, Ontario, OH, has been named president of the National Retail Hobby Stores Association. His election by the board of NRHSA was conducted during the association's 2015 NHSA Convention in Las Vegas, NV. Bays succeeds Bruce Throne of Walt's Hobby, Syracuse, NY ...

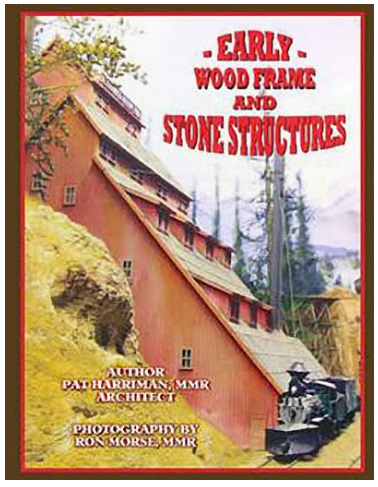
NEW CLUB CARS

The **Rochester Model Railroad Club** is selling a 55-ton USRA twin-bay hopper car decorated for the Seneca Valley Railroad. The HO scale custom kit is available at $21.00 plus $6.00 shipping

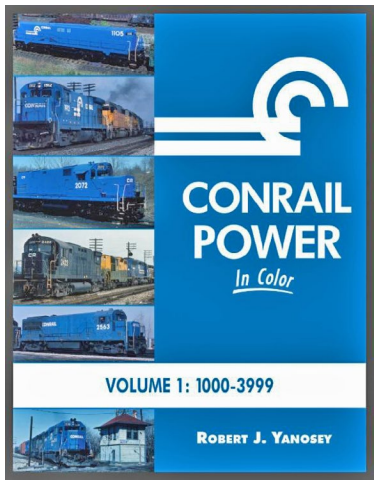
for the first car. Additional kits are priced at $19.00 plus $1.00 shipping. For more information visit rocmrrc.com.

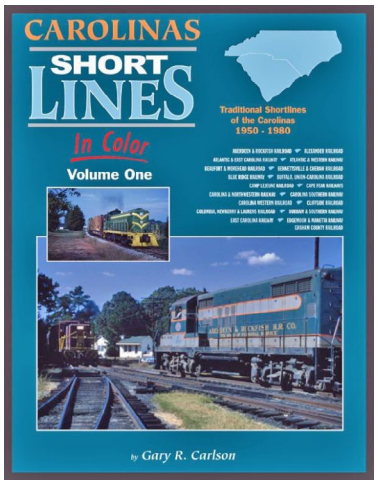
NEW PRODUCTS FOR ALL SCALES

Atlas Model Railroad Company has announced the availability of free, downloadable track planning software that can be used to create layouts in HO, N, and O scales using Atlas track. The software allows the finished design to be viewed as a 3D model and then generates a shopping list of track pieces needed to build the layout. The program is currently available for Microsoft Windows XP, Vista, 7 and 8 only. It is available at download.atlasrr.com/Software/AtlasTPS_Setup_0_9_29a.exe.



Early Wood Frame & Stone Structures is a new book of plans from Pat Harriman, MMR. The 196-page book includes plans for 44 original structures specifically designed to meet the limited space available on most model railroad layouts. The author, a licensed architect, includes creative notes on how to modify the structures to achieve various eras and space limitations. The book is spiral bound to conveniently lie flat on a work surface. For ordering information visit store.mrhmag.com.



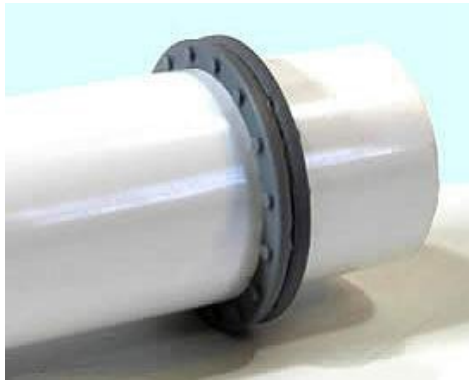


New publications now available from **Morning Sun Books** include *Conrail Power In Color, Volume 1,* that documents a wide range of equipment from all the major locomotive builders.

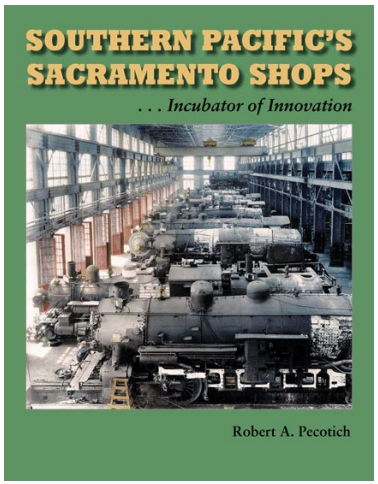
Also new is *Carolinas Short Lines In Color, Volume 1.* The book provides a look at the traditional shortlines of North and South Carolina from 1950 through the '80s. Roads include A&RF, A&EC, A&W, B&M, Blue Ridge, Camp Lejeune, Cape Fear, C&NW, CS, CW, Cliffside, CN&L, D&S, EC, E&M, and the Graham County Railroad.

Trackside in the Maritimes 1967-1993, with Bill Linley presents striking illustrations of CN, CP and various shortlines throughout Nova Scotia, New Brunswick, and Prince Edward Island. A wide variety of MLW-Alco power dominated these eastern routes, but GM-EMDs, CLC-FMs, GEs, Budd RDCs, and minority builders are also featured. For additional information visit morningsunbooks.com.

Peach Creek Shops is selling scale flanges designed for Plastruct tubing. The realistically detailed flanges offer an alternative to the



out-of-scale fittings available from Plastruct. Seven different sizes are available that are designed to fit snugly over the 1", 7/8", ¾, 5/8", ½", 3/8", and ¼" Plastruct pipe. The flanges are sold in packages 12. The four larger sizes are available at $5.95 per pack. The three smaller sizes are priced at $4.95 per pack. To order visit peachcreekshops.com/stlkits.php.



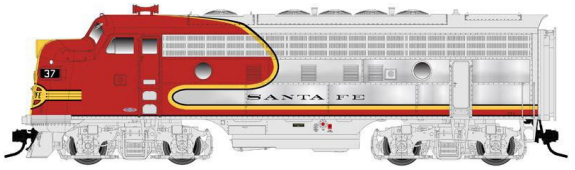
Signature Press has reissued *Southern Pacific's Sacramento Shops,* by Robert Pecotich. This extensively researched book documents the SP's oldest and largest shops, where hundreds of steam and diesel locomotives and thousands of freight and passenger cars were built or rebuilt between 1868 and 1990. After the demise of steam, the shops were reconfigured for diesel locomotive repair. The 496-page book includes over 600 photos, along with 21 drawings and maps. It has both a bibliography and an index. It is available direct from the publisher at signaturepress.com.

O SCALE PRODUCT NEWS

Atlas O plans to release a new group of 40-foot wood refrigerator cars during the fourth quarter of 2015. The prototype ice

reefers were built by Pullman in 1930 for the Northern Refrigerator Car Co. Spotting features include four operating rooftop ice hatches, a horizontal brake wheel mounted on a vertical shaft, and a USRA-style fishbelly steel underframe. In addition to the Fox Head Beer shown here, billboard-style decorating schemes are Alt-Brau Beer, Storck's Beer, Altoona 36 Lager Beer, Fink's Purple Ribbon Beer, and Old Reading Pilsner Beer.

Also scheduled for release late this year are 68-foot flat cars and 62-foot bulkhead flats. The Atlas O Trainman series models will be decorated for BC Rail, Alaska Railroad, Rio Grande, TTX, Mississippi & Skuna Valley, and Department of Defense. Both cars will be available for 2-rail and 3-rail operation. For additional information contact your dealer or visit atlaso.com.



Atlas O has informed MRH of several last minute upgrades to the Atlas Master series F7 diesel locomotive we reported on in our April 2015 edition. The fuel tank is being retooled to have the correct height. This will also be

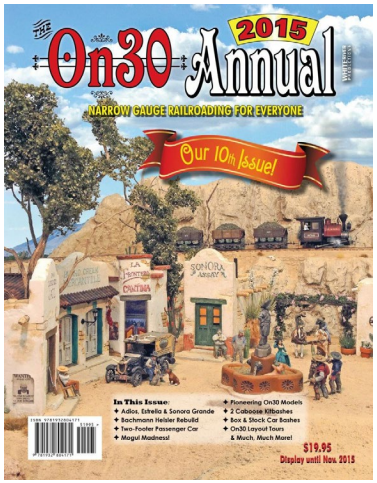
available as a separate part to retrofit older models, including prior runs of Atlas F2s and F3s. The pilot on passenger versions of the F7A is being retooled and will be used as appropriate to the prototype road. On this run the new passenger pilot will be used on the PRR model. Also on PRR models, the Trainphone antenna will be mounted on all A units. New tooling has been cut for the full-size headlight on the nose door of the Santa Fe version. Chrome plating will be used on the side panels of the Santa Fe Warbonnet units to reflect the polished stainless steel of the prototype.

The F7 units in this production run represent locomotives with Type II side panels equipped with Farr filter panels. Road names will be Erie Lackawanna, Milwaukee Road, Santa Fe, Amtrak, and Denver & Rio Grande with the latter decorated to match California Zephyr streamlined cars. For additional information visit atlaso.com/welcome.htm.

Bachmann Trains is selling an On30 scale 50-ton Whitcomb center-cab diesel in several new painted but unlettered schemes. They include yellow with black stripes (here), orange and cream, and red and yellow. A black model is available lettered for Midwest Quarry. The model comes with DCC installed for speed, direction and lights. It is ready for the addition of a 16-bit Tsunami plug-and-play sound system which is sold separately.

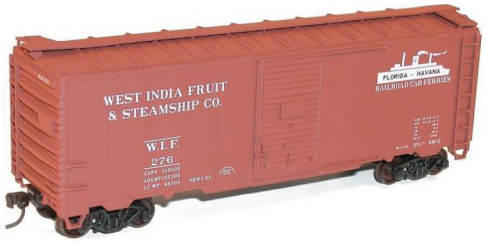
Bachmann has released its O scale GP38 diesel locomotive with new road names. In addition to the CSX scheme shown

here the ready-to-run model is available for Union Pacific, Canadian National, and Santa Fe. Both two-rail and three-rail versions are available.



The 10th anniversary edition of the **On30 Annual** has been released by **White River Productions**. Although the publication continues under the editorship of Chris Lane, this is the first edition under the auspices of its new owner White River Publications. The 116-page, softbound 2015 edition includes more than 20 articles on On30 -- currently the most active segment of narrow gauge modeling. The publication is available from dealers or direct at $19.95. For additional information visit whiteriverproductions.com.

HO SCALE PRODUCT NEWS



New HO scale kits from **Accurail** include a 40' AAR steel boxcar decorated for West India Fruit

& Steamship Co. The model has Dreadnaught ends and Youngstown doors.

Accurail has also released a USRA twin-bay hopper car decorated for Pittsburgh & West Virginia and a Santa Fe 50' boxcar with 8' Superior doors and Improved Dreadnaught ends.

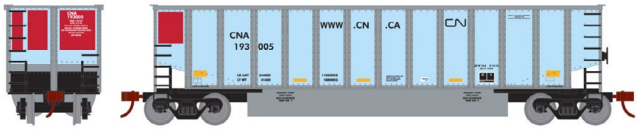
This Southern Railway 6450 cu.ft. triple-bay covered hopper is available now as an economically priced HO scale kit from Accurail.

Accurail's 40-foot Milwaukee Road combo-door box-car features a plug door, a Youngstown sliding door, and Improved Dreadnaught ends.

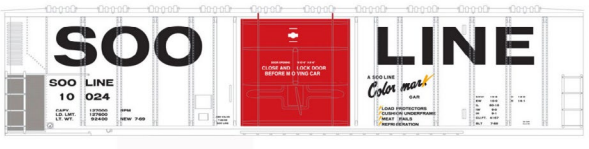
Additional new kits from Accurail include a Canadian National 70-ton triple-bay hopper car with offset sides, a 3-pack of 40-foot steel boxcars decorated for New York

Central, and a 3-pack of Rock Island 41-foot AAR steel gon-dola cars. All Accurail kits include appropriate trucks and Accumate couplers. See your dealer or visit accurail.com for additional information.

Athearn's latest production schedule lists new HO scale items set for release in March 2016. Dealer reservations for these items are due this month. Heading the list is an EMD GP50 locomotive deco-rated in the black and green scheme of Norfolk Southern/ECO. Two road numbers will be available.



Freight cars due next March include a group of HO scale Bethgon Coalporters with separate wire grab irons, a coal load, and 36-inch machined wheel sets in appropriate trucks. Road names will be CN (above), AEPX, CSX, Jefferson Energy Center, Kansas City Power & Light, and Portland General Electric. An undeco-rated model will also be available. The ready-to-roll models will have an MSRP of $39.89. They will also be available in 5-packs with different numbers at a list price of $198.98.

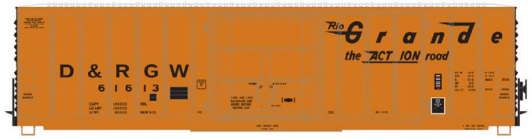


A 57-foot mechanical refrig-erator car will also be released next March. Road

names will be Soo Line (above), Santa Fe, Burlington Northern (yellow), Erie-Lackawanna, Northern Pacific, and American Refrigerator Line. The cars will be available in three different road numbers at an MSRP of $36.98 each.

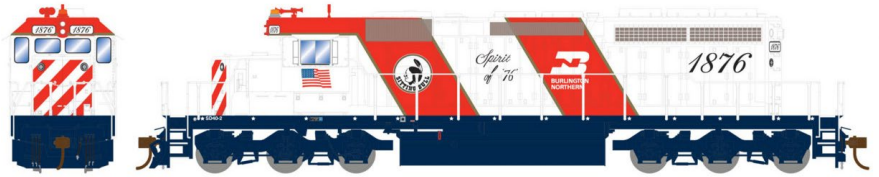
Athearn's March release includes a group of bay-window steel cabooses. Road names for the ready-to- roll HO scale models will be B&O (black body), B&O (175th Anniversary scheme), Canadian Pacific, Erie Lackawanna, and Rock Island. Additional models scheduled for release next March include a single dome tank car and a 40' trailer for Piggyback service.

A new production run of Athearn Genesis series SD70ACe locomotives is due to be released in April 2016. Numerous road specific details will be applied to the models including variations in antennae, cab style, handrails, and headlight position. In addition to the Western Pacific livery shown here, additional Union Pacific heritage schemes will be Missouri Pacific and MKT. Norfolk Southern heritage schemes will be offered for Savannah & Atlanta, Erie, and Penn Central. Both blue and yellow EMD demo models will complete this run.



A Genesis series 50-foot PC&F insulated boxcar will be available in May in six different road names.

IIn addition to the Denver & Rio Grande Western car shown here, other roads will include Burlington Northern, Conrail, MP/TP, Illinois Central ex MP/TP, and Frisco.

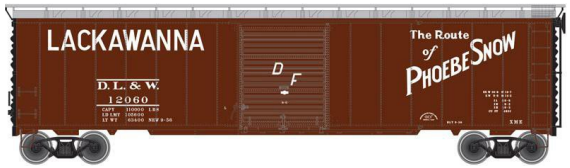


Also coming in May is a ready-to-roll HO scale SD40-2 locomotive with factory installed sound. Road names will be Burlington Northern (green and bicentennial schemes), Norfolk Western, MKT (green and yellow scheme), Southern, and CNW (standard scheme and Falcon Service). The RTR drive can be upgraded to a Genesis motor using Athearn's retrofit kit #ATHG63839 which is available separately. For more information on these future models contact a dealer or visit athearn.com.

Atlas has scheduled a third quarter release for a 2743 cu.ft. steel gondola. Between 1995 and 1999 Thrall Car Manufacturing produced over 6,700 of the prototypes. Trinity purchased Thrall in 2001 and continued to build the same car design under the TrinityRail name until 2005. Atlas will deliver the HO scale Master series model decorated for US Steel, AK Steel, Armco Steel, Bethlehem Steel, Republic Steel, Geneva Works USS, Nucor, CSX, CSI, TFM, Soo Line and Union Railroad.

Road names on a new production run of 40-foot wood reefers coming in the last quarter of 2015 have been announced. In

addition to the Monarch Brewing car shown here, billboard-style decorating schemes will include Joan of Arc, Peoria Creamery, Puget Sound Butter & Egg Co., White House Milk, Scholosser Brothers Beer, and Stokely's Vegetables. Spotting features include rooftop ice hatches, a horizontal brake wheel mounted on a vertical shaft, and a USRA-style fishbelly steel underframe. The HO scale ready-to-run model comes with separate door bars, grab irons, and uncoupling bars.



An Atlas Master Line 50-foot postwar boxcar is also scheduled for release late this year from Atlas. This HO scale car is a former Branchline model and will have either 8-foot or 9-foot sliding Youngstown steel doors depending on prototype practice. Road names will be Bangor & Aroostook, Great Northern, Conrail, Reading, Rio Grande, and Lackawanna.

Atlas has upgraded the tooling for the diecast frame and sill of its Master series EMD GP7 diesel locomotive. The HO scale ready-to-run model will be available late this year decorated for Erie Lackawanna, Denver & Rio Grande Western, Santa Fe, Seaboard Air Line, Canadian National, MKT, Rock Island and as shown above, Toronto, Hamilton & Buffalo.

Undecorated models with and without dynamic brakes will also be available. For additional information on Atlas products see your dealer or visit atlasrr.com.

Bachmann Trains has HO scale piggyback flat cars paired with 35-foot ribbed trailers. In addition to the New York Central flat with Pacemaker Freight Service trailer shown above, combinations available now include Santa Fe/Navajo Freight, Baltimore & Ohio/Railway Express Agency, New Haven/New Haven, Reading/Reading, Western Maryland/Western Maryland, and Atlantic Coast Line/Yale Freight. For additional information see your dealer or visit bachmanntrains.com.

BLMA plans to release ATSF class Bx-166 60-foot insulated boxcars next month. The diagonal bracing on either side of the double plug-doors are the definitive spotting feature of these unique cars. The nominal 60' cars measures 61'6" in length and 66' ½" over the strikers. Santa Fe built 300 Bx-166 cars in their Topeka, KS shops in 1974. BLMA will offer the HO scale model in both the as-delivered Super Shock Control scheme (top) and the subsequent 1982

Shock Control scheme. Each version will be available in 24 different numbers. Features of the ready-to-run model include wire uncoupling levers, separately applied wire grab irons, etched-metal brake wheel platforms, and Kadee #58 knuckle couplers. See blmamodels.com for more information.

Bowser is taking dealer reservations for two versions of an HO scale ready-to-run 42-foot quad-bay open hopper car. Class H21 cars with clamshell hoppers will be available decorated for Bertha Coal, Bethlehem Mines, Erie, and PRR with a circle keystone logo. Class H21 cars with conventional sawtooth hopper doors will be available in two PRR schemes: with a circle keystone, and with a shadow keystone logo.

A class H22 car with slatted coke-gate sides and sawtooth hoppers will be available with a PRR circle keystone logo. H22 coke cars with clamshell hoppers will be available decorated for PRR, PRR circle keystone, and Pennsylvania Lines (above). For additional information visit bowser-trains.com.

East Coast Railroads is selling Norfolk Southern steel cupola cabooses decorated in red with arched bronze-gold lettering. The HO scale ready-to-run models are produced exclusively for ECR by Atlas Model Railroad Co. NS cabooses 369 and 376 are

available now. The models have an MSRP of $29.95 each. To order visit eastcoastrailroads.com/caboose/RED.htm.

Fox Valley Models is taking reservations for a new production run of HO scale 7-post boxcars. The HO scale ready-to-run models are based on a prototype built at Fond du Lac, WI. The models feature separate ladders, separate metal grab irons, etched metal end walks, metal wheelsets, and Kadee couplers. Cars with X-panel roofs will be available for Soo Line-BCR, SOO Line (red letters), CSX (blue), and Wisconsin Central. Models with diagonal panel roofs will be available for Burlington Northern, BNSF (wedge), Montana Rail Link, and Great Northern. Each road name will be offered in three different numbers. The ready-to-run models have an MSRP of $30.95. Availability is planned for the fourth quarter of 2015. InterMountain Railway is responsible for marketing Fox Valley Models. For additional information contact your dealer or visit intermountain-railway.com.

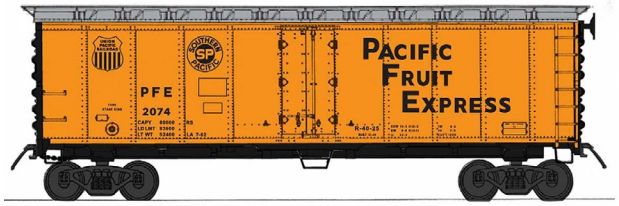
Funaro & Camerlengo is selling an HO scale craftsman kit for a Baltimore & Ohio class N12g twin-bay hopper car. The kit consists of a one-piece cast resin body, detail parts, and appropriate decals. The kit is available with either AB or K brake details. Also available now are cast resin kits for

Pennsylvania Railroad class K8 single and double-deck stock cars. F&C kits do not come with trucks or couplers. For additional information visit fandckits.com.

Glacier Park Models is importing a handcrafted HO scale brass model of a Union Pacific 4-8-8-4 Big Boy. UP took delivery of 20 Big Boys in 1941, with five more arriving three years later. They were all retired by 1962. Six highly-detailed models of the Big Boy will be produced including #4000 (as delivered), #4005 (oil version), #4014 (excursion version), #4015 (with modified buffer pilot), #4019 (1946 version with smoke lifters), and #4024 (the last delivered prototype). Each model will have dual mode DCC and LokSound. The models are available exclusively from brasstrain.com at an estimated cost of $3495.00 each. For additional information visit brasstrains.com/NewBrass/Trains/Projects/783/HO-_Scale-Union-Pacific-Big-Boy-4-8-8-4.

Imperial Hobby Productions is offering a 3D-printed shell for an HO scale San Francisco MUNI double-end PCC series 1006-1015 car. The shell, which sells for $125.00, is produced in matte translucent plastic. The shell is designed

for an IHP 3D-printed frame and Bowser #125100 mechanism (both sold separately). For additional details including information on limited edition decals visit shapeways.com/product/MH982WJW5/ho-muni-double-end-pcc-trolley-body.



New items scheduled for release by **InterMountain Railway** in July include a group of class R-40-25 mechanical refrigerator cars. In addition to the PFE gothic scheme shown here, the HO scale ready-to- run model will be available decorated for PFE (original color double heralds), PFE (double black and white heralds), and Northern Pacific (Vista Dome slogan).

Maxi IV stack cars are also scheduled for release next month. Features of the 53-foot ' well cars include etched metal open walkways and Kadee couplers. Sold in three-unit sets, HO scale models of the early units will be available decorated for BNSF, Massachusetts Central, Providence & Worcester, and BRAN Pacer Stacktrain as shown here. Later versions of the prototype will be available for DTTX, Arkansas & Oklahoma, and Northwest Container. An undecorated version will also be available.

Another release of InterMountain's 40-foot 12-panel boxcars should arrive sometime in August. The

prototype was popular with several railroads, including the Great Northern that owned nearly 5,000 of them during the late 1940s and early 1950s. InterMountain will offer the HO scale ready-to-run model in four Great Northern schemes: Sky Blue, mineral red, vermillion red, and the orange and green express livery shown. Cars decorated for Santa Fe and SP&S are also in this release.

The next release of InterMountain's HO scale bi-level auto rack is expected late this summer. Road names will be Santa Fe, Norfolk Southern, CSX, Canadian National, Grand Trunk Western, Canadian Pacific, BNSF, Southern Pacific, Louisville & Nashville, and Western Pacific. Visit intermountain-railway.com for additional information.

Kadee will release a new 50-foot PS-1 boxcar decorated for ATSF in August. Identifying features will be the Pullman-Standard washboard ends and six-panel 8-foot sliding door with slightly raised diamond pattern in the center of each panel.

Also scheduled for release in August is a Pittsburg & Shawmut 50-ton AAR twin-bay hopper car. Kadee will

decorate the open hopper in the as-built 1947 scheme with black paint and hexagon herald. More information at kadee.com.

KatoUSA is offering a limited number of HO scale EMD GP35 Phase 1a locomotives hand decorated by Kobo Custom Paint of Japan. Models currently being offered are Missouri Pacific 606 (above), Chicago & Eastern Illinois 666, and Montana Rail Link 401 and 402 (below). The ready-to-run models replicate the 2500 hp four-axle locomotive EMD manufactured between October 1963 and January 1965.

Features include directional headlights, all-wheel electrical pickup, blackened metal wheels, and pre-installed handrails. The DC models come with an 8-pin plug for installation of an aftermarket DCC decoder.

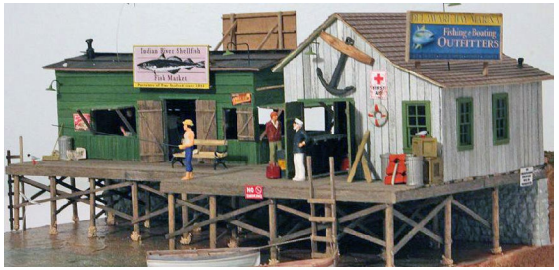
Kato USA plans to deliver new GE C44-9W locomotives decorated for SP and UP in September. Two numbers will be available for each road. Upgrades over previous releases of the ready-to-run model include a redesigned battery box area, the addition of an A/C unit, and late-style high-adhesion trucks. One of the most notable changes is raising the ditch lights to

the deck. The HO scale model will be available for DC operation with a standard 8-pin plug, as well as with factory installed ESU Loksound DCC/Sound. For additional information see your dealer or visit katousa.com.

Model Memories, the catenary and signal bridge specialist, also sells finely detailed roof vents for HO scale Metroliners. The preformed etched stainless steel vents match the finish and contour of Walthers Metroliner cars. For additional information visit modelmemories.com.

Mullet River Model Works has an HO scale kit that builds into a prototypically accurate C&NW wood caboose. The kit includes a cast white metal underframe and correct decals. Ladders and railings are composed of etched brass. All grab iron locations are burned into the laser-cut plywood body.

Trucks and couplers are not included. The craftsman-type kit has an MSRP of $45.00. For additional information visit mullet-rivermodelworks.com.



Nick and Nora Designs has introduced Henlopen Landing, a nicely detailed complex of waterfront structures built on a pier. The small seaside town offers fishing, bait, a boat shop, and a fresh fish market. The board-on-board construction includes all material to make the pier and both structures. Signage, unpainted resin details, and a cast plaster retaining wall are included. For more information visit nickandnoradesigns.com.

The next **Walthers** Proto series name-train project will be a 1960s version of the Pennsylvania Railroad's Broadway Limited. Walthers will offer nine deskirted passenger cars including an 85-foot View series observation with a large tail sign, a 70-foot BM70n baggage-mail, and rebuilt Harbor series sleep lounges. Delivery will begin in September with an Inn series 21-roomette sleeper. Additional 85-foot cars scheduled for release through April 2016 include a Pullman-Standard Creek series 12 duplex

4-bedroom sleeper, ACF Imperial series 4-4-2 sleeper, Budd 68-seat diner, Budd kitchen-dormitory, and P-S Rapids series 10-6 sleeper. The ready-to-run models come with appropriate car name and number decals.

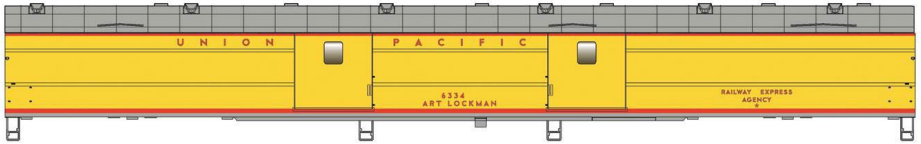
A deluxe set of the nine cars will be available with LED interior lighting, printed car names and numbers, and 90 Preiser passengers and crew figures installed throughout the train. Availability of the deluxe car sets is limited to 250 sets.

To lead the PRR Broadway Limited, Walthers will release Proto series PRR EMD E8 diesels in May 2016. The class HP-22 E8s will be available singly and as matching A-A sets. The locomotives will be decorated with a single gold stripe, 16" serif lettering, and a keystone logo. Both DC and SoundTraxx Tsunami sound/DCC will be offered. See your dealer for complete details or visit walthers.com/exec/page/broadway_limited.

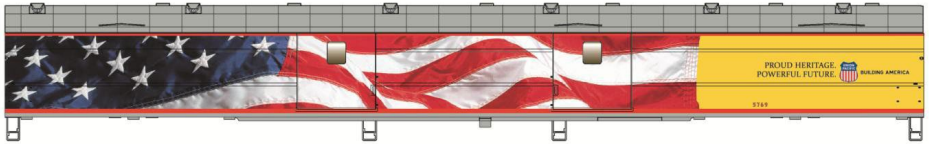
Walthers is scheduled to release a new production run of EMD SD9 diesels this month. This is a limited run with three numbers for each road name. In addition to the Duluth, Missabe & Iron Range version shown here, the HO scale Proto series model will be available decorated for Burlington Northern (green 1970-1990 scheme), Southern Pacific (Phase 1 1954-1961), and Southern Pacific (1958-1965 bloody nose scheme). The ready-to-run model will be available for standard DC operation as well as with Tsunami Sound/DCC.

Additional new items scheduled for release from Walthers this month include a Proto series 85-foot Pullman-

Standard 56-seat coach. Features worth noting include appropriate window tinting, individual steel grab irons, 36-inch turned metal wheels, and optional interior lighting. Each model comes with car name and number decals. Road names will be Baltimore & Ohio, Illinois Central, Kansas City Southern, Norfolk & Western, and New York Central.



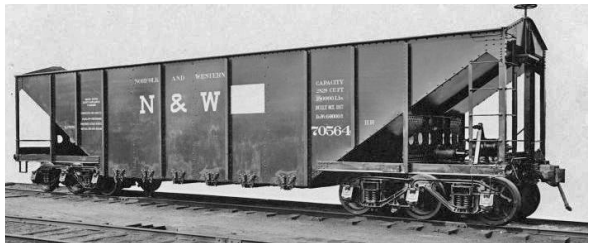
Walthers is quoting an October release date for two versions of Union Pacific 85-foot ACF baggage cars. A standard UP excursion fleet yellow scheme (above) will be available, as well as a special Heritage Fleet American Flag scheme as shown below.



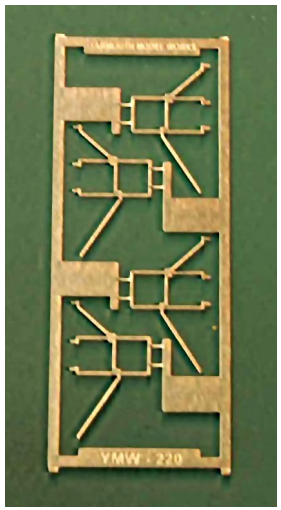
For additional information on these new Walthers products contact your dealer or visit walthers.com/exec/page/npc_fea_ja.

Westerfield is selling craftsman quality cast resin kits for several variations of PFE wood refrigerator cars. HO scale kits available now include

class R-30-4 cars (original version and later version with subsequent safety appliances), R-30-5 (with safety appliances), and R-30-6 (original). These are one- piece body kits with details and appropriate decals. Trucks and couplers are not included.



Westerfield sells a wide range of prototypically accurate resin kits for hopper cars including Norfolk & Western's unique class HR 100 ton car. The HO scale resin model replicates the one-of-a-kind experiment N&W built in 1917 that continued to see service until 1951. Correct Lewis/Pilcher six- wheel trucks are available from Bethlehem Car Works (bethlehemcarworks.com). For additional information on Westerfield products visit westerfieldmodels.com.

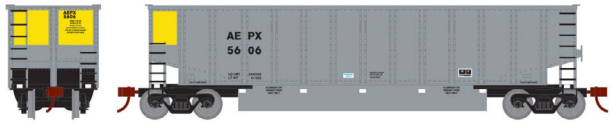


Yarmouth Model Works has released several new etched metal detail parts including replacement sill steps (far left) for Tangent Models GSC tank cars. Also new is a drilling template for Kadee ladders (left).

Also available are full-width side patch panels with rivet detail for PRR X29 boxcars. For information on these and other products visit yarmouthmodelworks.com.

N SCALE PRODUCT NEWS

Athearn will introduce a new N scale bay-window steel caboose in March 2016. Road names for the ready-to-roll model will be Canadian Pacific, Erie-Lackawanna, Rock Island, B&O (black body), and as shown here, B&O 175th Anniversary scheme.



Also coming from Athearn next March is a group of Bethgon Coalporters. The N scale models will come with a simulated coal load. Road names will be AEPX (above), CN, CSX, Jefferson Energy Center, Kansas City Power & Light, and Portland General Electric.

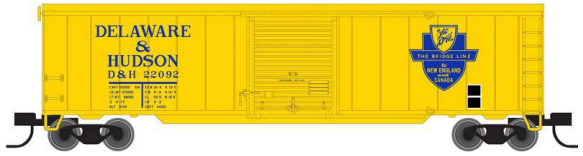
A 57-foot mechanical refrigerator car will also be released next March. Road names will be Soo Line, Burlington Northern (yellow), Erie-Lackawanna, Northern Pacific, American Refrigerator Line, and Santa Fe. The cars will be available in three different road numbers. For more information on these future models contact a dealer or visit athearn.com.

Atlas will release a new production run of its Alco C420 diesel locomotive in the fourth quarter of this year. Alco built 131 of the prototypes between 1963 and 1969. Phase 2a versions with a low nose and handrail stanchions mounted on the top of the side sill will be available decorated for Seaboard Coast Line, Cuyahoga Valley Scenic, Guilford-Delaware & Hudson, and Tennessee Central. A Phase 2a version with a high hood will be available in two Norfolk & Western paint schemes.

Phase 2b versions of the N scale ready-to-run model with stanchions mounted on the side of the sill will be available with a low hood for Lehigh & Hudson River Railroad (above). Phase 2b versions with a high nose will be available for Louisville & Nashville, and two Long Island paint schemes. Undecorated models of each version will also be available.

Atlas has scheduled a third quarter release for a 2743 cu.ft. steel gondola with an interior length of 52' 6". Between 1995 and 1999 Thrall Car Manufacturing produced over 6,700 of the prototypes. Trinity purchased Thrall in 2001 and continued to build the same car design under the TrinityRail name until 2005. Atlas will release the N scale Master series model decorated for Armco Steel, US Steel, AK Steel, Bethlehem Steel, Republic Steel, Geneva Works USS, Nucor, CSX, CSI, TFM, Soo Line and Union Railroad.

Atlas has announced road names for a new production run of 40-foot wood reefers coming in the last quarter of 2015. In addition to the Stokely's Brothers car shown here, billboard-style decorating schemes will include Monarch Brewing, Joan of Arc, Peoria Creamery, Puget Sound Butter & Egg Co., White House Milk, and Scholosser Brothers Beers. Spotting features on the N scale model include rooftop ice hatches, a horizontal brake wheel mounted on a vertical shaft, and a USRA-style fish-belly steel underframe.



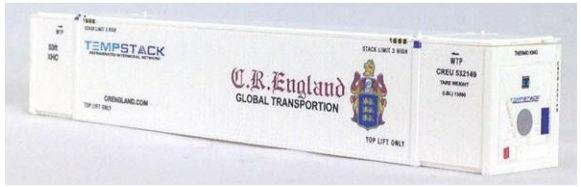
A 50-foot postwar boxcar is scheduled for release late this year from Atlas. The N scale Trainman series model will be available decorated for Delaware & Hudson, Burlington, Green Bay & Western, New York Central, Soo Line, and Southern Pacific. For additional information on Atlas products visit atlasrr.com.

Bachmann Trains is selling an N scale Peter Witt streetcar that is factory equipped with DCC for speed, direction, and lighting. City transit names include Toronto, Chicago Surface Lines, Brooklyn & Queens, Los Angeles Railway, St.

Louis Railway, and Baltimore Transit Co., The ready-to-run model has an MSRP of $150.00. For additional information see your dealer or visit bachmanntrains.com.

Con-Cor has introduced a series of International Euro-style 45-foot sea containers. The newly-tooled N scale models are available in two-packs with different numbers decorated for Wan Hai, BBC News, Yang Ming, Tropical, Matson, and DHL as shown here.

Con-Cor also has 40-foot N scale containers with ThermoKing units installed on the nose. They are decorated for Hapag-Lloyd, Crowley, P&O Ferrymasters, and Maersk.



In addition to the C. R. England scheme shown here, 53-foot overseas containers are available for JB Hunt, CN "Cargo Cool", and Alaska Marine Lines. For additional information contact your dealer or visit con-cor.com.

Fox Valley Models has released information on future production runs of its ES44AC locomotive decorated in Heritage

schemes. The first group, which is expected late this year, will include locomotives decorated for Pennsylvania Railroad, Seaboard System, Pittsburgh & Lake Erie, and Seaboard Coast Line. Group 2 is planned for early 2016 and will include Nashville, Chattanooga & St. Louis; Conrail; Western Maryland; and Georgia Railroad. Road names, but no dates, have been announced for future releases that include Clinchfield, RF&P, New York Central, Chessie System, Chesapeake & Ohio, Monon, New Haven, Atlantic Coast Line, Louisville & Nashville, Baltimore & Ohio, Seaboard, and Family Lines. InterMountain Railway is responsible for marketing Fox Valley Models products. For additional information contact your dealer or visit intermountain-railway.com.

New N scale models coming from **InterMountain Railway** next month include EMD F7A and F7B diesel units. In addition to the classic PRR scheme shown here, the ready-to-run locomotives will be available decorated for Alaska Railroad, Great Northern (Big Sky blue), Great Northern (Loewy green scheme), Ferrocarriles Nacionales de México, MKT, Ohio Central, and Western Maryland.

Class R-40-23 steel refrigerator cars are also scheduled for release next month. Decorating schemes on the N scale models will be Northern Pacific (Mainstreet slogan), AGAR, PFE (gothic bold), PFE (double black and white

heralds), and PFE (multi-color heralds). See your dealer or visit intermountain-railway.com for additional information.

KatoUSA has several new N scale products coming in August including GE P42 Genesis locomotives painted in Amtrak's Phase Vb livery.

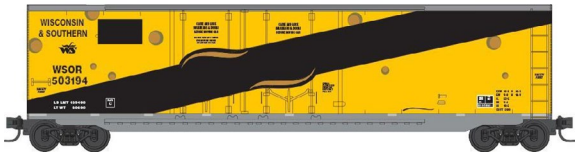
Also due in August are several sets of Gunderson MAXI-I container well-cars. Each of the 5-unit N scale car sets comes with ten 40-foot containers. In addition to the TTX/Maersk combination shown here additional match-ups include TTX/APL, TTX (new logo)/ CAI, BNSF /MOL, and AOK/ Hanjin.

Kato is preparing for an October release of an N scale FEF-3 844 Union Pacific steam locomotive as used on UP's modern day excursion trains. The 4-8-4 locomotive will be factory equipped with sound and DCC and will come in an impressive presentation box.

Kato provided MRH with these computer renderings of a Siemens ACS-64 electric locomotive currently under development. Tooling is underway and Kato plans to have the new model ready for release before Christmas. The N scale model will be decorated as

#621 and will match Amtrak's Amfleet I Phase VI cars.. For additional information contact your dealer or visit katousa.com.

Micro-Trains Line has N scale 70' heavy weight baggage cars decorated for Santa Fe and Canadian Pacific. The 70-foot cars ride on six-wheel Commonwealth trucks.



Wisconsin & Southern decorated one of its 50-foot double plug-door boxcars with a Swiss cheese theme. Micro-Trains is selling an N scale version of this unique scheme.

This 40-foot Great Northern boxcar with double Youngstown doors comes with a wood running board and Bettendorf-type trucks.

Also available now from Micro-Trains is a 40-foot ATSF boxcar with single Youngstown sliding doors. In 1947, the "Ship and Travel Santa Fe All The Way" shown on this model began to replace the Santa Fe's name train slogans.

Micro-Trains is selling this SP 36-foot welded steel caboose with bold gothic lettering. The N scale ready-to-run model is equipped with Bettendorf-type swing-motion trucks. For additional information see your dealer or visit micro-trainsline.com/nscale/nnewsreleases.

Trainworx is taking reservations for a new PS2CD triple-bay covered hopper car scheduled for release late this year. Road names will include five variations of Santa Fe (paint schemes from 1966, 1971, early 1980s, mid-1980s, and a 1990s repaint), D&RGW, Frisco, and two schemes each for Missouri Pacific and Rock Island. The N scale models will have an MSRP of $26.95 each. More information is available at train-worx.com.

NEW DECALS, SIGNS AND FINISHING PRODUCTS

Currently under development for future release by **Microscale** are HO and N scale water slide decals for 40-foot and 50-foot FGEX- Fruit Growers Express early ventilated boxcars, and GM&O-Gulf Mobile & Ohio 40-foot and 50-foot boxcars.

San Juan Decals offers a variety of narrow gauge decals including black and white renumbering sets for Blackstone Models HOn3 scale rolling stock. Specialized narrow gauge decals are available for Denver, South Park & Pacific; Oahu Railway & Land Co.; Colorado Southern, Nevada County Narrow Gauge, and UTLX GRAMPS tank cars. The company also has both HO and O scale decals for Southern Pacific and Pacific Electric steam locomotives. For complete details visit sanjuandecals.com.

SEND US YOUR PRODUCT ANNOUNCEMENTS

If you are a hobby manufacturer with a product announcement, just click here and submit your announcement to us. Our web site and free magazine reach continues to grow, so get on board this new media train! ■

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This month's bonus extras

MRH SUBSCRIBERS GET ACCESS TO FREE BONUS extras, but you do have to be a subscriber! That's easy because subscribing is free (just click this link).

The bonus extras this month include:

- High quality versions of the issue videos
- Construction photos of Shaun Toman's shed layout
- Updated Modeling sizes chart

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Briefly noted at press time ...

Athearn plans to release upgraded single-dome tank cars next March. Road names will be FMC Corp., Gulf, OK Brand, Richfield Oil, Southern Pacific, and Cities Service. The Ready To Roll HO scale model will be available in a choice of three numbers at an MSRP of $26.98 each. Also due next March are 40' Piggyback Trailers. Three numbers each will be available for Santa Fe, C&O, Great Northern, Pennsylvania Railroad, Western Maryland, and Western Pacific. The trailers will list at $25.98 each.

A cab roof Antenna Array for Athearn's Union Pacific and Norfolk Southern SD70ACe locomotives is due for release around the middle of this month. The specialty item will have an MSRP of $12.98 each. Contact your dealer or visit athearn.com ...

Bowser is taking reservations through the 25th of this month for a new run of Baldwin VO 1000 diesel switchers. The HO scale ready-to-run models will be available this winter decorated for Alaska Railroad, Santa Fe (black scheme with zebra stripe), CB&Q (Everywhere West with red and yellow sill), CB&Q (black body with zebra stripe sill), Frisco, NC&StL, Northern Pacific, Pennsylvania Railroad, Reading, SSW Cotton Belt, Southern Pacific (two schemes), and Pacific Lumber Co. Standard DC versions of the locomotive will have an MSRP of $199.95. Models equipped with LokSound Select decoder for DCC and sound will have an MSRP of $299.95. Contact your dealer or visit bowser-trains.com ...

Eastern Seaboard Models has released an N scale flat car with a well deck. The ready-to-run model is based on a prototype built by General Steel Castings in 1958. The model consists of an ABS plastic body and a die cast well/underframe, Atlas Barber S-2a truck frames fitted with Fox Valley 28" metal wheelsets, and Micro-Trains body-mounted couplers. Road names in this release are Delaware & Hudson, Lehigh Valley, New York Central, Penn Central, Conrail, and Allis-Chalmers. The MSRP is $36.95. More info at esmc.com ...

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SELECTED EVENTS

June 2015

(Please note that many events charge a fee. Check individual info website for details.)

AUSTRALIA, VICTORIA, WAVERLEY, June 6-8, Model Railway Exhibition, at Brandon Park Community Centre, 645 Ferntree Gully Road, Glen Waverley. Sponsored by Waverly Model Railway Club. Info at waverleymrc.org.au.

CALIFORNIA, RICHMOND, June 20, BAPM 2015 - The San Francisco Bay Area Prototype Modelers Meet, at St. David's School Hall, 871 Sonoma St. Info at bayareaprototypemodelers.org.

CALIFORNIA, SACRAMENTO, June 24-28, National N Scale Convention, at Double Tree Hotel, 2001 Point West Way. Info at nationalnscaleconvention.com/Sacromento/index.html.

CALIFORNIA, SACRAMENTO, June 27-28, Open House, Sacramento Model Railroad Historical Society, 1990 Grand Avenue. Info at smrhs.com.

COLORADO, GREENWOOD VILLAGE (Metro Denver), June 3-7, NMRA Rocky Mountain Region Annual Smoke & Steam Convention, at Sheraton DTC Hotel, 7100 South Clinton. Info at sas2015.net.

ILLINOIS, ST. CHARLES, June 14, 39th Annual Railroadiana & Model Train Show & Sale, at Kane County Fairgrounds, 525 So. Randall Road. Info at rrshows.com.

KANSAS, OVERLAND PARK, June 20, 12th Annual KCNG Narrow Gauge Meet, at Blue Valley Branch, Johnson County Library, 9000 W 151st Street. Info from Larry Alfred at captlalfred@gmail.com.

MARYLAND, TIMONIUM, June 20-21, Great Scale Model Train Show & Railroad Marketplace, Maryland State Fair, 2200 York Road. Info at gsmts.com.

MISSOURI, JEFFERSON CITY, June 5-7, NMRA Mid-Continent Region Convention, at Capital Plaza Hotel, 415 West McCarty Street. Info at showmecentral.com.

OHIO, BRADFORD, June 13, Railroad Festival at Bradford Railroad Museum, 200 N. Miami, Avenue. Info at bradfordrrmuseum.org/RR%20Festival%202015.pdf.

SOUTH CAROLINA, GREENVILLE, June 5-6, Palmetto Excursion, NMRA South East Region Convention, at Greenville Marriott. Info at palmetto-excursion.org.

July 2015

CALIFORNIA, McCLELLAN, (Metro Sacramento), July 15-19, National Summer Live Steamup, Lions Gate Hotel, 3410 Westover Street. Info at summersteamup.com.

COLORADO, DENVER, July 5-11, National Garden Railway Convention, Crowne Plaza Denver International Airport Hotel, 15500 East 40th Street. Info at ngrc2015.com.

TEXAS, BEAUMONT, July 22-25, NMRA Lone Star Region Convention, Holiday Inn Plaza, 3950 I-10 South Walden Road. Info at lsr2015.com.

Future 2015 (by location)

CANADA, ONTARIO, BRAMPTON, October 3-4, Annual Brampton Model Railway Show with 33,000 square feet of display including N, HO, O and G scale operating equipment. At Brampton Fairgrounds, 12942 Heart Lake Road. Info at bramptonmodelrailwayshow.com.

CANADA, QUEBEC, LAVAL, Oct 3-4, The North Shore Train Show, Complexe Multi-Sports, 955 ave Bois-de-Boulogne. Info at salondutrainrivenord.org/english.html.

CANADA, QUEBEC, MONTREAL, September 26-27, Model Train Exposition, at Sun Youth Centre, 4251 St Urbain Street. Info at montrealmodeltrainexposition.com.

ARIZONA, PRESCOTT VALLEY, August 15, Beat The Heat Swap Meet, at Liberty Traditional School, 3300 N. Lake Valley Road. Sponsored by Central Arizona Model Railroad Club. Info at trainweb.org/camrrc/SwapMeet/SwapMeet.html.

ARIZONA, SCOTTSDALE, September 16-20, NMRA Pacific Southwest Region Convention, at McCormick Scottsdale Hotel, 7401 North Scottsdale Road. Info at psrnmra.org.

CALIFORNIA, TEHACHAPI, August 8-9, Train Show, sponsored by Tehachapi Loop Railroad Club, 410 West D Street. Info at tlrc.club/events.

COLORADO, LONGMONT, December 11-13, 38th Annual Model Railroad Expo, at Boulder County Fairgrounds, Hover & Nelson Roads, sponsored by Boulder Model Railroad Club. Info at bouldermodelrailroadclub.org.

GEORGIA, KENNESAW, September 18-19, Atlanta Railroads Prototype Modelers Meet, at the Southern Museum of Civil War and Locomotive History, 2829 Cherokee Street. Jointly presented by SRHA, Atlantic Coast Line & Seaboard Airline Railroads Historical Society, Central of Georgia Railway Historical Society, Louisville and Nashville Historical Society, and Nashville Chattanooga & St. Louis Preservation Society. Info at srha.net.

INDIANA, SOUTH BEND, September 11-12, NMRA Michiana Division Education & Training Conference, at Comfort Suites University Arena. Info at michiana-nmra.org/events.

ILLINOIS, COLLINSVILLE (Metro St Louis), August 7-8, St. Louis Railroad Prototype Modelers Meet, featuring 16,000 sq. ft. of display area, at Gateway Convention Center, One Gateway Drive. Co-sponsored by RPM committee and the Gateway Division, Mid-Continent Region, NMRA. Info at home.mindspring.com/~icg/rpm/stlrpm.pdf.

ILLINOIS, LISLE (Naperville), October 22-24, 22nd Annual Naperville RPM Conference, hosted by Joe D'elia, at Sheraton Lisle-Chicago Hotel, 3000 Warrenville Road. Info at railroadprototypemodelers.org/naper_meet.htm.

NEBRASKA, NORTH PLATTE, September 18-20, Rail Fest 2015, info at nprailfest.com.

OHIO, DAYTON, November 7-8, 40th Annual Dayton Train Show, at Hara Arena, 1001 Shiloh Road. Info at daytontrainshow.com.

OREGON, PORTLAND, August 23-30, NMRA National Convention, at Double Tree by Hilton Hotel Portland. Info at nmra2015.org.

OREGON, PORTLAND, August 28-30, National Train Show, at Portland Expo Center. Info at nmra2015.org/trainshow.

TEXAS, FOREST HILLS, October 10-11, Texas Western Model Train Show, presented by the Texas Western Model Railroad Club, at Forest Hill Civic Center, 6901 Wichita Street. Info at twmrc.org.

TEXAS, HOUSTON, September 2-5, 35th National Narrow Gauge Convention. Info at nngc-2015.com.

TEXAS, SAN ANTONIO, November 21, Texas Train Show, at Christopher Hall, 16002 Thousand Oaks Drive. Info at texas-trainshow.net.

VIRGINIA, FREDERICKSBURG, September 25-26, 3rd Annual Mid-Atlantic RPM Meet, at Wingate by Wyndham Fredericksburg, 20 Sanford Drive. Info at marpm.org.

Future 2016 and beyond (by location)

CANADA, BRITISH COLUMBIA, SALMON ARM, June 15-19, 2016, Pacific Northwest Region Annual Convention and Train Show.

COLORADO, DENVER, 2017, National Narrow Gauge Convention.

INDIANA, INDIANAPOLIS, July 3-10, 2016, NMRA National Convention and National Train Show. Info at nmra2016.org.

MAINE, AUGUSTA, Sept. 7-10, 2016, 36th National Narrow Gauge Convention. Info at nngc2016.org. ■

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REVERSE RUNNING

commentary

JOE FUGATE

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MAKING THE HOBBY RESPECTABLE AGAIN ...

WHILE TRAINSETS WERE a very popular gift in the 1950s and 60s, it seems today the notion that doing model trains (especially as an adult) means you're odd or strange.

In the popular TV sitcom, *Big Bang Theory,* one of the main characters, an eccentric nerd named Sheldon Cooper, is into model trains. Here's some dialog from the show:

Bernadette: "What are you going to get at the train store, Sheldon?"

Sheldon: "Oh, I'm not buying anything. They're having a lecture. HO-gauge railroading. Half the size of O-gauge, but twice the fun. Very controversial topic."

Howard: "Can you believe grown men sit around and play with toy trains?"

How do we help the general public to once again appreciate the hobby of scale model railroading as a hobby every bit as serious and challenging as restoring cars, ham radios, or woodworking?

Should we just roll over and let this misrepresentation go unchallenged? We need to educate the general public about how the hobby really works with fresh, compelling media. I'm thinking mostly about high quality video, made to network TV standards.

MRH put our money where our mouth is! When we launched TrainMasters TV, executive producer Barry Silverthorn (life-long model railroader with a background in network TV) and I wanted to "make the hobby respectable again" by producing "Discovery Channel"-type train-related video to engage non-modelers as well.

This testimonial from a subscriber shows it is working:

"I signed up for one year just to see how it would work out. It is well produced and entertaining even to the fringe victims of our hobby. I can take the videos and show people what I intend to do and they no longer shake their heads and roll their eyes. They can actually see that the basement will become a model railroad. I think being able to show the videos to potential railroaders is something I never anticipated as a sales tactic."

– Pete V.

While printed hard copy and digital publications are better than nothing, 21st Century society greatly respects well-done, engaging video media. It appears from the testimonial above that our strategy *works.* Often, we talk about problems rather than solutions – well, here's a solution! In this column's commentary thread, we'd like to hear your thoughts on maybe leveraging this goldmine. ☑

▶ STEPPING OUTSIDE THE BOX WITH A CONTRARY VIEW

DERAILMENTS

"TICKET, PLEASE!"

It's a wonderful and quintessentially Indian institution, their sometimes over-crowded commuter trains. But like some other things in India – it has its problems, too!

▶ BIZARRE FACTS AND HUMOR (SUPPOSEDLY)

SOMETHING'S NOT QUITE RIGHT HERE ...

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Coming next issue ...

- Matt Snell builds metal-block flat car loads, step-by-step
- Lewis County club layout in Chehalis, WA
- Building a layout scene, step-by-step
- Make a road with spackling paste
- Kitbashing / scratchbuilding SP passenger cars
- And lots more ...