Rick Norris and his
Rio Grande Southern
» READ NOW

Front cover: MRH visits Rich Norris and his Rio Grande Southern this issue. Rich's layout will be on tour at this summer's Indianapolis NMRA National Convention.

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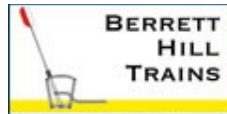
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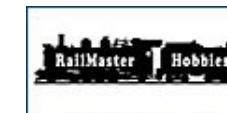
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PUBLISHER'S MUSINGS
editorial

JOE FUGATE

Click here for reader comments

ARTICLES MRH NEEDS ... AND HOW TO SUBMIT THEM!

I GENERALLY FOCUS MORE ON A DOING THE HOBBY topic than what I would call an "MRH housekeeping" magazine topic in my editorials. This time, however, as I look at the MRH article backlog, I'm finding several holes. It's time I devoted an editorial to calling for more articles on the topics we need.

First, a word about the mix of what we currently publish. Every so often, we get feedback chiding us for publishing so many HO articles, or pleading with us to publish more steam locomotive articles. Reality is, the MRH staff can't write everything – the fact is *you,* our readers, provide most of what we publish.

That means if you want *more* steam loco articles or *more* articles on scales other than HO, then you, dear reader, need to go look in the mirror to see *where* we're going to get more of those articles!

We're hoping some of you reading this can write many of these articles we need, or those of you who *know someone* who can write said article will encourage that certain someone to write the article up for us. Remember, articles don't come out of thin air. We must first *get an article* on said topic if we're going to publish it.

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Okay, time to talk about the topics we need and why. Here goes:

Steam-to-diesel transition era articles. Obviously, this means we would like more articles on steam locos themselves, but anything from the 1950s era could apply. More first generation diesel articles, more articles on how to model the details of the 1950s well, more articles on modeling structures and automobiles from the 1950s. Even articles on prototype practices from the 1950s would fit in this category.

Our latest reader survey shows the transition era is still the most popular, but more modern railroading is gaining ground. In MRH staff discussions, one staff member who belongs to a large club noticed a number of younger new members, and they're *all* interested in transition era modeling! The steam-to-diesel transition

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era is simply a fascinating time to model, and many of the younger generation are fascinated with steam. How about we pony up more articles to help them model this fascinating time while there are still some readers out there who actually remember steam in its heyday and can write about modeling it well.

To the degree that we can, the MRH staff is doing our part with articles like the ones we've been doing on brake wheels, doors, trucks, and so on from the 20th Century. But we can't do it all. We need your help!

More projects in scales other than HO. Many articles, especially ones on scenery and DCC, often apply to all scales. We also avoid calling out the scale of a project in the article title when we feel scale doesn't matter that much. That said, there are still article topics where scale does matter, and we need more of you readers

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not modeling in HO to write up and send in your articles.

As a matter of fact, we're so desperate for articles on topics relating to some scales, that when we get such an article, we often move it to the top of the stack so we can throw in a non-HO article as often as possible.

Our greatest struggle is to get more N scale article submissions. We're at a huge disadvantage here for several reasons. First, the N scale modeler population is only about a third the size of the HO modeler population, so right away at best that tells us to expect only one N scale article for every three HO articles we get.

But it's worse than that because there are two, count them *two* N scale-specific model railroading magazines. That means 90 percent of the articles on N scale topics go to those magazines and not MRH.

At the end of the day, we only get about one N scale article for every 30 articles on HO scale modeling projects.

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We're desperate for more N scale modeling project articles. Can you N scale guys out there consider sending a few more N scale articles our way? Please? Pretty please?

Getting into operation. Here at Model Railroad Hobbyist, we're big into prototype ops. For myself, realistic ops is why I do the entire rest of the hobby.

However, we need more on getting started in realistic operation. We need more prototype ops how-tos.

Naturally, the MRH staff can do more here, but to really help show how fun realistic ops can
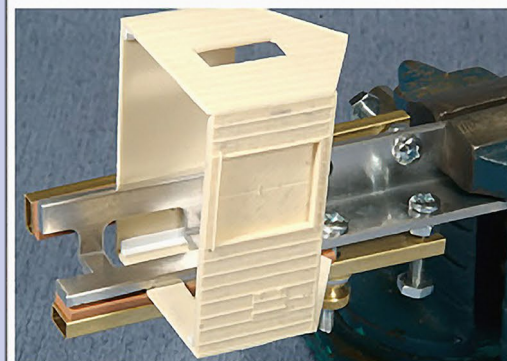
be, we need more of you ops-savvy readers to step forward and share your operation insights as well.

Smaller layout articles. If you have a smaller layout (under 500 square feet) – especially a smaller layout that's got a little something special about it, please consider doing a layout tour article for us. Depending on what you're doing, we may also want to send a TrainMasters TV camera crew out.

We have some TOMA projects planned that we're going to video and write up, but again the MRH staff can't do it all. We'd like to see more from readers on smaller layout projects.

Doing an article for MRH. First, use the article idea form [mrhmag.com/contact/article_idea] to submit your article idea to us. If possible send a small sample of your work – both photos and a bit of text.

If we give you the thumbs up on your idea, then write it up. Remember to include some video or a click-n-spin photo series if you can.

To submit your article to us, please use the article submission form: [mrhmag.com/authors/submit-article]. If your article content is more than 30 MB in size, then upload everything to a folder on Google Drive or Dropbox and put the share link to that folder in the description area of your article submission.

We're hoping to see more articles on these topics! ☑

Click here for reader comments

NOTE: *Joe Fugate has also updated his acrylic painting guide from previous months. You can get the latest version from this month's* Subscriber Bonus downloads.
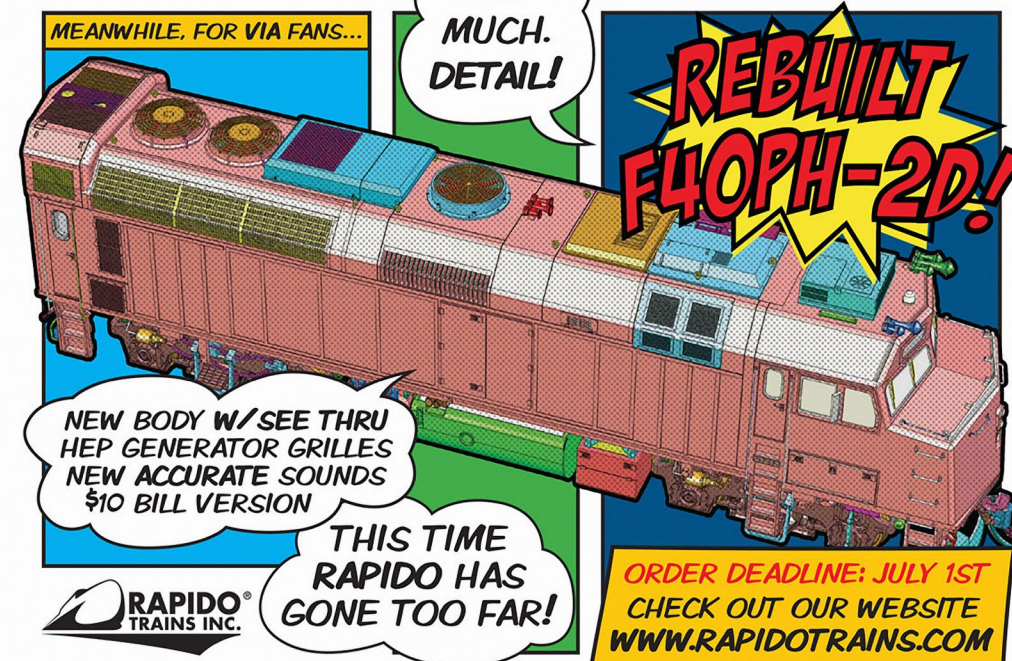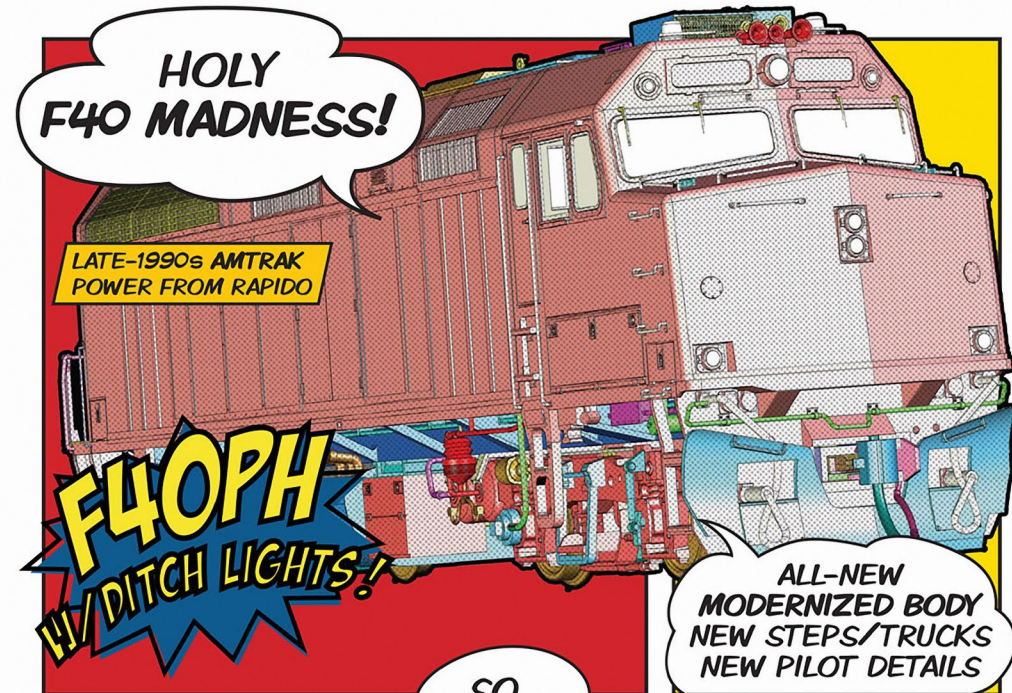
STAFF NOTES

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Growing the hobby (comments on a letter to the editor) … *AND MORE*

We recently got a *letter to the editor* from Nicholas Kalis about two steps he recommends for increasing participation in the hobby by the younger generation. Here in Staff Notes, we'll pull out a few of Nick's points and comment on them. If you want to read the entire letter, please visit this thread on the MRH forum [mrhmag.com/node/26279].

Here's how Nick's letter opened.

> *Letter to the Editor*
>
> ***Reversing the Decline in Participation in Model Railroading Depends on Taking Two Steps***
>
> *Participation in the model railroading hobby will expand if we take to heart some lessons from military modelers. While admittedly anecdotal evidence, a look at the ages of authors published in Kalmbach's* Fine Scale Modeler *reveals military modelers, or more broadly plastic modelers, to be a generation or two younger than model railroaders.*

Our first observation: Nick assumes the hobby is in decline as to participation. We don't think that's a given. Everything has ebb

and flow, so you can't expect all pasttime pursuits to just keep growing forever. The era a lot of the older "hobby is dying" proponents point to as a reference for when the hobby was "healthy" is the 1950s and 60s.

It's our opinion trainsets were a fad toy at that time, just like coonskin caps and TV westerns were all the rage. Fads don't represent "normal" – we may be looking through the wrong end of the telescope here.

Nick goes on to explain his thoughts on why plastic modelers seem to be so much younger than model railroaders.

First, [some] of us see a large model railroad as something we must put off ... This is a major cause of the shrinking of our hobby.

Just what feeds the above-mentioned inertia of the armchair model railroader? Sadly this inertia is too often fed by the modeling press.

Big layouts sell magazines ... however reading and then dreaming about big layouts too often seems to confirm armchair modelers to stay ... in their armchairs.

A second difference between military modelers and ourselves is that while they would never think of modeling tanks, for instance, of a make believe nation, model railroaders create our own fictional railroads.

Perhaps a younger generation sees this as immature? Younger folks have so many avenues for fictionalized amusement, those who turn towards modeling seem to want fidelity to a prototype. Could our fictionalized railroads seem childish to them?

So according to Nick, the hobby is shrinking (a point we feel is debatable) because of a misplaced focus on large freelanced model railroads. In fact, Nick feels getting away from strict prototype modeling makes the hobby seem more childish.

We do agree smaller layouts need more press, and we're doing our part to promote thinking smaller with our One Module Challenge Contest and our emphasis on TOMA layout building methods. In fact, we'll go so far as to say to be a model railroader, you simply need a passion for railroads and modeling them (See the "Reverse Running" column in this issue), you don't even need a layout!

As for freelancing making the hobby seem childish, we believe Nick misses the point. If you look at military miniature wargamers, they don't think twice about creating freelance battle scenarios for their models. That's not unlike model railroaders and their layouts. Model railroaders generally don't create fantasy locos or rolling stock. Only

the setting may be "made up" which is not unlike how the military modelers who use their miniatures in war games make up battle scenarios for their models of actual equipment.

Nick continues ...

Efforts at reducing declining participation in the hobby may be misplaced. A recent Kalmbach publication quoted John Nehrich as maintaining that our efforts to recruit children to the hobby are counter-productive – such efforts only work to reinforce stereotypes that model railroading is a childish pursuit.

Perhaps if our magazines and the NMRA extolled the benefits of the smaller layout ... with generous coverage ... then a golden age of model railroading could lie ahead of us?

★ LAST ISSUE'S RATINGS

The five top-rated articles in the April 2016 issue of *Model Railroad Hobbyist* are:

4.8 April Derailments
4.7 One Module Challenge: Chama-Division layout
4.6 Imagineering: Better model railroading video
4.6 Edendale Creek Diorama, part 1
4.5 Scratchbuilding with Monster Model Works brick: 2

Issue overall: **4.5**

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

Micro layouts would allow young adults (in their 20s and 30s) to enjoy our hobby with minimal space requirements, minimal time investment, and minimal financial outlays.

Rather than all the talk of despair, let's give a chance to appealing to younger men by encouraging them in more manageable modeling goals and eschewing fantasy modeling.

Looking beyond the "talk of despair" and disdain of freelance modeling, both of which we feel are questionable, let's look at Nick's point about appealing to young men by more manageable modeling goals.

First, let's broaden that to appeal to both young men and young women. Female participation in model railroading is up. We can now name a good half dozen women in the hobby without even trying hard. That wasn't always so, and it's a trend we only see increasing. Maybe encouraging the ladies to do the hobby too will automatically increase our numbers? How about that for a growth strategy!

The John Nehrich quote is interesting. While we see John's point, we could be cutting off our nose to spite our face if we stopped promoting the hobby to children. We also promote pets to children, does that mean having pets is viewed as childish? No.

At its core, Nick is saying the hobby needs to do a better job of educating the public about how to view doing the hobby so it's less constrained by old paradigms. Why not include in that "think differently" re-education how scale model railroading can be a challenging, rewarding, deeply technical hobby for adults as well?

MRH website: Scenery tips and tricks

Here's some threads from the MRH forum with scenery insights.

Making rolled hay bales: mrhmag.com/node/26290

Doin' the Desert series: mrhmag.com/node/7324

New Scenery at SJ Cabin: mrhmag.com/node/6741

Using mirrors in scenery: mrhmag.com/node/5009

Scenic the staging yard? mrhmag.com/node/21533

Video scenery clinic on P&WV: mrhmag.com/node/5044

Modeling water and streams: mrhmag.com/node/8120

We hope you enjoy the May issue of MRH! ☑

Click here for reader comments

MRH Q-A-T
column

compiled by
JOE BRUGGER

Click here for
reader comments

❓ QUESTIONS AND ANSWERS

Wayward signals

Q. While driving along the central corridor of the Union Pacific I saw some very interesting signals. Most were facing down the main line so that the engineer could see the face of the signal. However, some locations had additional signals at 90 degrees to the main line, so I could see the face of the signal while I drove along the highway [1]. Some faced toward the mountainside. I even saw, at one location, a set of signals that faced 90 degrees to the tracks without any signals facing down the right of way. Can anyone shed any light on these signals?

—Art

A. What you saw is a signal system in the process of being updated:

Chiloquin Russ: The railroad needs signals to be in service all the time, so while they install the new ones they keep the old ones functioning. When the section is complete and they have

▶ MRH QUESTIONS, ANSWERS, AND TIPS

1. Why would installers set up a signal head at 90 degrees to a train crew's line of vision? *'Art' photo*

tested everything out, they simply turn the old ones 90 degrees and then turn the new ones to be seen. They can then go back and remove the old ones.

Paul Schmidt: While this might not look like much of an upgrade, the details tell the story. The new signal heads have the same number of aspects as the old ones but the new signals are mounted higher and, more importantly from a maintenance standpoint, have safer access to the back of the signal heads, especially the "B" head. The middle bungalow is a newer type.

("Bungalow" is the railroad term for the metal equipment sheds that shelter electrical equipment along the line.)

Read the whole thread at mrhmag.com/node/26006.

—MRH

Dual filament bulb question

Q. I have a Proto 2000 E8/E9 locomotive. I would like to install an Econami 200 decoder. My question is: The loco has a twin filament headlight to simulate an oscillating Mars light [2]. Can I use this with the Econami and if "yes," what is the hookup? If "no," should I replace the bulb with a single filament bulb or an LED?

—ABL

A. **Patrick Stanley:** P2K used an alternating flasher circuit -- that big circuit board in the back -- to flash the two-filament bulb for a Mars effect. Replacing the bulb with an LED is my first choice. If

Playback problems? Click here ...

you figure out the voltage rating of the bulb, you could configure the "flash output" of your decoder and wire it to just one of the filaments. That's doable, but to me it's easier to start with an LED and resistor. That's what I've done with all my Mars lights.

Nelson Beaudry: If you replace the two-filament bulb with an LED, and delete the flasher circuit board, wire the bulb to your decoder according to the decoder's diagram. Then, to get the oscillating effect, program CV49 (headlight output/white wire) to a value of 130; that's calculated from CV 49= 2 (Mars light) + 128 (LED MODE) = 130.

Don't forget to add a 560 to 680 ohm resistor. Some guys also use a 1K ohm resistor but that dims the LED a bit too much for my taste.

MRH: Now, you ask, what exactly is a Mars light?

Jerry Kennelly, a Chicago firefighter, realized that oscillating lamps would be eye-catching warning devices for fire departments and railroads. His ideas were tested on the Chicago & North Western in 1936, and Mars lights began appearing on locomotives in the 1940s.

The company's lights used several methods to oscillate the beam. Sometimes the bulb and assembly moved, sometimes a reflector rotated behind the light. Most moved in a triple-eight pattern with the beam swinging up and down two or more times for every horizontal sweep.

The Mars Signal Light Company of Chicago still manufactures warning lights under the Tri Lite Mars brand, after being acquired by Tri Lite, Inc. in 1991.

Railroads used Mars lights on both steam and diesel locomotives. Flashing ditch lights have replaced them in most cases but they are still used by Metra in Chicago and in other passenger services.

MikeM: This guy builds and sells a number of lighting simulators, including Mars: ngineering.com/lghting%20effects%20for%20the%20railroad.htm.

Read more at mrhmag.com/node/25602.

Ribbon Rail alignment tool

Q. Does the Ribbon Rail alignment tool go between the rails and hold the radius while the track is spiked in place, or does it butt up against the ties and form the radius? Or is it used to space two pieces of track evenly in a radius?

—HB

A. Alan Loizeaux: The Ribbon Rail tool fits between the rails and above the spike heads. If you use two templates end-to-end with a 1" gap between them, you can maintain a proper curve, and spike or nail the track to the roadbed within the gap.
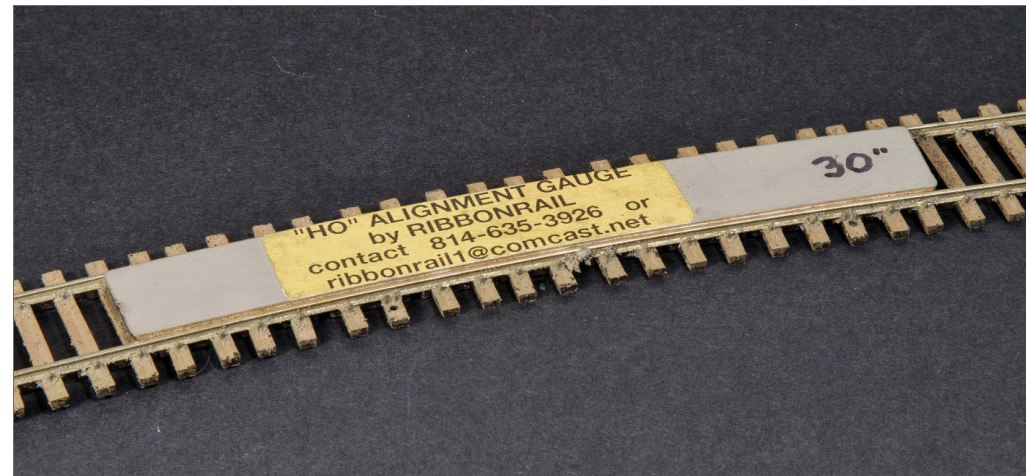
3. Ribbon Rail track-laying tools are machined aluminum templates available in several gauges and radiuses, and in several lengths for straight track. *MRH photo*

The tool is great for maintaining a constant radius through long curves. It comes in various sizes, and the longer ones are helpful in laying long curves. It is only a tool and it alone will not make perfect track work. Care must be taken while making transitions from straight to curved track.

Sweep Sticks from Fast Tracks handlaidtrack.com are another good product for the same purpose. Sweep Sticks have slots designed to allow spiking/nailing the rail within the tool.

Dave B and MRH: With either tool, the layout builder still must establish an accurate center line to guide the placement of the rails. The Ribbon Rail tool and Sweep Sticks are just a means of maintaining a steady curve and allowing smooth running of trains. A "kinked" radius is an invitation to cars and locomotives to pop off the track, usually with wheels climbing the outside rail.

Lay out complete curves from the radius point if possible, with nice square tangents off the ends of the curves. Then add a

Playback problems? Click here ...

transitional easement. Where you can, use a length of wood or metal to draw the curve, with one end fixed at the radius point and a soft pencil or Sharpie at the long end to draw the track center line on the roadbed. Working a track center line out from the radius point insures there will not be any tight radius parts of the curve.

If it's not possible to access the radius point, then make accurate curve templates and overlap them to maintain the curve. Be very careful in overlapping curve and easement templates. It's very easy to introduce a kink that will cause problems.

The machined aluminum Ribbon Rail tool is sold in N, HOn3, and HO gauges and can be used with either handlaid track or flex track. After the track has been spiked down or pinned in place, slide the tool along the curve or straight with light finger pressure. Any place the tool slows down or hangs up is a spot with tight track gauge, or a change in radius.

Because the tool is aluminum, it's a very handy way to hold a radius while soldering rail joints on curves, and to maintain exact alignment on straight track. Some model train shops stock Ribbon Rail products and sellers can be found by Googling "ribbonrail track alignment gauges."

Read more about laying track at: mrhmag.com/node/25132,

mrhmag.com/node/21968,

mrhmag.com/node/1935.

And watch Charlie Comstock's video on working with Micro Engineering track: youtube.com/watch?v=qmE0EiWPQHk.

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💡 TIPS

Line up a paper track plan

Like many current layout builders, I use a full-sized paper track plan printed from a computer design program, XTrkCAD in my case. While this has many advantages, one of the difficulties is dealing with what can be a very large and unwieldy piece of paper.

I was recently working with one print-out that is 24" wide -- not too bad – but 336" long! That's 28 feet! It is hard to be sure something that long is staying where it is supposed to be. While placing the paper plan and tracing the tracks to the layout, that big piece of paper inevitably moves around a little. How can I be sure the paper plan

is exactly where it is supposed to be so that I don't trace a bunch of tracks in the wrong place?

The answer was to cut holes in my paper track plan. I selected several strategic locations for these holes, placing them where the track location was especially critical, like turnouts, or congested areas with lots of tracks at minimum spacing.

A small hole along the center line of the track is all that is needed, just enough to transfer the center line to the layout, or see the line you have already traced. When the track plan moves -- like when you have to lift it to get carbon paper under it -- it is now very easy to put it right back into place. You can easily check your holes for proper alignment and have confidence that everything is where it should be!.

—Randy Seiler
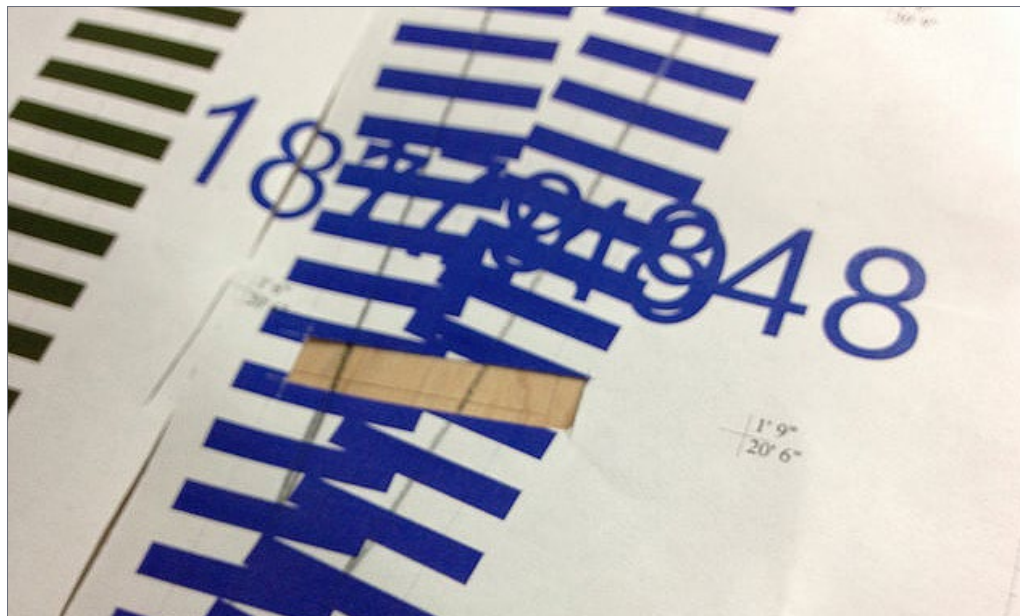
4. Once a full-size paper track plan is laid out on the bench-work, cutting a hole in the plan at strategic locations gives a reference to keep the plan aligned. *Randy Seiler photo*

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DCC IMPULSES
column

Bruce Petrarca

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Demystifying DCC CV 29

There is a lot of DCC terminology I'd like to change. For example, programming should be something like "setting the personality." Along that line, Configuration Variables wouldn't be abbreviated as CV, but called "traits."

Just as you can take a ready-to-run loco or car out of the box and put it on your pike and run it, you can take a decoder equipped loco and run it, usually on address 3.

Think of the basic programming (address and lights) as the equivalent of taking a car out of the box and tuning it up. The equivalent tune-up might include adjusting the weight to NMRA standards, changing out plastic wheels, and replacing or tweaking the couplers.

The more you form (program) the personality of your DCC equipped loco, the more it begins to resemble a fully detailed and weathered piece [1] of cherished rolling stock.

Pivotal to the basic personality adjustments is CV 29, sometimes called the master CV.

▶ DCC TIPS, TRICKS, AND TECHNIQUES

Those who don't study history are doomed to repeat it, so let's take a trip back in our time machine and see when CV 29 was born. Then, I'll try to answer all your questions about the master CV.

Back in the early 1990s . . .

When DCC was being formed, the geeks who created it got what seemed to be a smart idea. In those days, memory and micro-processors were expensive and very limited by today's standards. Since there were only a handful of CVs used, they decided to make one CV a place to control the basic traits of the decoder. It was positioned way out there in the boondocks at CV 29.

Some of the systems, mostly the high dollar units [2] back then allowed folks to easily see the individual bits within a CV on the throttle. That's geek talk for: your throttle would show you what bits were set by a decimal number. The flagship Lenz product at the time was the Set 100 with the LH100 throttle.

1. Tuning a DCC locomotive is like weathering rolling stock. Here is a treasured scene on Larry Smith's (Lite & Narrow MRH columnist) layout.

The value in the CV is read and shown. In the lower row the displayed digits show you which bits are set in this CV. In this example bits 2 and 3 are set.
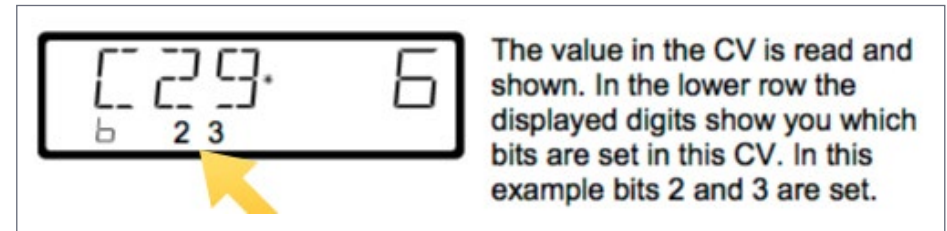
2. Lenz LH100 throttle displaying the contents of CV 29 (a value of 6) with bits 2 and 3 set – captured from the LH100 manual.

As throttles and systems became more advanced, more and more CVs were added. The neighborhood has run way past CV 29 and even the rest of the originally anticipated maximum of 256 CVs. Today, some decoders have 2000+ CVs.

Most of these new CVs used actual human-understandable numbers for setting traits, not geeky bits. So, the throttles evolved away from displaying the bits set in a given CV.

But we were still saddled with CV 29, which must be there to achieve NMRA compliance and has one foot in the deep, dark past.

What does CV 29 control?

CV29 answers six questions about your decoder & locomotive system. When you place a 1 in a specific bit, you are answering of "yes" to the question. A 0 is "no."

Will the locomotive run reversed? Does the loco go one direction or the other when you say "go forward"? If you install the decoder correctly (orange wire to the motor plus) this trait will always be off. When properly implemented, this trait will reverse both the direction of travel and any directionally dependent lights. This trait was intended for reversing operation in a quasi-consist, not for fixing wiring issues. Note: if you wire the motor backwards and the lights correctly do not use this trait to change direction, flip the motor wires [3]. Otherwise you will be chasing lights and motor direction forever, it will seem. This is bit 0 of CV 29 and has a value of 1 if on.

Does this decoder speak 28 speed steps? I'd love to change this name, too. It defines a whole protocol that the decoder recognizes, not just something to do with speed steps. For any modern decoder, the answer is 28/128 speed steps, or setting this trait on. That's the simple answer. I'll offer a bit of insight into this whole issue at the end of this article. This is bit 1 of CV 29 and has a value of 2 if on.

Will the decoder operate on DC? If you aren't going to use DC, turn this off to minimize runaway locos. If I need DC operation for

3. TCS T1 decoder installed in blue-box Athearn locomotive – if you wire the motor backwards, fix the wiring, don't change CV 29. See text.

testing or for running on a special occasion, I turn it on, use it, and turn it off. This is bit 2 of CV 29 and has a value of 4 if on.

Will the decoder respond to Railcom? Unless you know exactly what Railcom (bidirectional communication) is and if you have it, leave this off. This is bit 3 of CV 29 and has a value of 8 if on.

Will the decoder respond based on the 28-point speed table? There is a catch behind this. Many decoders use another CV (frequently CV 25) to select which table you want. The manufacturers frequently offer a choice of several packaged curves, a straight line and none. Usually, the default is none. So, you select "using the table" from CV 29 and merrily are tweaking the 28 CVs that make up the table, but nothing changes. You didn't change the manufacturer specific CV to enable the user table. This is bit 4 of CV 29 and has a value of 16 if on.

Will the decoder respond to a long (2 byte) address? There are a lot of nuances of addressing which I discussed in

my February 2014 column: **Unravelling DCC Addresses** (mrhmag.com/magazine/mrh-2014-02-feb/di_unraveling-dcc-addresses). We won't belabor them here. If you are wanting the loco to respond to a long address you've already programmed in CVs 17 and 18, then you want this on. This is bit 5 of CV 29 and has a value of 32 if on.

How do I get the value into CV29?

I recommend that CV 29 be programmed on a dedicated programming track. Why? Well, you are potentially adjusting the address (name) of your loco, say from 3 to 1234, by changing it from a short address to a (pre-loaded) long address.

If you are using a programming on the main (Ops mode for Digitrax users) method, you are relying on communication based on the loco's address and changing the address in the middle. Just to avoid any possible confusion, use the programming track.

Yes, I know this is against what some folks, including some manufacturers, recommend. It's just my belt-and-suspenders mentality. I know it will work on the programming track. It most likely will work on the main.

What values are frequently found in CV 29?

Let's hit a few values that you will probably see over and over. If the loco is running backwards, expect to see an odd value, one number higher; if DC operation is enabled, expect a number four higher:

2 - This loco responds to 28 or 128 speed steps

34 - This loco has a long address and responds to 28 or 128 speed steps.

50 - This loco has a long address and responds to 28 or 128 speed steps and a user-defined speed table.

How do I decide what value to give CV 29?

As the guy says in the bad movie, "We can do this the easy way or we can do it the hard way."

The hard way is to calculate it yourself. Let's follow through a couple of methods.

You can go back to the earlier section and dig my values out of the text and write them down on a sheet of paper. You can calculate it there.

A good idea, in my mind, is to have some organization. I've created a sheet that should help a lot. It is here [4] and on my website (mrdccu.com/curriculum/04.pdf). Answer the questions and write down the numbers. Add them up.

A better idea is to have a calculator available to work for you. The 2 mm Scale Association in the UK has made one for you. Just go to their web page (2mm.org.uk/articles/cv29%20calculator.htm), answer the questions and it will calculate the CV 29 value for you. The same page also has a calculator for the long address and the corresponding values for CVs 17 and 18.

Regardless of how you come up with the number, then you program it with your system.

Okay, what's the "easy way?" DecoderPro keeps track of all your choices and adjusts the value for CV 29 as you make changes. The

DCC CV 29		
Characteristic	**Value**	**Total**
Direction of operation is reversed	1	
Operates on 28 or 128 speed steps *	2	2
Operates on DC as well as DCC	4	
Uses Railcom	8	
Uses speed table	16	
Uses long address	32	
	Total	

4. Table to calculate a value for CV 29.

difference between calculating it yourself by any means and programming it vs. using DecoderPro is like the difference between cleaning your own house and having "staff."

For example, figure [5] shows the basic pane of Decoder Pro with the place to set the short and long address. There are other boxes that deal with some of the CV 29 items, like speed steps and DC power and loco direction. As soon as you change any of these
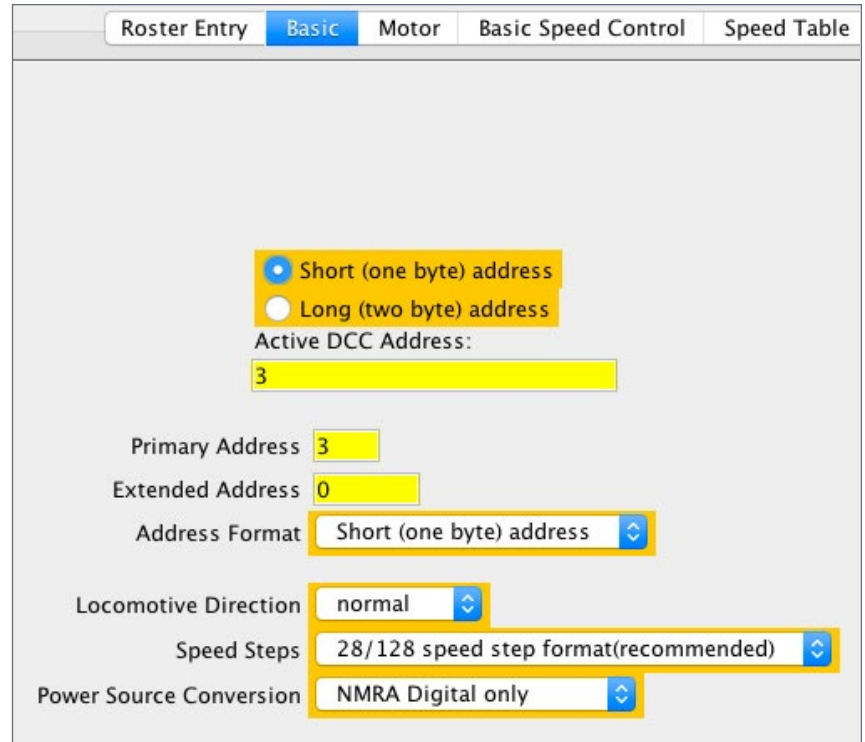
5. DecoderPro Basic panel (partial screen shot). Items in orange (plus the use of the speed table on the Basic Speed Control panel) are related to CV 29 and tracked by DecoderPro as you make changes. You don't have to do anything but tell DecoderPro to WRITE CHANGES ON ALL SHEETS and you are golden.

items, all the others turn orange, letting you know that they are interrelated. When you to a **Write All Changes** command, CV 29 will be set as necessary. That's all, folks!

Yes, some systems assist you in setting CV29, but none that I know of watches your back like DecoderPro. I have a NCE PowerCab (one of the most user-friendly ways to program) on my workbench track. I do almost all my programming using DecoderPro on a MacBook Pro. That way, I don't have to keep track of CV 29.

Where can I get DecoderPro?

DecoderPro is part of a shareware package called JMRI. It is free to download and use. That said, I recommend that users donate

$10 per year. A cadre of volunteers worldwide does all the work, but there are legacy legal expenses to be retired and ongoing expenses for web servers, etc.

Since JMRI works under runtime Java, it will work equally well under Windows, Mac OS X or Linux. The primary builds are done on Macs, so the possibility of injected Windows malware is very small. You may need to install, or upgrade, Java on your computer.

The JMRI production version is at 4.2.1 (even second digit = production). There is a test version with updates 4.3.4 (odd second digit = test) also available. Be sure to download the version for your operating system (jmri.sourceforge.net/download). There are links to operating system specific installation guides on that page. For full functionality, you will also need a way of

connecting your computer to your DCC system. Information about them also resides on that "download" page.

You may donate to JMRI via PayPal. Go to jmri.org/donations.shtml.

What are "speed steps" and why does Bruce call them a language?

A bit more history from the geeks. Early on, the communication between the command station and the decoder over the track became a language, called (unfortunately) "14 speed steps." As decoders evolved, a new language was needed, which became called "28 speed steps." Even later, came "128 speed steps." By then, the developers were a bit more clever, and made decoders and most command stations that could

speak and understand the 28 language or the 128 language equally well. This is why you have settings of "14 speed steps" or "28/128 speed steps" in DecoderPro.

What happens if you set CV 29 to "14 speed steps" and try to talk to it with a DCC system set to "28 speed steps" or "128 speed steps?" On newer decoders, not much. They have been designed to listen and respond correctly to "14 speed steps."

With older decoders, the loco will run, sort of, and the lights will be doing some very odd things, changing every speed step. So, if you see this strange behavior [6], go check CV 29, I'll bet that CV 29 does not have bit one (value of 2) set.

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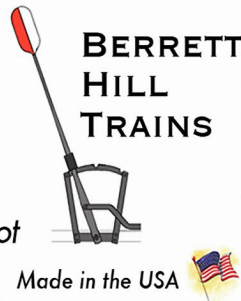
column. While you are there, I encourage you to rate the column. "Awesome" is always appreciated. Thanks.

Until next month, I wish you green boards in all your endeavors. ☑

Click here for reader comments
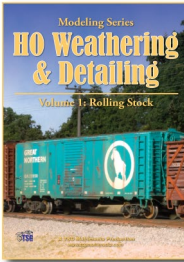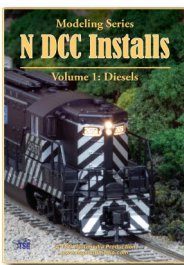
Speed step out-of-sync demo

HAVING FUN WITH TRAINS

MRH
MODEL RAILROAD HOBBYIST
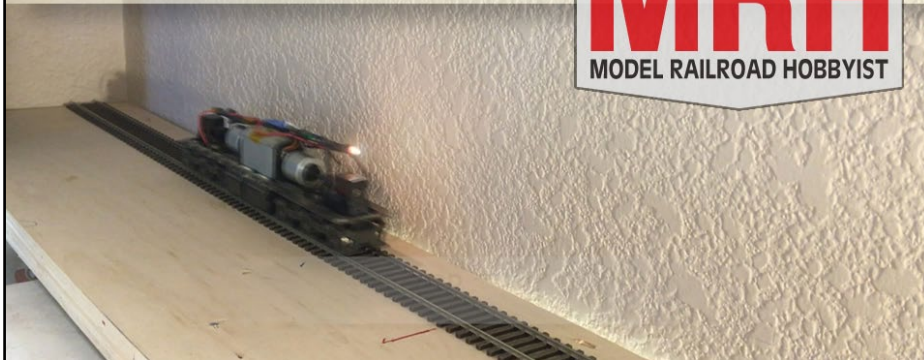
Playback problems? Click here ...

6. Locos can exhibit strange light responses when the decoder is set to 14-speed steps and the command station is set to 28-speed steps.

GETTING REAL
column

JACK BURGESS

LOOKING BACK AT A 1940 RAILFAN TRIP

SEVERAL MONTHS AGO I WAS ASKED TO provide model and prototype photos for an upcoming book from the NMRA Operations Special Interest Group (OPSIG). That book will be a comprehensive look at all things operations, and is expected to be available this summer from the OPSIG at opsig.org.

One of the prototype photos I considered providing was taken by railfan Wilbur C. Whittaker during a trip to photograph the Yosemite Valley Railroad on July 7, 1940. Wilbur Whittaker lived in Mill Valley on the north end of the Golden Gate Bridge (opposite San Francisco) where he worked for the Southern Pacific Railroad. I was able to visit Wilbur several decades ago and spent a wonderful afternoon reviewing a binder of prints of his photos of the YV. At my request, I received nearly 30 5x7 prints of those YV photos a week or two later. Wilbur was typical of his generation, and was a true gentleman and gracious host.

▶ MODELING REAL RAILROADS AND WHAT THEY DO

Trip planning

1. The cover of the public time-table for the Yosemite Valley Railway issued in May 1941, which was identical to the one in effect in May 1940.
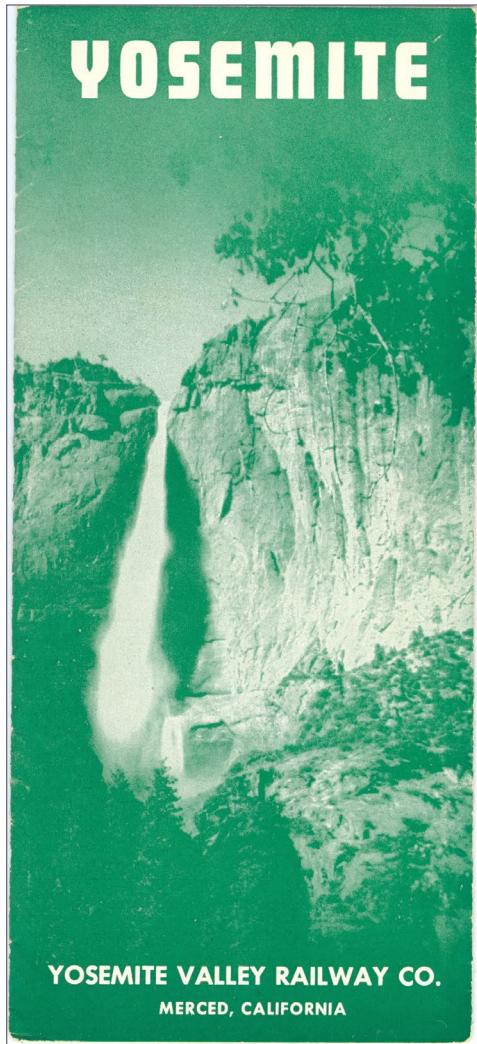
In those pre-Internet days, how did Wilbur and Marvin know the schedule for the YV during their planned visit? One approach would have been the current issue of the Official Guide to the Railways. These 1,500+ page paperback books listed all of the railroad stations in the country by city, and which railroads served them. If you were planning a rail trip from your hometown in the east to a planned vacation location in California, the Guide would list which railroads you needed to book travel on to get from home to your vacation designation. The guides also provided public timetables for all of the included railroads so that you could determine transfer times at various stations along the line.

Based on the date of his trip and other YV photos I have, railfan Marvin Maynard

joined his friend Wilbur that day and also took several photos. Until I started looking for photos to fulfill the OPSIG request, I didn't realize I have nearly two dozen photos taken by Wilbur on that same July day.

Back in those days there were also public timetables such as the ones put out by the Yosemite Valley. [1] These were much like the local attraction brochures found today in hotels throughout the country. The YV public timetables are 16½" by 18½" double-sided publications which folded to create a 4" by 9¼" brochure. In addition to passenger train schedules, [2] they included information on some "Scenes Along the Way" as well as highlights of a trip to Yosemite National Park.

2. The passenger train schedule included in the public timetable shows YV eastbound passenger train No. 2 leaving the Southern Pacific Railroad station in Merced at 5:30 a.m. and departing the YV station at 5:35 a.m. after a very short stop. It will arrive at El Portal at 9:30 a.m. where passengers destined for Yosemite National Park will transfer to a bus for the rest of their trip, arriving there at 10:10 a.m.

Both sources of information would have let Wilbur and Marvin know that summer Pullman passenger trains would be running during their July railfan trip, and that eastbound YV Train No. 2 would leave Merced at 5:30 a.m. It would run from the Southern Pacific Railroad station in Merced at the west end of the YV to El Portal at MP (milepost) 77 at the boundary of Yosemite National Park. The railroad ran north from Merced for about 13 miles before turning east toward Yosemite. But the first part of the trip would be before sunrise (based on the July date of their trip) so Wilbur and Marvin headed directly toward the upper end of the line to photograph that morning's passenger train. The photographs that Wilbur and Marvin took begin just east of Briceburg at MP 61 and continue to just short of El Portal. But they had a surprise that day which must have made the day even more outstanding.

Wilbur was an expert and prolific photographer. Their trip occurred back when railfans were welcome on railroad property, and they could take photos without restrictions. Let's follow them as they chased passenger train No. 2 eastbound from Briceburg in the days when YV train movements were under Timetable and Train Order control.

Briceburg

Briceburg (there was no station at Briceburg – only a siding, some section buildings, and a station sign) was on the north side of the Merced River while the highway was on the south side of the river. This made it easy to follow the train all of the way to El Portal. Wilbur's first photo of the day [3] shows train No. 2 crossing the 111-foot-long trestle just east of Briceburg. This would have been around 10:15 in the morning, which resulted in perfect lighting. The train that day consisted of locomotive No. 25, one of the railroad's

3. YV passenger train No. 2 crossing the trestle just east of Briceburg. This was the first photo Wilbur took that day on July 7, 1940. (All black & white photos were taken by Wilbur C. Whittaker).

five 2-6-0s, Railway Post Office car 107, leased Southern Pacific Railroad diner 10300, a Pullman picked up that morning in Merced off the Southern Pacific Railroad, and YV observation No. 330 which was built by the Hicks Locomotive and Car Company in 1907.

Because of the track curvature in the entire section of the railroad in the Merced River canyon, passenger trains were restricted by employee timetable rules to 30 mph. When running on time by the timetable schedule, trains were operating at only14-15 mph. The gravel road (even though it was a state highway) that Wilbur and Marvin used to follow the train thus let them easily keep up with the No. 2 train as it progressed eastward.

About 2½ miles further east, Wilbur photographed the train again as it approached Drum [4]. This location is typical of much of the route along the Merced River since the tracks run due east

most of the way, exposing the south-facing hillsides to an abundance of sunshine. At the time of their trip this hillside would have been covered with summer golden yellow grass since rains would have typically ended several months earlier.

Further up the line, Wilbur got a very nice shot of the train crossing the 160-foot-long trestle at Fox Creek. [5 and 6] Although not that apparent in this photo, some of the trestle piers on this bridge were "stepped," meaning that one side of a concrete pier might be lower or higher than the other side. A current-day photo illustrates this fact. [7]

For years, I wondered why they were built that way. But I finally realized that they were not originally built that way. The trestle

5. Here the passenger train crosses Bridge 64A at Fox Creek. Note how some of the trestle piers are "stepped" after the original mud sills were replaced with concrete piers.

6. My model of Bridge 64A is only 70 scale feet long, about half the length of the prototype. I don't run passenger trains on my layout due to minimum track radii and track clearances. I do have some full-length Pullmans on my layout as static display models and I used one of these Branchline Trains Pullman models for this photo. The SP diner is an Athearn model which was kitbashed to more closely replicate the prototype, based on the prototype photo. The roof air conditioning duct on the diner is a 3D print.

4. East of Briceburg, Wilbur and Marvin caught the train in the vicinity of the passing siding at Drum from the highway on the south side of the Merced River. Two of the cars in this train, RPO 107 behind the locomotive and observation 330 on the rear, still exist. The 107 is owned by the Pacific Locomotive Association, while the 330 is privately owned and currently is being restored (yv330.com).

7. The second set of piers from the abutment at the bottom of this photo shows a very short pier for the trestle post nearest the river while the rest of the pier is taller for the other three posts.

8. The lack of vegetation along the river in this photo was due to a massive flood in December 1937, which resulted in miles of washed-out YV track downstream from this location. That flood also wiped out the river-side vegetation here. Wilbur's friend Marvin Maynard is on the left watching the train pass.

bents (the framed upright trestle support members) in this section of the railroad had originally been built on "mud sills" (wood planks, most likely redwood) set directly on the ground. The trestle bents then rested directly on these mud sills. Over time, moisture which wicked up through the mud sills into the bents could result in dry rot. Since the amount of decay varied between the different vertical posts, the most cost-effective remedy solution was to cut the posts off just above the decay, install new sills, and then construct new, stepped concrete foundations as needed.

A little further up the line, Wilbur caught the passenger train again, this time with his friend Marvin in the foreground

enjoying the view [8]. What a great photograph, and one of my favorites! Their next stop was opposite Emory [9, 10]. This was the location of a limestone quarry (800 feet above the YV mainline and connected via a 2,000-foot-long incline). The limestone was loaded into YV "rock" cars (ex-Great Northern 22-foot-long hoppers) and transported to Merced where it was used to manufacture Portland cement.

Emory was at MP 67. Trees and large bushes along the highway east from Emory might have dissuaded them from trying to photograph the passenger train until further up the line. The train turned on a wye at Moss Canyon at MP 75 so that it could

9. Wilbur took this photo of the train passing the employee housing at Emory. There was no housing alternative for employees working here at the limestone quarry, so the Yosemite Portland Cement Company provided these buildings for single men. Married men were not employed due to the lack of housing and schooling opportunities.
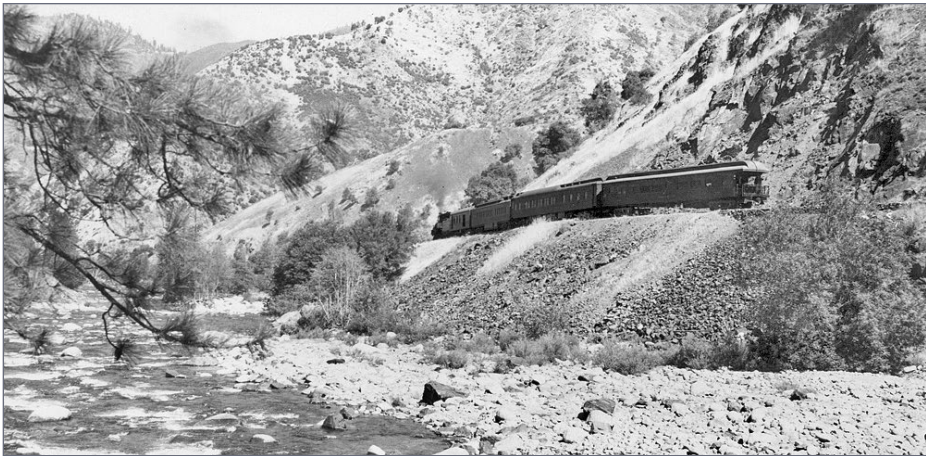
10. After turning the entire train at the wye at Moss Canyon, train No. 2 backed the remaining 2½ miles to the end of the line at El Portal. Here it is backing around Hog Back Bend, the sharpest curve on the line.

11. I didn't have room for the second employee housing building, but other details are generally correct. The locomotive is a Beaver Creek import as is the observation car on the end, while the RPO is from Overland Models.

back into the station at El Portal at the end of the line. Turning the complete train here put the Pullman and YV observation car at the end of the train and under the train shed next to the station there, allowing passengers to easily disembark and board waiting buses which would transport them to Yosemite National Park. Wilbur did take one last photo of the train backing around Hog Back Bend [11], an 18-degree curve (equivalent to a 320-foot radius) which was the sharpest on the line. At this point, the train was about 2½ miles from El Portal.

The station at Incline

Based on the lack of photos of the train in El Portal, Wilbur and Marvin didn't follow the train to the station. That was possibly because as they drove opposite the YV station at Incline, six miles east of Emory, they noticed that the logging incline was in operation. After taking that last photo of the passenger train backing toward El Portal, they retraced their way back west and drove over a bridge across the Merced River (a mile or two above Incline) and then turned down the road to Incline.

The logging incline at the YV station of Incline was built during the winter of 1923-24. The resulting incline was impressive – about 8,300-feet long with grades reaching 68%. (I've visited the top of this old incline several times. A grade of 68% is steep and feels similar to the first drop on an old-fashioned, wooden roller coaster.)

By the date of their trip to photograph the YV, Employes' Time Table No. 106 [12] was in effect, having been issued on May 24,

12. Employee Time Table No. 106 was in effect during Wilbur and Marvin's railfan excursion. The departure times for log train No. 8 are on the left reading down, while the times for No. 9 are on the right reading up.

EASTBOUND TRAINS HAVE RIGHT OVER WESTBOUND TRAINS OF THE SAME CLASS

YOSEMITE VALLEY RAILWAY COMPANY

No. 8 Freight (Leave Daily Except Sunday)	No. 2 Passenger (Leave Daily)	Ruling Grade Ascending	Miles from Merced	STATIONS — No. 106 May 24, 1940	Miles from El Portl	Ruling Grade Ascending	Capacity of Sidings Feet	Fuel, Water, Turn Tables, Wye Phones and	No. 3 Passenger (Arrive Daily)	No. 9 Freight (Arrive Daily Except Sunday)
	5:30 AM		0.0	MERCED—S. P. Depot.	77.7	5			10:55 PM	
	5:35		0.5	MERCED—Y. V. Depot.	77.2	0	YARD	WFTYP		
			0	MERCED—S. Fe Depot.		0				
		15	1.0	A. T. & S. F. Crossing	76.7	15				
		20	4.4	Bellevue	73.3	35				
	f 5:52	40	10.9	Edendale	66.8	37	1174		f10:35	
	f 6:02	23	15.2	Hopeton	62.5	0	620		f10:26	
	s 6:07	23	18.1	Snelling	59.6	0	913	P.	s10:20	
8:00 AM	s 6:20	41	24.2	**MERCED FALLS**	53.5	0	YARD	F.W.T.P.	10:10	3:50 PM
8:08	6:25	53	26.6	Morse	51.1	0	401		10:02	3:38
8:19	6:34	53	29.6	Starr	48.1	0	1343		9:54	3:26
8:23	f 6:37	53	30.7	Exchequer	47.0	0		P.	9:51	3:21
8:34	6:46	53	33.7	Ellis	44.0	26	482		9:42	3:08
8:41	f 6:52	0	35.7	Barrett	42.0	21	1381	P.	f 9:36	3:00
8:55	f 7:02	0	39.1	Jasper	38.6	10	294		f 9:24	2:44
9:01	f 7:08	0	40.9	Detwiler	36.8	0	1402	P.	f 9:19	2:37
9:13	f 7:16	53	44.2	Kittridge	33.5	0	438	P.	f 9:09	2:23
9:30	s 7:27	53	47.7	**BAGBY**	30.0	0	1378	W.T.P.	s 8:58	2:09
9:50	f 7:50	53	53.5	Lehmer	24.2	0	481		f 8:40	1:37
9:57	f 7:58	53	55.5	Kocher	22.2	0			f 8:34	1:28
9:59	8:00	12	56.1	Harte	21.6	0	1480	P.	f 8:32	1:25
10:15	f 8:18	53	60.8	Bricburg	16.9	0	485	P.	f 8:15	1:04
10:23	8:28	42	63.2	Drum	14.5	0	1622		8:06	12:54
10:38	8:43	53	67.0	Emory	10.7	0		P.	f 7:52	12:37
10:50	8:55	53	70.4	Bloss	7.3	0	840		7:40	12:22
10:54	8:59	62	71.6	Clearinghouse	6.1	0			7:35	12:17
11:10	s 9:04	79	73.0	Incline	4.7	0	YARD	P.	s 7:30	12:10 PM
11:15 AM	9:10	79	75.0	Moss Canyon	2.7	0	2200	W.Y.	7:25	11:25 AM
	9:30 AM	105	77.7	EL PORTAL	0.0	0	YARD	T.P.	7:15 PM	
Arrive Daily Except Sunday	Arrive Daily								Leave Daily	Leave Daily Except Sunday

1940. (Yes, it was spelled Employes'.) As shown on Time Table No. 106, log train No. 8 ran daily, except Sundays, between Merced Falls and the wye at Moss Canyon. Train No. 8 took empty log cars from the lumber mill at Merced Falls to Incline where they were shoved into the empties track. No. 8 then continued eastbound with its caboose to the Moss Canyon wye two miles to the east. No. 8 then turned on the wye and became train No. 9. It then returned to Incline to pick up all of the loaded log cars to haul them back to Merced Falls to be set out.

Probably the first photograph Wilbur took that day at Incline was of the small station there. [14] This station was built in 1924 and featured only a small office and a passenger waiting area.

CLEARANCE CARD

As an aside, how did No. 8 become No. 9 without a station agent at Moss Canyon? Under timetable operations, a train cannot leave its originating station without a clearance card [13] listing any train orders which might affect it along its route. Many years ago, I asked Andy Sperandeo how this issue might have been handled. One option might have been that the agent at Incline provided the clearance card before the train left that station. That was a possibility, but since both trains No. 8 and 9 operated during the time of day when no other timetabled trains were running, Andy thought that the conductor of trains No. 8 and 9 had the authority to issue a clearance card to himself based on the timetable. An interesting solution, and very possibly how the YV handled this daily occurrence during the five- or six-month period each year when log trains were being operated. ∎

The freight building was separate since the station didn't include a freight unloading platform. There were apparently enough passengers to justify printed tickets. [15, 16] I have heard that some unemployed loggers traveled on the YV to Incline seeking a job from the Yosemite Lumber Company. But upon learning that they needed to ride an empty log car up this steep logging incline to get the job, they gave up and took the next passenger train back to Merced.

Form 325—5M—9-41

YOSEMITE VALLEY RAILWAY COMPANY
CLEARANCE CARD

_____ STATION _____ Mar 9, 19 43

CONDUCTOR AND ENGINEER No. _____

ORDERS FOR
YOUR TRAIN ARE { FORM "19" _____ None
                 { FORM "31" _____ 2

(If no orders form "19" or "31" endorse "NONE" in space provided for order numbers.)

TIME, _____ M. _____ OPR.

Operators must retain a carbon copy of this clearance.
This does not interfere with or countermand any orders you may have received.
Conductors must sign orders Form "31" before accepting from Operator.
Conductors and Enginemen must each have a copy and see that their train is correctly designated in the above form, also see that the numbers of all train orders received correspond with numbers inserted above.

13. A typical YV clearance card, this one issued on March 9, 1943 for train No. 3, the westbound passenger train. As shown, there were no Form "19" orders, but one Form "31" order which was Train Order 2 that day. This order was most likely to inform the crew of westbound train No. 3 of the existence of an eastbound Extra (such as the Merced Local) out in front of their train. However, it was the responsibility of the crew of the Extra to be in the clear at least five minutes before the scheduled arrival of the timetabled train.

14. The station at Incline was very small and included only an office and a passenger waiting area. The freight house with the loading platform is visible to the east/left of the station. The building beyond the freight house is the station agent's house.

YOSEMITE VALLEY RAILROAD CO.

MERCED
—TO—
INCLINE

Good for One Continuous Passage commencing not later than One Day after date of sale. Subject to tariff regulations.

Form 1

General Manager.

4981
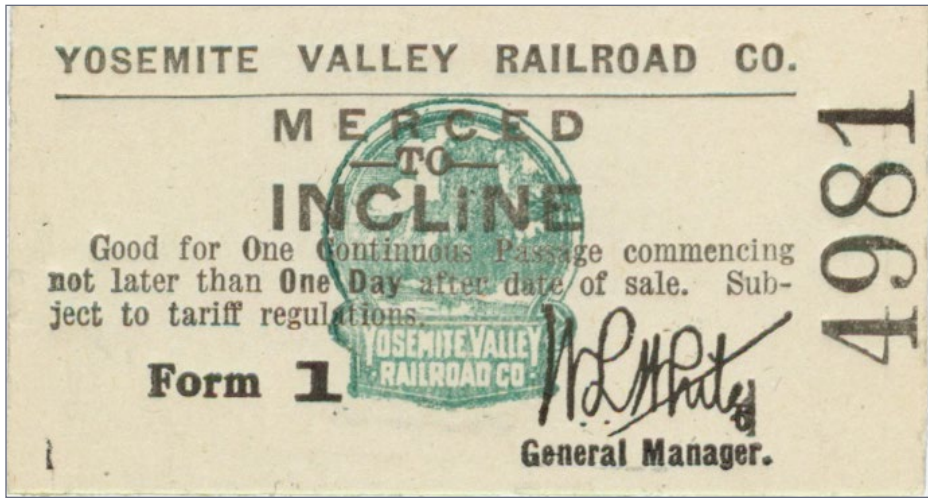
15. The YV issued these small (2¼"x1¼") cardboard tickets for journeys between stations along the line. This ticket was for non-first class travel between Merced, at the west end of the line, and Incline.

16. This particular ticket was used on August 24, 1939. While a rumor suggests that I model a particular year, month, and day, I actually model the YV in August 1939. If operations are held on my layout on the 7th day of the month, all switch lists, clearance cards, and train orders would be dated August 7, 1939.

Y. V. R. R.
COMPANY.

AUG 24 '39

MERCED
CALIF.
CITY
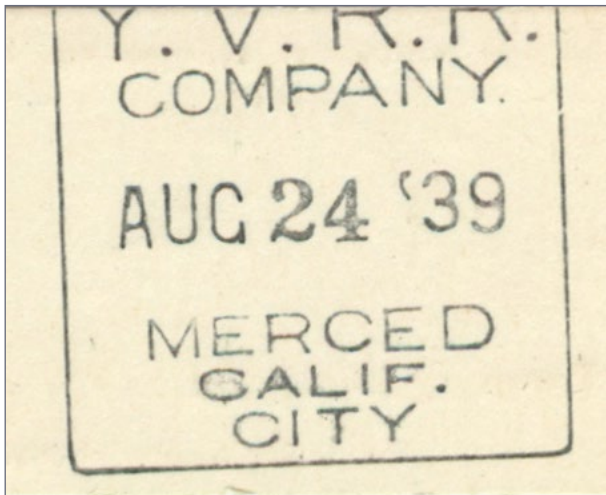
I'm assuming that Wilbur took the next couple of photos that day before the log train arrived. They included one of a loaded log car being lowered down the incline [17] and another of probably the same loaded log car as it rounded the curve at the bottom of the incline. [18]. Both are great photos and illustrate how employees there let them have free rein to take photos.

Wilbur then walked back down the incline to photograph a train of empty log cars rolling eastbound into Incline. [19 and 20] Was it luck that he was in the right place at the right time? I doubt it. I suspect that he heard the train whistling as it came up the canyon toward Incline.
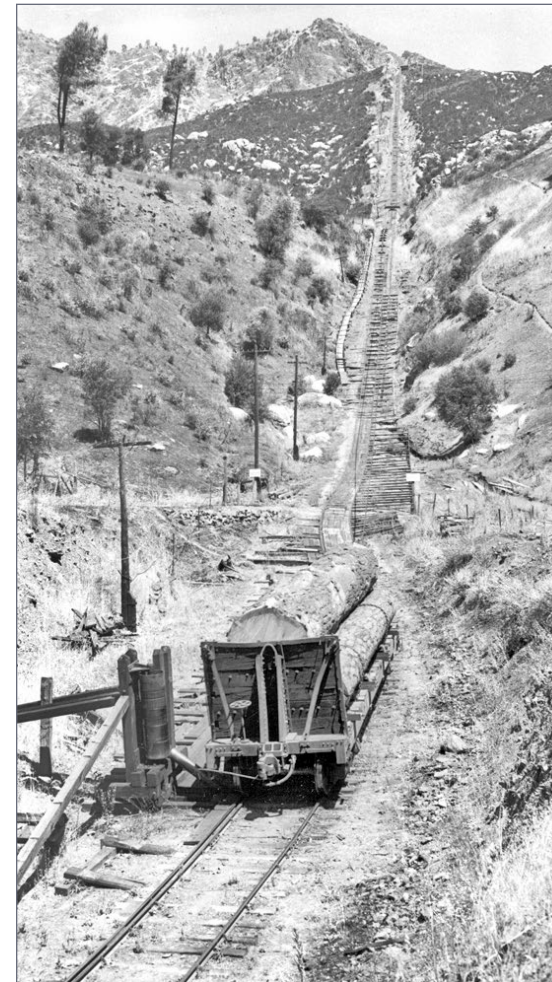
Although hard to see in his photo, that train of empty logs rolling eastbound into Incline was

17. Looking up the 8,300-foot-long logging incline heading up to the top of Trumbull Peak in the distance. The incline curved to the left just before the top of the photo before continuing up to the top of the incline.

running as an extra. (An extra is a train that is running under train orders and is not shown on the timetable for that day.) The fact that it is an extra is shown by the barely visible white flags indicating an extra, and also on the "X28" in the train indicator boxes. These internally-lit train indicator boxes were mounted to each side of the smoke stack and gave either the timetable number for the train (such as No. 8) or the Extra number for the train (such as X28). Their purpose was simple, to let station agents, other train engineers, and section crews know whether the train passing them was the timetabled train or an extra. For example, assume that you were the engineer of an extra waiting in a siding for No. 8 to pass so that you could pull out and continue your

18. Looking down toward the bottom of the incline from about the same location as the previous photo. The framework and vertical rollers along the right side of the track kept the incline wire rope from being buried in the adjacent hillside as cars rounded around this curve. The angled braces below those rollers let the slack wire rope slide down to the track level when there was slack in the wire rope.

19. Extra 28 rolls into Incline. The extra train has "X28" showing in the train indicator boxes on each side of the smokestack. To the right is empty UTLX tank car 58010, a nominal 6,500 gallon capacity Class X tank car. Many of the tank cars used to deliver Bunker C oil to Incline or gasoline to the Standard Oil distributor at El Portal were "frameless" Van Dyke tanks cars (named after the UTL's chief designer). The frameless tank cars had the tank attached directly to the truck bolsters, eliminating the need for a complete underframe which is typical on modern-day tank cars. But in response to some discontent on the part of railroad men with a car having no underframe, Van Dyke also designed the Class X cars, which had an underframe of two C channels joined by riveted plates. Since it had carried Bunker C, a fuel oil for the Shays working in the woods, as well as the steam donkey engines hauling logs to the loading areas, this car had steam heating coils which could be used to heat the heavy oil so that it would flow better.

run. If the passing train was an Extra running on train orders and not the timetabled train you were expecting, that wrong assumption could result in a head-on collision further up the line.

July 7, 1940 was a Sunday, and Time Table 106 [12] specified that log trains No. 8 and 9 only operated Mondays through Saturdays. It is possible that Wilbur didn't realize that log trains didn't normally operate on the day of their visit. That explains why the train rolling into Incline that day was operating as an Extra. But why was a log train running on a Sunday?

20. The locomotive is a Beaver Creek import from the 1980s. The tank car on the adjacent track is a Precision Scale Models kit for a narrow-gauge UTLX Van Dyke frameless tank car fitted with proper standard-gauge trucks. The mountains in the background were "Photoshopped" to replace the view of the other side of the layout in the photo.
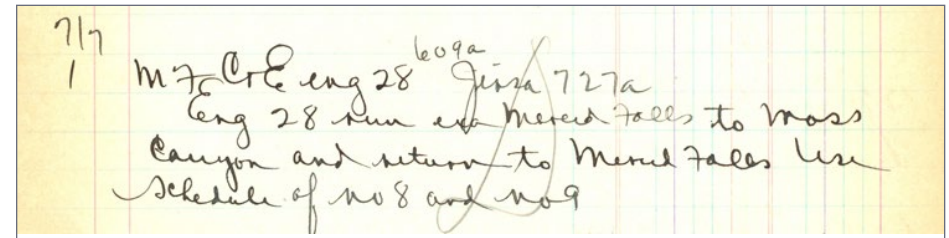
21. The dispatcher entry for Extra 28 was addressed to the engineer and conductor. It was issued at 6:09 a.m. but, since the engineer and conductor were directed to follow the time table schedule for No. 8 and No. 9, they would not leave Merced Falls until 8:00 a.m.

Loaded log cars were picked up by both train No. 9 and the El Portal Local. The El Portal Local, which ran as an Extra each day except Sundays, generally departed El Portal westbound around four hours after the No. 9 log train departed Incline. I have found instances in the Dispatcher sheets for August 1939 when the westbound El Portal Local left late, continued past Incline, and did not stop to pick up the loaded log cars to allow the westbound passenger train to pass it. (There was no passing siding at Incline.) Maybe that happened on the day before Wilbur and Marvin's fan trip, requiring the log train extra to run that Sunday.

Dispatchers recorded each train order in a journal before issuing it. (See my article on dispatcher sheets in the April 2014 *Getting Real* column.) The dispatcher's journal for that day in July 1940 [21] confirms that the train was an extra with Jirsa as the conductor. The train order that day read "Eng 28 run Merced Falls to Moss Canyon and return to Merced Falls use Schedule of No 8 and No 9".

At Incline, Extra 28 needed to first cut off its caboose and then pull forward before shoving its empty log cars into the empties track. The mainline was on a curve here and visibility toward the end of the train would have been difficult. So the conductor would climb onto the roof of the caboose to relay signals to the engineer [22, 23]. Once the empties had been set out, the engineer backed onto the caboose, coupled up, and left to turn the one-car train at the wye at Moss Canyon. It returned, dropped its caboose on the mainline, coupled onto the empty UTLX tank cars on the adjacent track, and then pulled forward to couple onto the string of loaded logs cars here.

22. Conductor Jirsa stands on the top of caboose 17 at Incline to pass signals to the crew in the locomotive. Later photos of this caboose show it with the side doors removed. This photo provided proof that the removal of those doors was done sometime after 1940 and the doors were still in place in 1939, the year that I model.
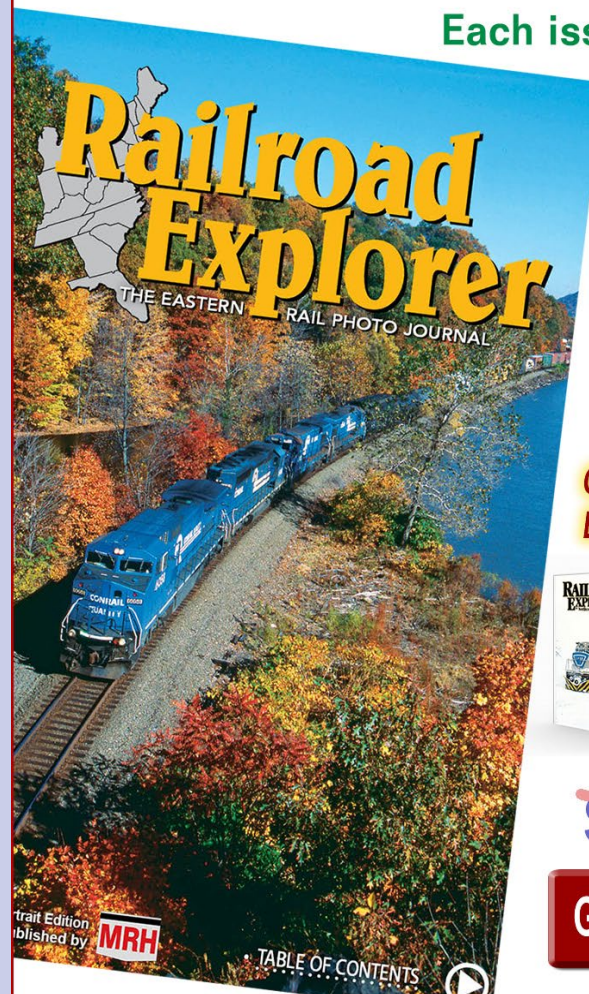
23. My model of Caboose 17 was scratchbuilt from styrene; the unique trucks under the caboose were part of the old Red Ball line, and later available from BC Models (no longer in business). The log cars are kits from Rio Grande Models.
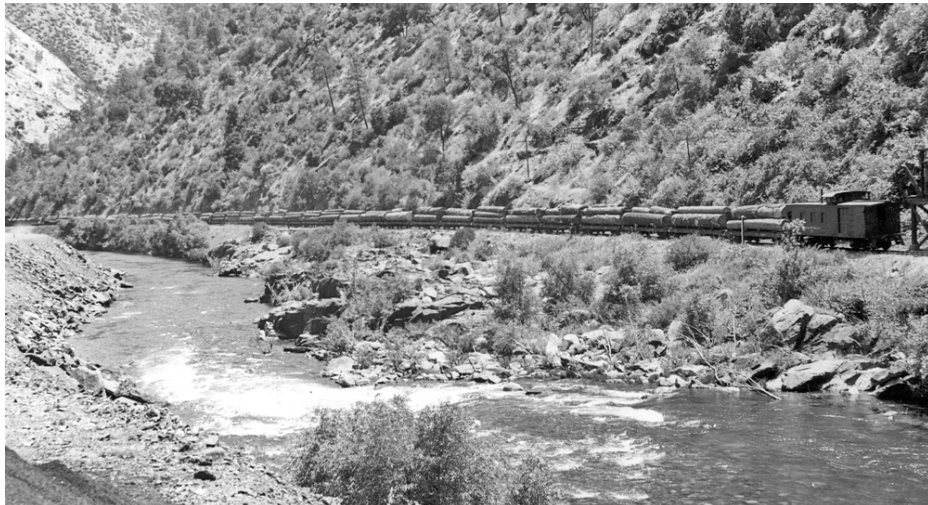
24. Caboose 17 is just passing the water tank at Woody. The locomotive is just out of the photo on the left.

The daily log trains averaged about 35 loaded cars. YV brakeman Bob Lunoe told me how they picked up those loaded log cars when he worked on the YV in 1942:

"At Incline, again we left the caboose on the main line and proceeded down to the west switch to back down on the first long cut of loads. After cutting in the air and releasing the hand brakes, about seven or eight as I remember, it was time for beans and we all took a break."

"Back to work with the air all pumped up, we would pull the cut out on the main line, at which point the second cut would drift down on top of us. Then with the train out on the main line, the caboose was dropped down to us. An air test would be made and we would be back on our way."

Train speeds for the westbound/downhill log trains were restricted by Bulletin No. 38 issued on July 18, 1929. The YV was running two pairs of log trains at that time and this bulletin affected both westbound, loaded trains (trains 9 and 11) and required that:

Wilbur and Marvin backtracked from Incline to the highway and then headed west where they caught up with log train No. 9 just below Emory. [24] Caboose 17 is just passing the Jenkin's Hill water tank a half-mile west of the buildings at Emory. The log train didn't stop to take water from this tank since it took water at the more dependable water tank at Moss Canyon before turning on the wye there.

A little further west, Wilbur took a very nice photo which provided a good view of the front end of the train [25, 26]. The first two tank cars are empties picked up at Incline. One of those two tank cars is the UTLX tank car on the adjacent track in Incline

[19] while the other was also picked up at Incline. The tank cars carried Bunker C which was transferred to one of the lumber company tank cars and hauled up the logging incline to fuel the

25. The first two cars in this log train are empty tank cars picked up at Incline, including UTLX tank car 58010. The next car is a bad-ordered log car.

26. Extra 28 begins its run downgrade from Incline (which is around the corner at the rear of the train). There was a yard at Incline, as evidenced by the yard limit sign. Barely visible is the bad order card stapled to the side sill of the empty log car.

27. The YV log cars were inspected both in the woods and at Incline at the bottom of the logging incline. This actual bad order card was issued in August 1942 at Incline and lists a broken grab iron needing repair.

Shays in the woods and the logging skidders which hauled logs to the landings. The empty log car was a bad-ordered car being moved to Merced for repairs. These log cars were exposed to rough handling and log loading so it is not surprising that they suffered damage from handling. Based on bad order cards in my collection [27] typical problems included broken grab irons, broken or bent cut lever brackets, and even missing angle cock handles.

They then caught up with the train again a mile or so farther west where Wilbur caught the entire train in a single photo [28].

Wilbur's next photo of the day is another favorite [29, 30]. It shows Extra 28 that Sunday drifting past the siding at Briceburg just west of where Wilbur took his first photo that day. A short

28. This last photo was taken before the log train arrived at Briceburg, very near where Wilbur and Marvin first began their adventure several hours earlier. The entire train is visible in this photo, one reason that Wilbur might have chosen this location.

29. Extra 28 drifts past the siding at Briceburg with white flags and indicator board inserts indicating that it was an extra. The train indicator boards, typical of those used on the SP, were internally lit, although those on the YV had room for only four characters while the SP boards had space for five. The crew had a set of inserts which included the locomotive numbers, train numbers, 2nd and 3rd for sections, and an "X" for extras.

30. These are actual YV metal stencils given to me by Guy Dunscomb many years ago. The characters are 4" high.

highway suspension bridge built here around 1924 let the two railfans get up close to the locomotive as it passed. By then it was about one o'clock in the afternoon.

They then headed back toward Merced where Wilbur took one last photo of the day. [31] This one was taken one mile east of the YV station in Merced where the YV crossed the ATSF tracks. It shows ATSF 4-6-2 Extra 1337 just short of the diamond crossing with the YV. As a side note: For years I couldn't understand why 15 of the B/W photos and the two color photos I have of this tower showed it to be painted light buff with brown trim, but Wilbur's photo showed it a dark color. I finally learned that the standard ATSF station colors of the time were Venetian Red with

31. In this, the most likely the last photo of their trip, Wilbur caught ATSF Extra 1337 just before it pounds across the diamond crossing with the YV tracks. What a wonderful day with a YV passenger train, a YV extra log train, and finally a southbound ATSF extra!

32. I don't own any ATSF locomotives that I could use to stage this photo, but this model photo was taken from about the same place on my layout that Wilbur stood. The interlocking plant is fully functional including working derails, signals, and rods. But that is an article for a future issue of MRH.

Bronze Green trim. In B/W photos, those colors appear exactly like Wilbur's photo. His July 7, 1940 date proved that my 1939 model needed to be painted in that scheme [32].

Wilbur and his friend Marvin obviously had a great day, based on the photos they took and their luck in discovering that the YV was running log trains as extras that day. But think about the changes that have impacted our society in the 75 years since their railfan adventure. They were able to wander around Incline while loaded log cars were being lowered down the steep logging

incline. Liability and security were not issues for the employees. It was just a couple of railfans enjoying the day, and recording it for our enjoyment years later. Thank you, Wilbur, and all of the other railfans of your era for all that you have done for current-day prototype modelers.

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WHAT'S NEAT WITH KEN PATTERSON
column

Ken Patterson

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Saving watts with LED lighting strips ...

In this month's video column, Mike Budde dry-brushes rust streaks, Chris Palomarez paints locomotive wheels, and Ed Richardson shows how he operates a radio-controlled HO scale pickup truck. There are also model-like aerial drone clips from Durand, Michigan, and a quick look at building the B.T.S. laser-cut kit of a C&O depot.

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▶ PHOTOS AND VIDEO OF SUPERB MODELS

1. This month I experiment again with layout lighting, this time with LED screw-in light bulbs and old track light heads I had stored in the garage. I have been removing 4-foot shop lights over the staging yard and replacing these with the older style track light cans that take screw-in bulbs. The new LED bulbs use only 8 watts and provide as much light as an old 60 watt bulb, and are priced at about $2 each. So this is an affordable way to light the staging yard using the old heads.

2. This change in lighting created a nice environment for viewing the staging yard, with even light over the entire area. Simply removing the glare of the 4-foot fluorescents was much nicer.

Click here to play video.

Playback problems? Click here ...

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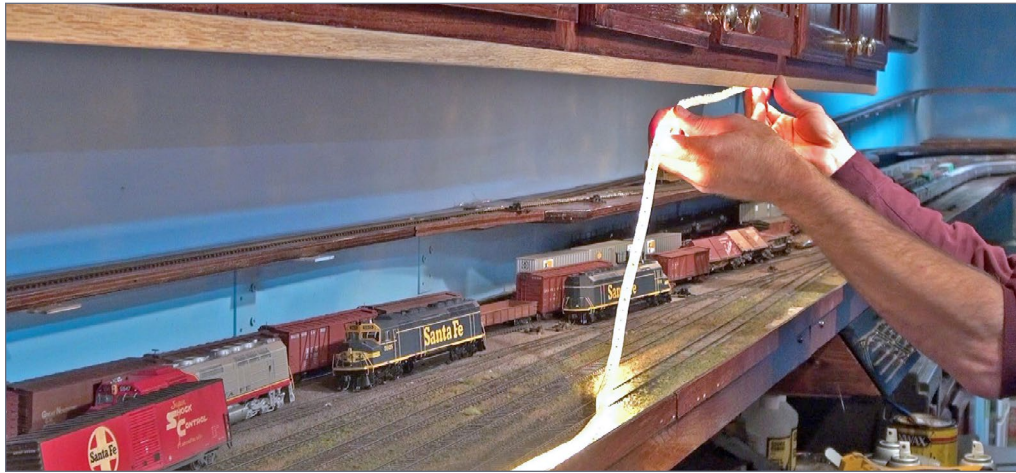
3. I have also been adding LED strip lighting under cabinets that hang over my staging switch yard. I hot-glued a 13-foot strip of lights purchased at Home Depot to half-inch oak trim corner stock. This wood trim acts as a shallow valance keeping the light focused on the trains.

5. Mike Budde shows us how to use dry brushing techniques with oil paints to apply rust streaks to this patched-out Athearn GP40 from their "#Ready2rust" line of painted models.

4. This valance hangs under the cabinets for the full 13-foot span of the yard. This provides even and dimmable lighting. It replaces the old puck lights and saves 100 or so watts in electrical use over the old system.

6. Use burnt umber oil paint, a brush, and paper towels. Mike squeezes some of the paint in to the black cup lid, then blots the brush almost dry on the paper towel. Before applying the paint to the model, he removes the hand rails on both sides.
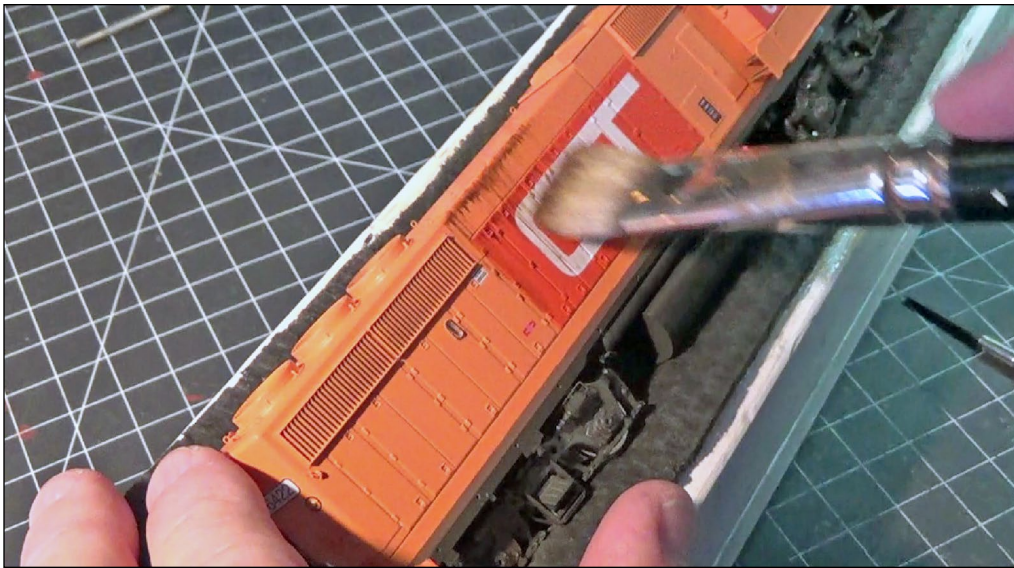
7. He starts at the top of the long hood and pulls rust streaks straight down across the center of the model. Straight and exactly vertical streaks are very important here.

8. Using a smaller brush with a wetter wash of the same burnt umber, Mike flows color into the hinge and door latch detail.
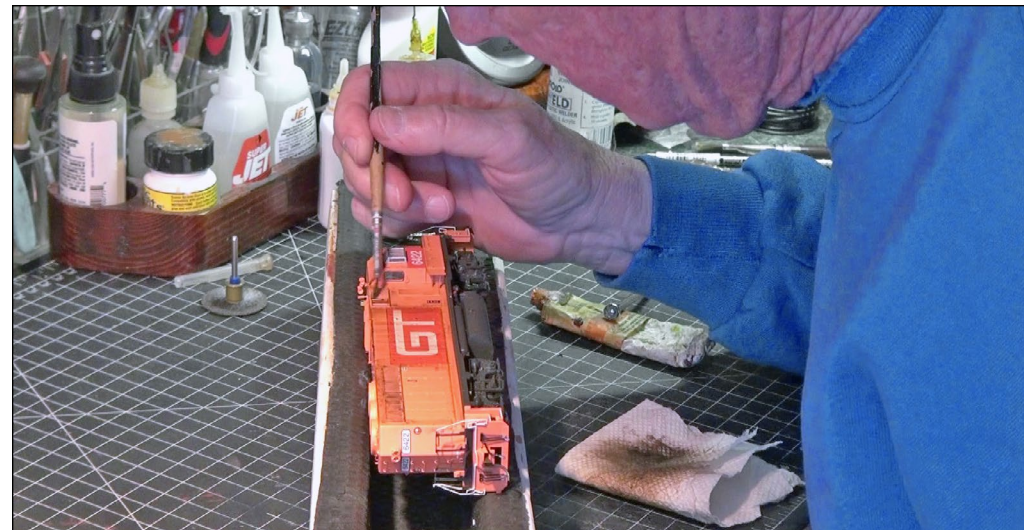
9. He washes the air filters with the same small brush, keeping the side areas under the filters not as weathered. The raised filters protect the sides of the locomotive, as Mike describes in the live video weathering presentation this month.

10. You can see the difference in the area under the filters, compared to the unprotected sides as Mike uses a detailed dry brush stroke to finish up the wash along the sides and below the air filters.
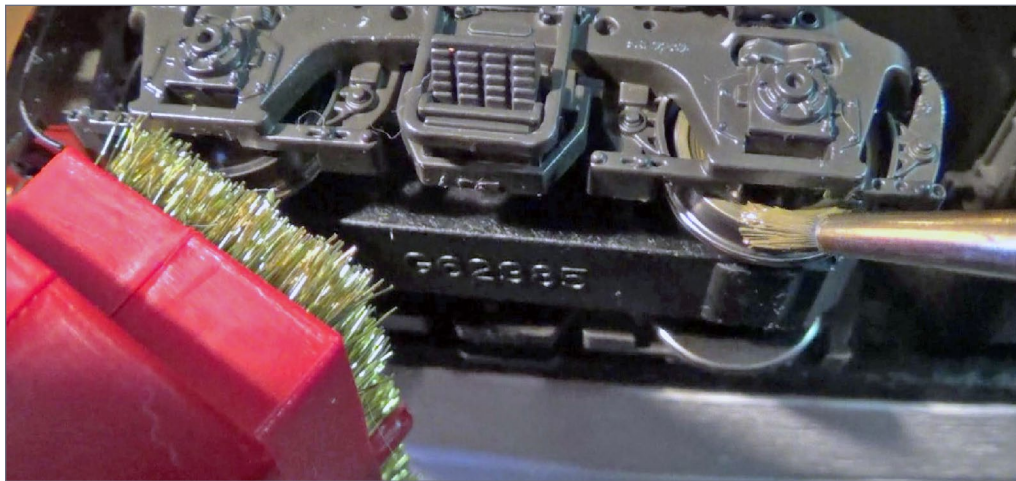
11. Chris Palomarez shows us how to paint the wheel sides of the locomotive. He powers the model with a Kadee wheel cleaner brush while he applies paint with a small brush full of brown.

12. Finish the roof of the model with a thin coat of locomotive exhaust. Thin Model Masters black paint 90 percent, then use an airbrush with 20 psi pressure to slowly build up paint.

14. The pickup fits comfortably in Ed's hand. The batteries are stuffed under the camper shell.

13. Ed Richardson stops by with a radio-controlled River Point Station pickup truck. Mike Budde test drives the model over some of the roads we use in photo shoots.
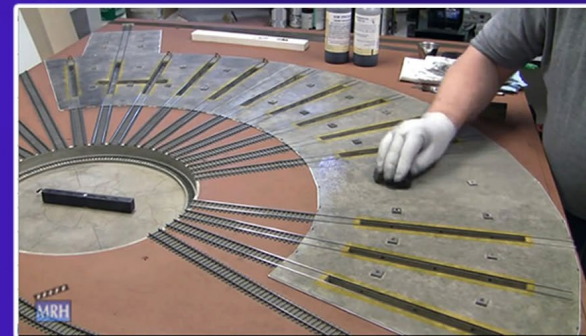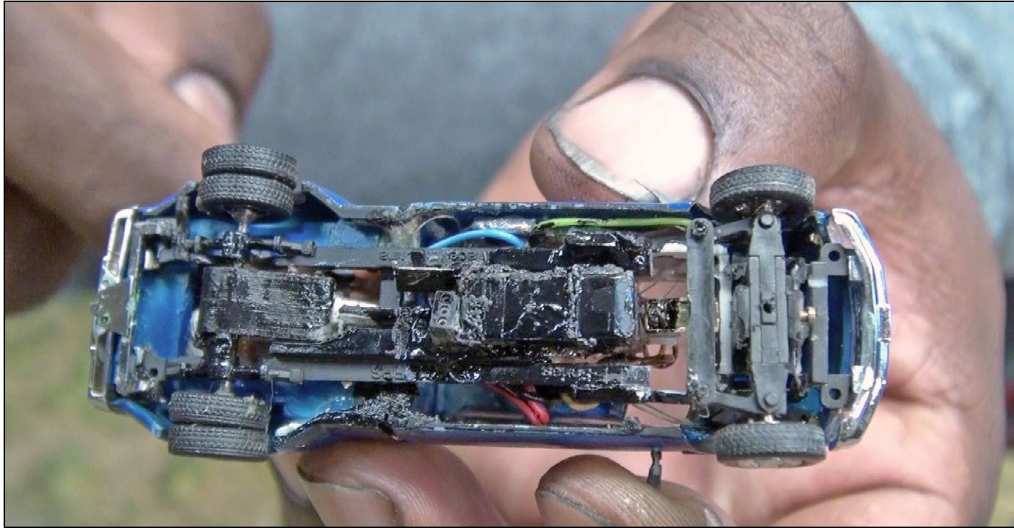
15. Looking under the model you can see the servo and gearbox, the charging connector and the independent front axle with full side to side steering. Ed orders his electronics and gearboxes online from solexpert.de [sol-expert-group.de/1-87-model-building:::48.html]

16. River Point's trucks are perfect candidates for conversion to RC power. They have the space for the electronics and look fantastic with the nice River Point Station paint finish.

17. Jon Dietzen sent in a few more video clips of Durand, Michigan. This month there is a segment, that I show you here as a still photo, where the town looks just like a model. The color treatments for cement, roofs, cars, etc. are here to be seen in the drone video this month. Jon shot the video at the same angle that we view our layouts from.

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18. This month we build a B.T.S. C & O station kit, with a little freelancing to fit into a spot on a shelf diorama.
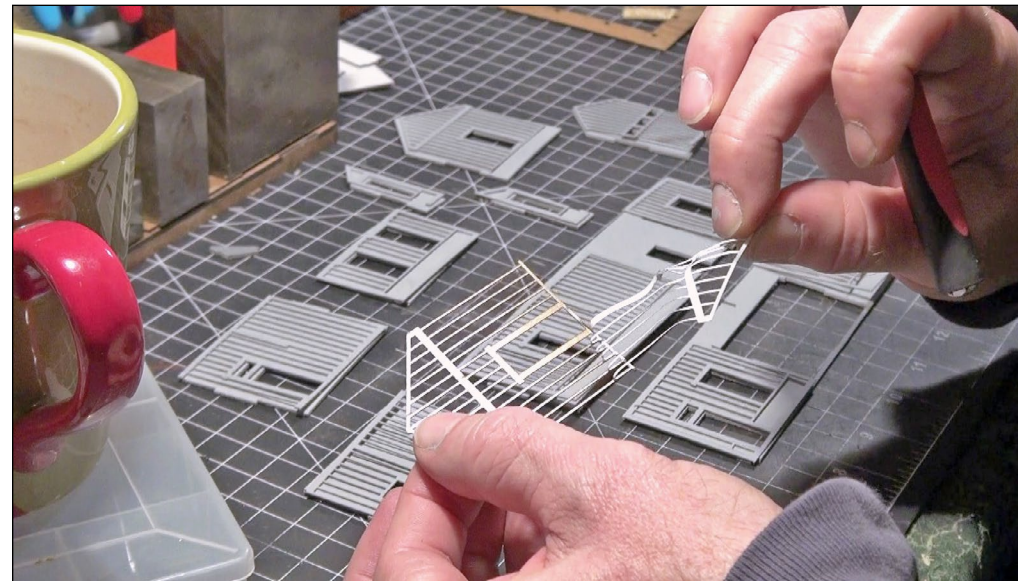
20. The board and batten trim is laser cut in one piece for each wall section, saving a lot of assembly time.

19. I started the kit by painting all the parts before construction. I painted the exterior walls with gray primer can spray paint.

21. I taped the walls together and found a spot on the shelf layout to plant the station. I need to cut off the restroom section of the station to make it fit in the space and clear a wall.

23. I built a Plexiglas base for the structure and laminated this with scale 2x10s to make passenger walking areas. The foam base is cut 1/8 of an inch deep so the station will sit flush with the scenery.

22. After eliminating the restrooms, I had to fill the rear wall with matching trim to make the kit look complete. I used the extra parts from the restroom section we did not build.

24. After building the base of the kit, I decided not to use it, and just sit the station on top of our new Plexiglas base and planked platform.
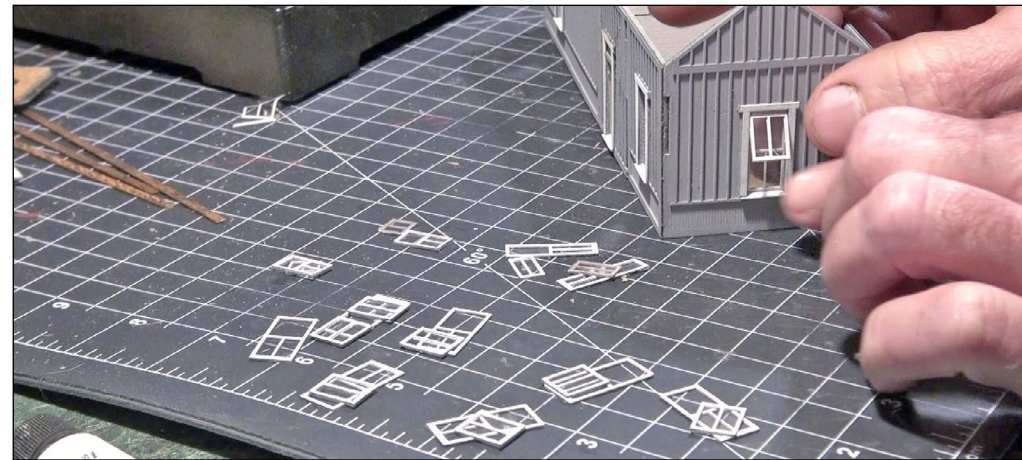
26. The windows are peel and stick construction. After sticking them on acetate, I cut them out from the sheet with a hobby knife and glue the finished windows into position in the building.
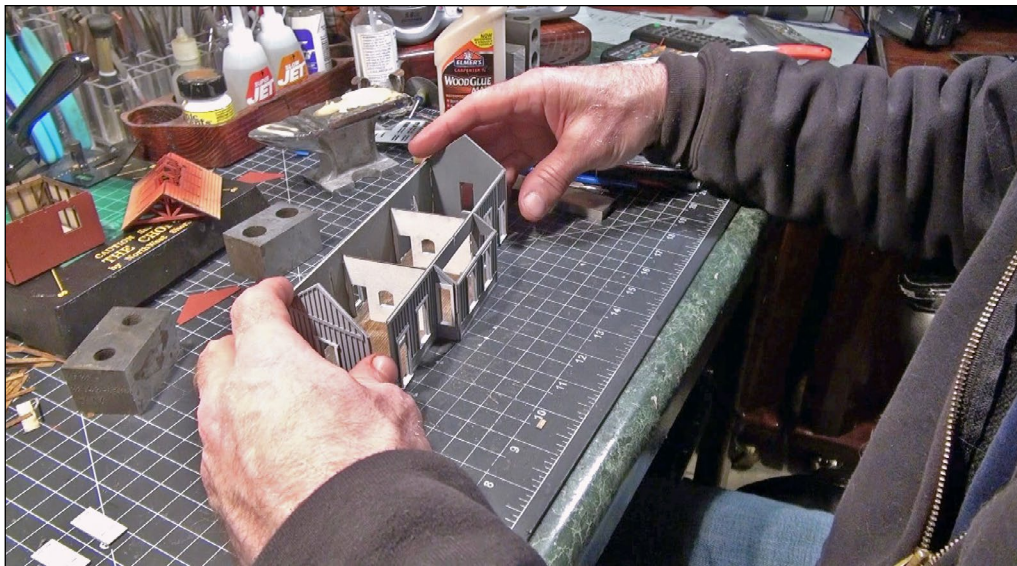
25. I fastened the exterior walls with wood glue after installing the prepainted window and corner trim.
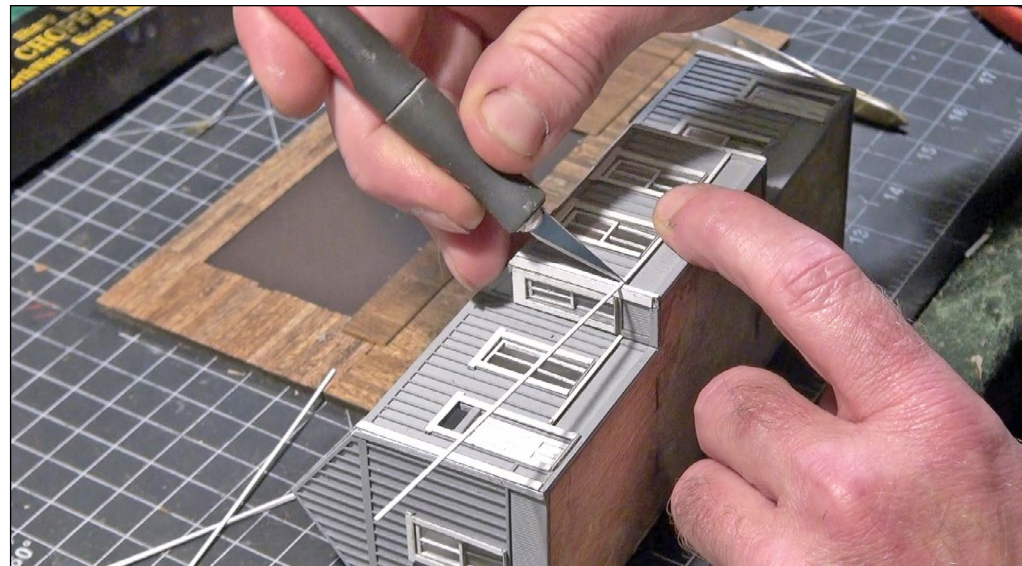
27. I also add chair rail trim around the entire structure, taking my time to get clean cuts for each piece

28. I prepainted all the roof trim by sticking these pieces to a strip of masking tape to hold them during airbrushing.
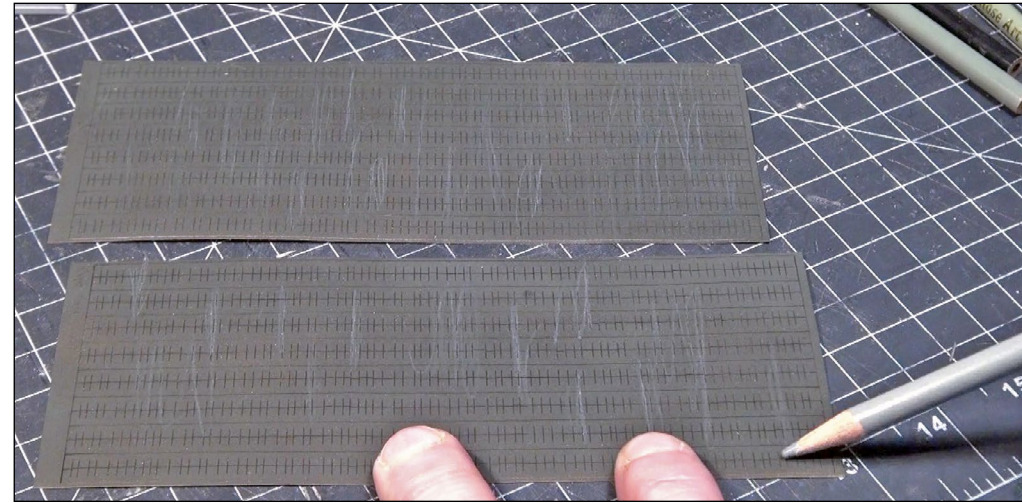
30. Turning my attention to finishing the roof, I colored laser cut shingles (that did not come with the kit) black, then followed up with grey pencils to accent random shingles.
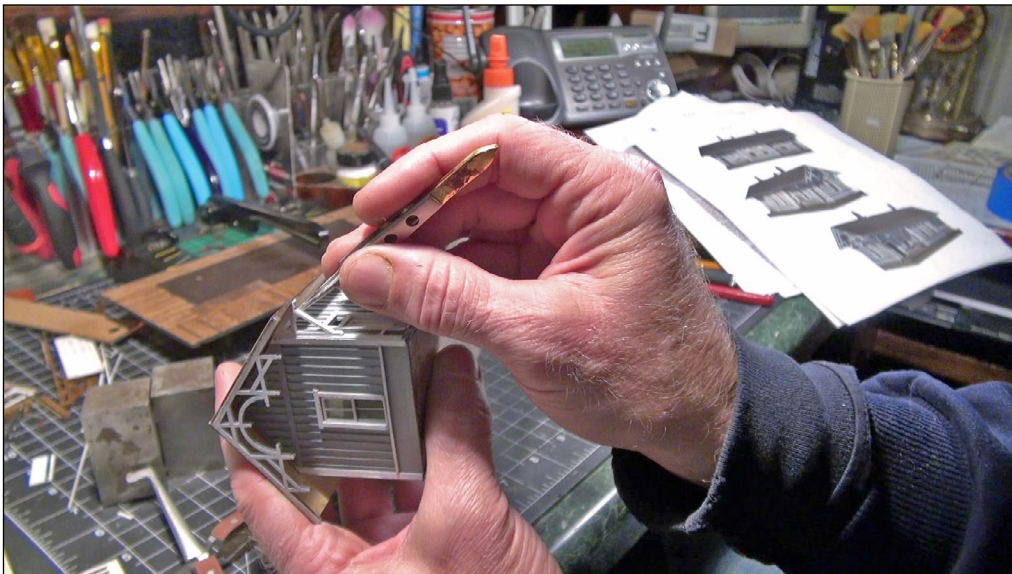
29. I glued the roof trim pieces to the outside walls. This allows me to remove the roof, by not gluing this trim to the underside of the roof plywood.

31. Here you see the finished shingle roof as I test-fit the fireplace stacks to the roof. With that, the building is essentially finished. I now have a passenger drop-off point on my shelf diorama layout with this beautiful station model.

32. We end this month's video with a Tank Train runby, shot during a sunrise. The video is fascinating, with the sun playing through all the detail of this Athearn Tank Train. ☑

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Model Railroad Hobbyist | May 2016 | #75

IMAGINEERING
column
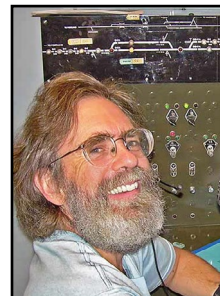
Doug Geiger, MMR

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Freelancing fun in operating sessions...

There are many degrees of freelancing, from strict adherence to the real world prototype to a whimsical representation of reality. A very popular middle-ground is the proto-freelancer. This is a model railroader who models or follows a real railroad, but composes from their imagination the locale, or the name, or the setting, and even the era in which that prototype railroad exists on their layout.

Purchasing already-painted locomotives and rolling stock in your favorite prototype scheme can save many hours of painting and decaling. Many model railroads these days fit the proto-freelancer mold. Arguments can be made on all levels for the appropriateness of freelancing, too. But whatever form your freelancing takes, model railroading is broad enough for everyone.

As you probably know, model railroading has many interesting and enjoyable parts. That is why the hobby is so interesting to so

▶ EXPLORING THE CREATIVE SIDES OF THE HOBBY

many people, and why so many of us are in the hobby for a life-time. Woodworking, electronics, modeling, painting, artistry, and history are just a few of those components. And operating the trains realistically is yet another one of those pieces. That is what operations and op sessions are all about: running your layout as if it were a real railroad.

Operation is fast becoming a growing segment of our marvelous hobby today. With the abundance of ready-to-run equipment, getting operations up and running on a layout is much quicker than it used to be.

Attending conventions, open houses and club meetings can be a way of socializing with other model railroaders who might share your interests. Operation is another part of that social glue in model railroading. There is nothing quite like having several of your friends over to run your layout and share their experiences with you and each other. Operating your layout by yourself can be OK, but throw in some cooperation and coordination for moving those trains around, and your op session becomes much more fun.

A sign of a great op session is when the crews give each other good-natured ribbing and teasing. The sign of a bad op session is when no one talks to anyone, and the session seems a lot like work. Operations also needs people management if you have more than one person running your layout. So people skills, along with modeling skills, are required. Since man is inherently a social ani-mal, we all can use op sessions to get in touch with each other.

Although many folks are content with modeling and building a layout, for some, operations adds the final dimension to the hobby. Some have said that we "just play with our toys." Others have tried to emulate the prototype to such a high level that operations can be intimidating or frustrating for the crew members. Fun opera-tions need to be somewhere within this spectrum, depending on the layout owner and the makeup of the operators.

1. Maintenance–of–way equipment takes a piece of track out of service. The gondola car provides detection for the signaling equipment.

Operations can be just getting together with your friends and running your layout. Or it can be an intense session of running your layout as if it were a real company, bent on making a profit (or a loss). But whatever your flavor of "ops" is, you can always inject some fun by adding some prototype-based scenarios into your op session..

For most folks who are deeply into operations in model railroad-ing, we tend to take our hobby seriously. Operations tends to lead the hobbyist in that direction. Take for example command con-trol. Removing the "model railroad-speak" of DC-block control moves our layout closer to reality. Real world locomotives all run independently of each other, so why should our model locos be any different? And as for train movement, almost all layout own-ers who operate follow some prototype practice of train orders,

schedules, oral authority, or signals. Although op sessions have been called role-playing games or 3D chess, it is rare that owners write all their own rules. It is so much easier to copy the prototype! And your fellow operators usually know many of those rules since we all carry our own "grip" of knowledge, mostly based on the way the real railroaders run things and what we hear and read about.

We also subconsciously carry these rules across different layouts as we expand our ops experiences. The special interest group OPSIG has grown tremendously in the past decade to cater to those model railroaders that desire to learn more about the prototype, and how to apply their rules to your model railroad.

The last few years have seen an explosion of knowledge about how the railroad industry worked in the past and how it works today. Real railroaders in our modeling ranks have given us the information required to accurately simulate the prototype. How we apply that knowledge to our "op sessions" forms our "rules" when we operate. The degree of simulation of the prototype is where freelancing can be applied to operations. We can remove or reduce some of the boring aspects of running a real railroad, like paperwork. And we can add the thought-provoking skills of switching rolling stock. Puzzle-solving is a common trait for many operators.

Operations implies some sort of freelancing. Just the act of compression in our buildings and scenery is one example. The often-heard "good enough" philosophy takes center stage in operations since there is almost no way that a single individual layout owner can detail everything to match a prototype 100%. Some compromises must be made to allow for time to operate! Scratchbuilding every structure on a large layout would leave no time to operate it. And having ultra details on rolling stock can be difficult to maintain, given the handling of cars like

2. The Big Hook has been called out to some accident on the Granite Mountain Railway. The old crane is a steam-powered one from days gone by. In the far distance we see a narrow gauge freight crossing over an ancient wooden bridge.

uncoupling during an op session, so the layout owner needs to remember this. Introducing our vastly over-scale hands into a finely detailed scene can spell disaster to intricate details that normally are applied to high-fidelity prototype models. Fixing broken equipment and general maintenance will be required if one has regular op sessions. Like the prototype, deferred maintenance will take a toll on how your layout runs, so keep to a schedule of regularly repairing your layout and its components.

The role-playing that is introduced during op sessions is another sort of freelancing. The multiple roles that many of us wear during an op session would be unheard of in real railroading. Unions usually prohibit an employee from performing another employee's job. It is rare that the engineer of a modern train is also the conductor and also brakeman. Some shortlines might,

but the regionals and the big guys certainly don't. But on model railroads, these chores are commonly lumped together, even with two-person crews.

And how about that single yardmaster on our layouts? Most prototype railroads have a huge labor pool and work round-the-clock using several shifts of people. We must freelance those many jobs into a select few. We even freelance the time interval on our model railroad empires, using just segments of a day and/or fast clocks to speed up time. Again, we must freelance the real world to apply it to our model operations, but please use the real world for inspiration and example.

Our paperwork is also freelanced in our op sessions. Consider the volumes of reports, waybills, and orders the prototype used. We trim much of that paperwork or even condense it to fit our layouts and operating schema. When was the last time you saw a real switching crew using car cards? They use switchlists, usually quite cryptic to the casual observer. Since our crews run our layouts maybe a dozen times per year, we make the paperwork as readable and obvious as possible, nothing like the prototype.

From the earliest days of real railroading through the 1970s, the prototype used dozens of clerks to keep track of car movements. And more clerks did the billing duties. There were stacks of tariff books to calculate the costs and how to bill the customer. So how many of us model railroad operators to determine profit and loss after a session? Or to fill out complete waybills when making up a shipper request from our miniature industries? Or send bills to those industries to pay for the car movements? I imagine that very few of us do any of those tasks.

Given all the operating sessions I have been a part of, it never ceases to amaze me just how many different ways we go about

doing operations. We run the spectrum of trying to match a certain day of how actual trains ran on a specific railroad to a session in which we take on certain personas in dealing with each other. All operations involve some sort of freelancing, given the constraints our layouts impose on operating it. Just think of the huge variety of controls we use just to throw a turnout! Or the many ways just to run a train.

How we use signals must always be freelanced because of the complexity in signaling. Do we use a telegraph to communicate with each other? Do we sit in a chair to run our locomotives? Have we thought about minimizing the footsteps for our miniature switchmen? Do we have unions? Are our crews paid? How about modeling weather conditions? You see, model railroad operations must have some degree of freelancing to be able to attract and maintain crews.

So freelancing must be applied to many phases of model railroading, including operations. If you host regular op sessions on your layout or manage someone else's op sessions, consider adding some interest to those sessions to keep your operators connected and focused on having fun. They can ensure that everyone has enjoyment and wants to return to your next session. Nothing relieves boredom more than introducing some prototype-inspired ideas into your subsequent op sessions.

Enough editorializing; here are some ways we add fun to our own Granite Mountain Railway (GMRy) sessions. Included are some examples of the paperwork we use, too. All these ideas may not all be pure freelancing, but they do keep the operators coming back. Some of these are op session activities that many folks may not think about. Consider adding variety to your next operating session by using some of these concepts. Try one or more in your next op session, and see what happens. I guarantee that it will generate interest and discussion.

Maintenance-of-way

Many of us build models of the maintenance-of-way (MOW) equipment, but rarely use it. On the Granite Mountain Railway, we routinely take one of the tracks out of service at selected sidings for MOW work. Each session sees that work move across the layout, one siding at a time. The time set for MOW work is usually 8 a.m. to 5 p.m. on the fast clock. Within that time period, selected MOW rolling stock is positioned on the track, along with a resistance

wheelset-equipped car or caboose to activate the electronic detection to keep the dispatcher from running a train into the equipment [1]. After the scheduled "work" time, the equipment is manually removed and normal train operations can commence. Usually a MOW Notice is given to the dispatcher to inform them of when and where the maintenance is to take place.

Wrecks

Some folks have added situation cards when problems arise in a session to add spice, but these can seem forced if done too often. Instead, having spontaneous situations can be more fun. On the GMRy, if a wreck happens, then all sorts of activity begins. A

3a-c. This is the accident that is described in photo 4. One well car almost destroyed the signal mast. Note that it was a pup trailer that got caught on an overhanging rock.

GRANITE MOUNTAIN RAILWAY

701 SOUTH TERRY STREET   LONGMONT, CO 80501   (303)-651-2225

ACCIDENT REPORT FORM

Date: 10/3/15

Time: 5pm (am/pm)

Location: EAST RELIEF AND CURVE

Train(s) involved: BN78 , ____ , ____

Engine(s) involved: 6338 , 6335 , ____ , ____

Engineer(s): Lee , ____ , ____

Dispatcher on Duty: Rich

Fatalities: 0

Remarks (describe the accident):

TRAIN LEFT EAST RELIEF AND DERAILED ON THE CURVE. SIGNAL TO DEPART RELIEF WAS GREEN. INVESTIGATION DETERMINED TOP OF ROADWAY TRAILER HIT A ROCK NEAR THE EAST RELIEF SWITCH - The rock jumped in the way!

4. This is the actual accident report form as filled out by one of the crew. Note that there were no fatalities reported. Sometimes the crews have fun filling in these forms – rocks usually don't jump in the way!

wreck is defined when one or more cars fall over – not just derail. First, the dispatcher must be told about the wreck. They must then call the appropriate yardmaster to assemble a wreck train. Next, the Big Hook train is sent as quickly as possible to the site of the wreck [2]. Meanwhile, the errant train crew takes photos at the wreck site [3] and begins filling out an accident report form [4]. When the wreck train arrives at the nearest siding to the accident, it is rearranged so the Big Hook is closest to the wreck. If any cars indicate via their waybill that they are loaded, those cars are pushed to the side into the scenery. Empty cars are put back into the wrecked train or added to the wrecker train. Then the wreck train is removed from the accident site and stored somewhere close. It now loses its high priority and is worked whenever the dispatcher can return it back to its home yard. Wrecks occur without warning and add a lot of fun (and frustration) to a session, especially if the wrecked cars are carrying live loads! Everyone will want to see the wreck, and some folks try to give their theories as to the cause of the accident.

Snowfall

Another situation that you can add to an op session is simulating a snow plow train. On the GMRy, when it snows within 24 hours of an op session or during an op session, the plow train [5] is called out. It runs as long as the real snowfall happened or whenever the superintendent (yours truly) determines that enough disruption to the session has occurred. Paperwork [6] informs the crew, dispatcher and the yardmaster what is needed, and where the plow train must be run. Our snow plow train runs over approximately 75% of the layout, and must be turned around when completing a pass over the mainline. Regular trains must be held at the one of the two end-point turn-around locations until the plow has arrived and been properly repositioned. Then

the trains which have been "patiently" waiting follow the plow train at a slow speed until the other endpoint is reached. The regular trains then proceed around the plow train and continue on. As you can imagine, running the plow train really disrupts an op session, and can cause quite a lot of backups and schedule changes for the dispatcher. Although we have had over 330 op sessions and we live in Colorado, there have been only a handful of plow train runs, enough so that the crews remember most of them quite well!

5. The plow train will be busy on the other side of the snow shed. The snow must not be too deep, since the plow is not one of the GMRy rotaries. Instead it is an old gondola that has a heavy steel wedge applied and is loaded with rocks for ballast. The switch heater uses propane stored in that small white tank by the side of the track. During one of the summer op sessions, a company tank car is run to each of these tanks in the GMRy high country to replenish the propane.

GRANITE MOUNTAIN RAILWAY

701 S. TERRY ST., LONGMONT, CO 80501   (303)-651-2225

SNOW ALERT

To: GM Dispatcher, Mesa Yardmaster   January 3, 2004
From: traffic department, GMRy

Beginning at 12noon: the SNOW PLOW EXTRA will proceed all trains between Nooksack (NS) and Totem (TO). Locomotive shall be GM F-units, #517+523. The consist should be:

Jordan spreader plow
engine
tool car boxcar
caboose

The snow plow extra will depart from Mesa Yard. Fueling and sand service will be done at Nooksack. The plow will work until 12midnite or until released by the superintendent. Train schedules may have to be adjusted because of weather conditions, so always be prepared for changes to the schedule. The superintendent will advise as to any annulled trains.

6. A Snow Alert bulletin is issued whenever actual snowfall occurs within 24 hours of an op session. The bulletin outlines how the plow must be run.

Fan trips

A great way for a modern modeler to run something different in an op session is to have a steam locomotive fan trip [7]. You can use whatever odd passenger cars you can find since most prototype fan trips use a hodge-podge of equipment that usually come from several private car owners and/or museums. Combine heavyweight cars and lightweight streamliners for a really kaleidoscopic mixture. Invite your operators to bring their own private cars and add them to the train. And prepare some paperwork to inform crews of where the photo run-bys are scheduled and to keep everyone safe [8]. Run this type of operation on an infrequent basis to keep interest high.

7. The GMRy's only surviving steam engine (a 4-8-4 Northern, #155) has just pulled into the Nooksack passenger station. The contrast between the railfan power and the modern intermodal trailer train passing by on the north track is quite dramatic.

GRANITE   MOUNTAIN   RAILWAY

701 SOUTH TERRY STREET   LONGMONT, CO 80501   (303)-651-2225

TO: C&E on Railfan Extra   January 2, 2016
       Dispatcher
       Operating crews

RAILFAN SPECIAL ORDERS

- Uses GM #155 4-8-4 steam locomotive, located in roundhouse.
- Shop forces to ready locomotive and cars for train.
- Cars to be used include: BN dome car, plus four ex-IC passenger cars, including two coaches, a baggage and an observation.
- Locomotive should be attached to passenger equipment no earlier than 12noon.
- Departs Union Station, Bremer at 1pm, westbound.
- Proceeds to Nooksack, with a water stop at Mossy Rock.
- Locomotive is turned at Nooksack after coaling, sand and water.
- Consist does not need to be turned or rearranged.
- Departs Nooksack around 4pm, traffic permitting.
- Arrives back at Union Station around 7pm, traffic permitting.
- Locomotive is cut from passenger cars before entering Union Station.
- Yard switcher to push passenger cars into Union Station.
- Locomotive is moved to service facility for sand, water and coal and then returned to roundhouse before 8:30pm.
- Passenger equipment is to be left in Union Station.
- Five photo runbys have been promised, conditions and traffic permitting. The Bremer Railroad Club has requested that after their members have detrained, the train backs out of sight and then steams past their photo line. The train then backs up to reload passengers. Be **EXTREMELY** safety-conscious during unloading and reloading. The five locations are to be:
  1. westbound, let passengers off just west of bridge over Sweetwater River by Colton.
  2. westbound, let passengers off at Mossy Rock depot.
  3. westbound, let passengers off just west of Corkscrew trestle by Mossy Rock.
  4. eastbound, let passengers off at Mossy Rock depot.
  5. eastbound, let passengers off at handcar shet at Mossy Rock.
- Excursion train has no priority over any other trains. All meets, etc. are at the dispatcher's discretion.
- Remember, you are the railroad's ambassadors, so make our guests comfortable, but safe.

Signed, Doug Geiger, President of the Granite Mountain Railway (and member of the Bremer Railroad Club)

8. This is the Railfan Special bulletin issued to the crew and the dispatcher. Note the locations for the photo run-bys and the reminder to keep everyone safe.

POTUS and private cars

A political campaign train or a POTUS (President of the United States) train can add interest to an op session [9]. Like the fan trip, generate some paperwork to tell the crew and the dispatcher how long to make certain stops so your scale candidates (or the President) can give their speeches. Use of a heavyweight Pullman car is quite appropriate for a modern-themed railroad, since these prototype cars are almost always owned by a very rich person to whom political candidates seem to be attracted. Many POTUS trains have an advance section to ensure that the route is safe for the President's train, so you should run a short passenger train just ahead of the POTUS train. You can also add a private car to the tail of your passenger cars to simulate the rich folks taking one of their holidays on your layout [10].

9. The Vice President is giving a speech from the back platform of the POTUS train. A Pennsy heavyweight sleeper has been outfitted with several loudspeakers (made from O-scale locomotive bells).

10. An Illinois Central private car has been tacked onto the rear of Amtrak #5. The car is owned by a rich client who likes to travel in style on the GMRy.

High-wide trains

If your clearances permit it on your layout, running a high-wide train can be fun [11]. Like the prototype, these trains are usually short and are run slowly (15-20mph) to avoid derailments. Most have a rider caboose or passenger car within the consist. Run it only very occasionally so your crews will appreciate the uniqueness of the specialized cars. Another special movement train for current-era layouts can be a Boeing fuselage train or a wind-turbine-blade train.

Helpers

Before command control, simulating helper operations was difficult. But with DCC, having independent helper locomotives can be easy to add and are fun to run, especially if a pusher locomotive is added to the rear of your over-tonnage trains [12]. Good train

11. This high-wide load is a Lockheed airplane parts car. Maximum speed for any high-wide is 20 mph on the Granite Mountain Railway.

12. Careful train handling is needed when pusher helpers are added to freight trains like this loaded coal train. It appears that spring has come late to the high country given the numerous snow piles.

13. A self-propelled Sperry Rail detection car is running over the Totem siding. A set of Forest Service trucks pass overhead on one of the state highways.

handling is crucial to avoid string-lining the train on sharp curves. Of course, bad train handling justifies calling out the Big Hook!

Determine where the slack is running in and out within the train to avoid problems. Head-end helpers are much safer to run and can still add interest to train movements. Before the advent of steel cabooses, a rear-end helper was often added ahead of the caboose to keep the draft forces from crushing the fragile wooden caboose. If your railroad era dictates wooden hacks, then rearranging the train to add and remove a rear-end helper locomotive can generate quite a bit of "play" value.

Sperry Rail

Occasionally, a prototype railroad needs to run a rail detection train. You can either scratchbuild or kitbash one of your own rail detector cars. Some railroads even built their own track geometry cars, usually self-propelled. In HO scale, the Walthers Sperry Rail car is a great model to use [13]. Run the detector car (or train) slowly and have the operator record any trackwork problems on your layout [14], then fix those problems before your next op session, helping to keep deferred maintenance in check.

Defect detectors

Although not strictly a freelance function, defect detectors can add to the fun to an op session. By using the electronics from Boulder Creek Engineering (bouldercreekengineering.com/trainboss.php), you can easily add a detector. It can randomly sense when to alert a passing train's crew that a defect, e.g., hotbox or dragging equipment, has been discovered and the crew will need to do something about the defect. Setting out the ailing piece of rolling stock can add more "play" value to running the train. Of course, unless you model a really decrepit railroad, defects should only occasionally be triggered. One

14. Any track defects are recorded on this GMRy form. It usually takes a full session to run the Sperry Rail detector car over the entire mainline.

defect every fourth or fifth session is enough to keep the crews alert and focused.

Daytime and nighttime

Consider adding nighttime operations to your sessions. Signals and headlights look impressive in the dark [15]. Buildings should have interior lighting to add to the simulation. A side benefit is that crews tend to pay more attention to their trains and do less railfanning and socializing when running trains during a night session. Of course, make sure to add lighting near the floor to keep from having crew falling or tripping. Give your crews flashlights or led hats as an aid during nighttime operations.

15. Nighttime operations are fun, but can be somewhat stressful since the crews must pay more attention to the signals. These two Oakway SD60s have just passed an intermediate signal. The large P on the plate on the signal bridge indicates that the red signal is permissive, trains must stop and then can proceed slowly past the red signal, maintaining adequate sight distance to stop if another train is ahead.
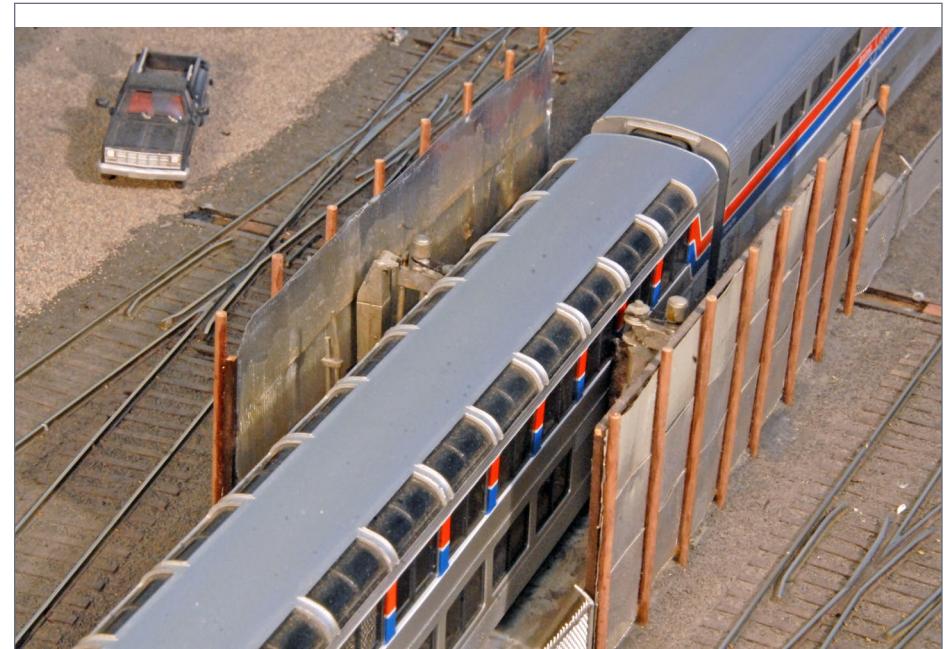
16. Washing each car at the Union Depot after the train arrives adds interest to passenger train operations. The large steel panels surrounding the car washer keep the suds and spray somewhat contained.

Passenger car operations

This operations concept has lots of potential, depending on how involved you want to get with passenger car movements. A quick study of the prototype yields many possible options, including: setting out/picking up a diner en route, adding/subtracting baggage cars and/or express cars during the holidays to simulate all the extra packages and mailings, splitting and recombining trains at interchange points on your layout, and running the consists through a car washer facility at a major terminal [16]. Complete articles have been written that describe the prototype passenger car operations. Consider adding a second section of a

normally-scheduled passenger train occasionally to simulate a spike in passenger loadings. Passenger car procedures can be as extensive as your imagination can make it.

Intermodal loading and unloading

If you have an intermodal facility, consider moving containers and trailers on and off appropriate well cars and flats. Generate paperwork to inform your intermodal yardmaster/operator which trailers and containers to unload and reload from which trains. Breaking up some of the unit trains of intermodal equipment adds variety to a session. It also provides another operating position for your crew members.

These topics are some of the ways to add interest and fun into operating sessions. Hopefully they have stimulated your desire to add some extra movements to your op sessions. All are based on prototype practices, but most need some freelancing to keep the boring parts of the prototype to a minimum. There are many more proto-freelancing ideas that can be applied during an op session depending on your layout and its constraints, including: weighing cars at a loading facility (like grain or gravel), running a weed-sprayer train in the springtime, blocking off a route so that trains need to use alternate routes on the layout, and loading hopper cars with a working flood loader and/or unloading those same cars with a working rotary dumper. Some other possible trains you could consider running include a military train, a Santa Claus train over Christmas, a circus train, and a rail-grinder train. Do you have a steam loco or ancient diesel that does not run properly? Just remove all the drive mechanism, make it as free-rolling as possible and then add it to one of your regular freights to simulate moving it to a museum. Just let your imagineering skills loose, think outside the box for operations, and have fun. ☑

OPSIG – Operations Special Interest Group of the NMRA

The principal purpose of OPSIG is to discuss, develop, and disseminate ways of operating model railroads to realistically emulate practices of the prototype. This includes sharing information on various methods of generating, moving, and controlling traffic to heighten the feeling that our models are an active and integral part of the national rail transportation network, serving shippers and consignees throughout the nation. We also discuss and communicate information about the methods and procedures used by the real railroads and ways of most practically and realistically adapting them to the model world. So if you like to operate the railroad you've created, this is a place to learn more and find others with similar interests.

There is a quarterly journal published that contains articles and information on railroad operations (both prototype and model), and listings of operating layouts, sessions, and events that members are invited to attend.

There is also a great website (opsig.org) that contains more information about the SIG, including contacts, upcoming events, resources, and much more. ∎

Click here for reader comments

Rick Norris and his Rio Grande Southern

On tour at this summer's Indianapolis NMRA National

by Rick Norris and the MRH Staff

Photos by Chris Thompson

Click here for reader comments

Also coming to TMTV in May

1. Rio Grande #341 eases out of the Rico engine house after servicing. Rick scratchbuilt this enginehouse from prototype plans using brick paper for both the outside and inside.

2. A 2-foot aisle with a ceiling-high backdrop behind. The aisle is tight, but you really feel like you're in the mountain canyons of Colorado!

MRH: Hello, Rick. What's going on here in your garage?

Rick: A little bit of everything, but mainly I'm doing the Rio Grande Southern Railroad. Even though it's an On30 narrow-gauge railroad, other than the track gauge compromise, I've tried to make it to scale by going off books. I've never been to Colorado, so everything you see here was done by researching books and studying info off the web.

MRH: Give us an idea of why you started this project, and how it grew into what it is.

Rick: Back in the '70s and '80s, I had a pretty good-sized railroad where my wife and I used to live. When we moved here 25 years ago, I just decided I had to tear the old railroad down, so I started into RC airplanes, and got away from model railroading, so I stored everything.

Then about 10 years ago she got Alzheimer's, and instead of being able to go out and fly, I had to stay in the house taking care of her – which was fine.

I retired at 62, and needed something to do, so I started to design a model railroad. It started out being a long 24-foot yard of Rico, CO, and I would just super detail everything. Then I got to thinking, I had this space over there if we took my airplane building tables out, and I could build more layout over in that section.

So I finished that side of the garage, designed what I wanted over there in the way of towns and scenes I could justify.

Things just went from there. It's been a lifesaver. If I hadn't had the model railroading to fall back on, I would have probably been a crazy man by now because it's just her and me. I take care of her of

course, but I can highly recommend model railroading for anybody that needs something to do inside. That's the reason I'm back into model railroading.

This garage was already here when I got the house. The previous owner had done blacksmithing in it, so I actually had to put the walls in and wire it. It didn't start out to be a railroad room, but it was going to be a carpenters shop, because I like to build antique furniture too. I insulated it real good, wired it, and everything.

As far as humidity and the elements go, I don't have a lot of issues with that out here in the garage. Only when we have a severe winter, then I must remember to pull my valise up off the floor so the heat can get in underneath the railroad. That's been the biggest challenge.

Space wise, getting the grades in here actually worked out pretty well. I run the same grades on this railroad from town to town, as what they really did on the Rio Grande Southern. It runs anywhere from a 2% grade up to a 4% grade in places. I was able to get the

3. A tired-looking RGS #41, a C-19 2-8-0, picks up a couple loads of stone in Rico. All of Rick's locomotives are diecast On30 models from Mountain Model Imports.

elevations I needed to get in here. The locomotives can still pull the load for the passing sidings on the layout.

4. A leased Rio Grande 2-8-2 leads and extra freight near Lizard Head.

That's another reason it is nice to model narrow gauge. You're not running long trains anyway, so the shorter passing sidings are not really a problem. Getting the smaller curve radius to work out for the width that I had in here was a challenge. It was tough to get everything to fit and still have some mile space left.

If it was just me, I wouldn't have any problem at all. But when you get tours coming through, the tight aisles can be a problem. People need to be understanding because there's one way in and one way out of the layout room. I can accommodate maybe five-six people at a time and that's it.

MRH: Can you describe the layout, the miniature world you're creating here?

Rick: This layout is in a 24 by 40 foot garage that started out as a woodworking shop. Then I started building RC airplanes in one third

of what's a three-car garage. That's the part that's basically got the narrow-gauge railroad in it now.

Maybe it's just a little bit more than a car garage. It's 16 by 24 feet. That's the reason the aisles are a little bit tight, to get the curve radius in there that I needed. Also this space gives me the length of run I needed to keep the grade manageable for the locomotives.

If it had been longer, I could have changed the directions a bit. But then it wouldn't have been like the prototype – it would have made the order of the towns different. So getting a larger room wouldn't have made a big difference to me.

Sure, I could've laid things out different, but that center aisle wouldn't have come out right. It would have been backwards to the prototype, and that would have bothered me. I want it to be as much like the prototype as it can be, and basically that's what's in there now.

The bridges are shorter, not quite as tall perhaps. A lot of the bridges would take up the whole 24 feet if you built them in O scale, so you have to downsize them some unless you have a huge building to build them in.

I think the people who come here, get a pretty good understanding of what it is out there in Colorado. I've had people who have been there tell me it looks right, and I've never been there. It's all come out of magazines, looking at pictures, and reading.

MRH: You can't go back a hundred years either.

Rick: No, you sure can't. I had a guy come one time who looked at that photo backdrop behind the Rico engine house, and he said "You know it doesn't look like that today?" I said, "I know that, but that's what it looked like in 1937."

There are some nitpickers out there, but I'm not doing the modern age. This is what it looked like in 1937-47, or at least something like this.

That would have been a harder life back then, too. They didn't have eight-hour work days where somebody would come out and pick them up when their time ran out. No taxicabs to haul them back to town, and no making a crew change midway through a run. No, those guys were on that engine or on top of that boxcar until they got where they were going!

If they got stuck in a snow storm, they might freeze to death out there. They had drifts sometimes that could cover an engine up. You could lose it out there in the winter!

I read in the books I've got where there's one particular place they had over 200 feet of snow drifted into this one valley. It never went away until that spring!

That's just unbelievable. I can't even fathom snow like that. That's an awful lot of snow accumulation. It would take one tough individual to live in those conditions back then, and to work like that.

MRH: Why did you pick this to model?

Rick: I've always been interested in narrow-gauge railroading and the way they got things done. They were given a problem to cross a gorge, or build a bridge, or work in the snow, or how to get the job done, and they would just get it done. That's always impressed me.

MRH: Let's talk about that. Why this railroad? Why this period?

Rick: I like the way they did things. They just hodgepodge everything together, using whatever they had on hand to get the job done. When I started model railroading, I did HO diesels and big prime movers like everybody else. In fact, I still have a lot of that

5. Rick hand-laid all his turnouts such as this three-way stub switch at Vance Jct.

stuff. I finally decided I really wanted to dabble in narrow-gauge because there are so many things you can model that does not require a lot of engineering behind it. Just do it!

MRH: Why does that appeal to you? Is that the kind of person you are?

Rick: Yes, if you give me a problem, I'll figure it out one way or the other. That's how I've always been: a problem solver. That's what I did in my line of work doing construction my whole life. Whatever I had to do to get the job done, that's what I did. Use to lay awake at night figuring out ways to get a job done, and I do the same thing with this layout at times too, planning out what I'm going to do.

I did plan the layout on paper, of course. A person that would start a model railroad and not put it on paper first is wasting his time or money as far as I'm concerned. There's a lot of planning that

6. Stone loading into wooden gondolas at Burns Canyon.

7. Rio Grande #343 eases out of the passing siding at Burns Canyon after a meet.

goes into something like this. The only thing I would have liked to be different is to stretch the aisles out wider than I have them, but that's part of doing the hobby

MRH: How did you develop the track plan?

Rick: I based the plan on the arrangement of the Rio Grande Southern, and how I could fit that track arrangement into this garage while accounting for the aisles that I'm talking about. The route starts at Rico, which was the division point.

Going south they went to Durango, going north they went to Ridgway . In order to get these towns on the layout in the proper order on the correct side of the rock wall, it had to go into the garage the way I have it.

I could have reversed things in places, but I could not get past that in my head. These books made it easy for me to see how to arrange it to scale, and follow the arrangement of the real thing.

Basically it came from reading and studying those books. Putting the towns into the proper order just made the most sense. Then sitting down with a pencil and paper, or in my case with my computer, I kept fiddling with the different curve radius options and how the track was going to fit in this 16 by 24 foot area. The result you see is what I came up with.

MRH: You're at the mercy of the actual railroad and what it did.

Rick: Yes, and that made it tough sometimes. There could've been an easier way to do it, but keeping everything correct to the

8. Engine 455 gathers its cars in the Rico yard in preparation for a trip north.

prototype was important to me, even though it was a bit tough sometimes.

MRH: What year did you actually start?

Rick: I think it was 2009. I've got everything marked underneath that benchwork when rails met at certain points. I could climb underneath the layout and give you exact dates. I'd say 2009-2012 thereabouts. It was a lot of work, I know that.

MRH: You have a lot of rock scenery! Did you expect that you would have this much?

Rick: Yes, I planned on it. The hard thing was I'd always used plaster before. I don't have any running water in here. I really didn't

want to mess around even running a hose down here to help with mixing up plaster. That mess almost ruined my other railroad with spills and stuff.

I checked into Joel Bragdon's geodesic foam system – it's a bit expensive, but the molds and the process are great. Once you get down to using the mix and mixing the way they recommend, there's not much mess.

I could put as much scenery up as I could hold up on a string of wire. I can put the base in easily, and I've got rock molds that are probably 24 inches square, or better. I like pouring them that big. It's a little cumbersome, and it helps to get used to the process first before you'd attempt those really large molds because you could waste some of the material if you're not careful.

It's better to start with some smaller molds, say 6 by 10. You could do the whole railroad with 6 by 10s if you had enough of them. I think I've got a total of maybe 10 or 12 of the much larger molds that I used on the whole railroad

MRH: Isn't the process of coloring totally different than doing plaster?

Rick: Well, yes and no. When you go to paint the scenery, I use an artist white pigment, instead of regular latex paint. I coat all that rock with the white, and then go back and apply acrylic colors over that. I make mixes out of them on a palette. I just use very little color, and put light washes on, and keep applying the washes in layers until I get the color I want.

I start with black, like lamp black, and then I spray it on with a spray bottle. I let that get in all the cracks and grooves, and then I sponge off any excess.

9. No. 462 Holds the main as it labors by the passing track at Burns Canyon.

10. Rio Grande 462 exits a snow shed with its freight in tow near Lizard Head.

I end up with a grey, but with darker areas on it. That's what really makes it pop out, and it's easy. If I can do it, anybody could do that. It's just that easy. I was always scared to death of scenery until tried this method of coloring the rocks. I'm sure you could do it on plaster too. Painted plaster will take the color a lot better than the raw plaster would. Raw plaster would just suck it in.

MRH: When you say it's easy, what motivated you to try painting your rocks?

Rick: I was using photo backdrops, like here behind the engine house, because at the time I didn't think I could do any painting on any scenery or backdrops. Then I got interested and jumped on the internet and Googled it. Painting backdrops, painting scenery – painting whatever.

There are some real good tips on the web, and I actually taught myself off the internet. It's just a matter of giving it a try and getting a rhythm down. A couple brushes is all you need. Then just go painting away!

I've got some places that I want to redo before this national coming up yet. That it'll probably take me maybe three or four days to get the feel of it back. I don't think it's hard, and I had shied away from artistic projects when I was younger.

People just need to jump in with both feet and try it. You can always paint or it and start all over again. As far as the sky goes,

11. RGS Caboose #0404 brings up the rear of a freight passing through Lizard Head.

I use that wet blue with white on a roller to get the clouds in, or using a sponge. Most important is to do it when it's still wet so you can blend it. That's about all I can tell you about painting scenery, because I'm no expert at it, believe me.

MRH: Tell us a bit about researching structures for the layout.

Rick: I have many books on the Rio Grande Southern, and they have a lot of pictures and drawings but they don't have a lot of measurements. I had to do a lot of scaling off those plans by comparing board sizes and whatever to come up with my own scale.

I've got a lot of plans. There's a place you can order plans, but most of them I just come up with by scaling them from photos. I think they turned out pretty good.

Another thing I like to do is scratchbuild. I've ordered plans, like for the engine house. I can't remember where I got them, but that engine house it took me maybe 9 months to build. It's got a full interior, and it's all built off the original plans.

There's one thing wrong with it, though. I don't know if I should tell you or not, but I didn't realize the plans I bought are reversed.

Why they did that, I don't know. Everything's the same on the engine house, so you can't really tell except the door on the side of the building is on the wrong side of the column. How I found things were reversed was by studying a picture of the engine house, and that's what tipped me off. Everything else matches, it's just that one door on the side that's on the wrong side of the column.

MRH: How did you model the engine house?

Rick: It has double-sided brick walls using brick paper. It has gatorfoam board walls, and then I put printed brick paper on both sides to make it look like there was brick on the inside as well as on the outside.

I scratchbuilt all the wood doors, the mullions, and the windows. It also has all the wiring inside. You can pull the roof off of it but I'm not going to do that. I had intended on making that something I would commonly do – take off the roof. But all the roof detail is so delicate that if I took the roof off it would take me three months to get all that delicate detail put right again. It's too risky for me to pull it off – so you need to just peek down inside through the windows and doors to see the interior.

It's got the machine shop and everything.

MRH: The brick is impressive.

Rick: I don't know how they copy the brick pattern so well.
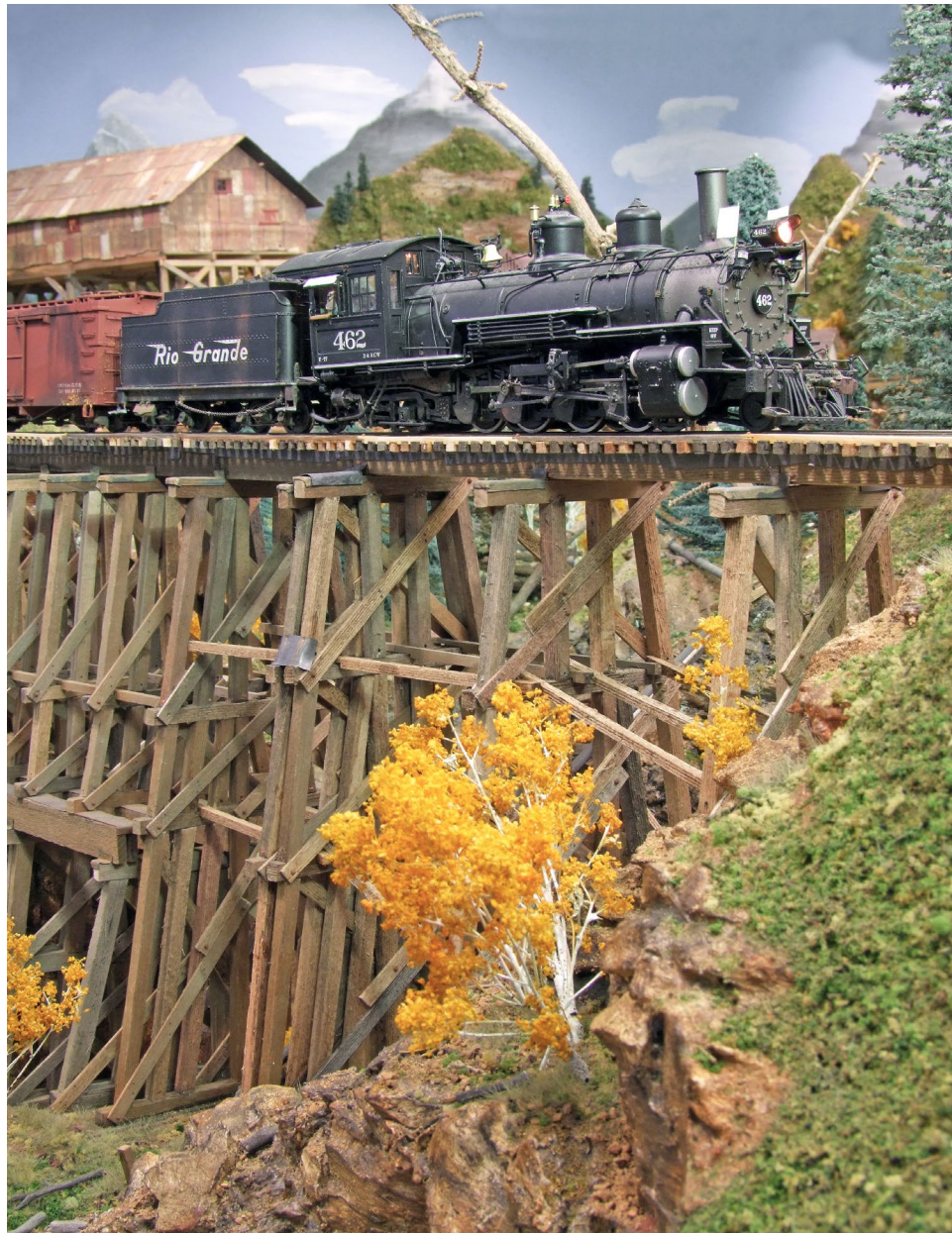
12. Rio Grande 462 leads an extra East over the long bridge departing Ophir, CO.

The arches on the building I did myself. I bought paper with a brick pattern on it. But they didn't make arches for the tops of the windows. In order to do that, I went to an old building uptown, the Caboose Tavern, with upstairs windows in it using curved arches.

I shot 2 or 3 different sides of that building complex, because it had different arches. Put the images on my computer, and I just kept working with them until I got the right arch for the window holes. It worked out pretty good. I made my own brick arches off the photographs I took with a digital camera

MRH: **Give us a rundown of your locomotives, and what you've done to modify them.**

Rick: All the locomotives come from Mountain Model Imports. They make diecast locomotives in O gauge. You can get them either in On3 or On30 – I went with On30. I figured I already had HO equipment in here, and might change my mind halfway through and want to go back to HO. This way I've already got the roadbed in, so changing back would not be that hard.

Those O gauge engines come with lots of detail on the engines. They're excellent running, and they're also about a third of the price (or less) than what a brass locomotive would cost you.

Probably a K27 and the others that I'm running might cost you $2,500, if you could find one that cheap, in a brass engine. I've got less than $500 in each loco. That's without a decoder or sound, (I put those in myself), but this is the cost of the actual engine out of the box. I'd say that's a pretty good buy.

They're good runners but I did have to do a few tweaks. On K27's for my sharpest radius, I had to rework the trailing truck so they'd take the radius without binding up. The longer the wheelbase, the

trickier it is because, things catch underneath. Every one of is a little bit different, and you have to work the little bugs out.

All in all, they're fine running locomotives, and the 2-8-0s have not had any problems, but I can't run them on a 4% grade very well. I have to be careful not to overload them.

I run two of them, double-headed, and get along pretty good. But that's a challenge too if you don't do it everyday. You could end up with locomotives on the floor!

MRH: How did you go about building the layout – and about how long did it take?

Rick: That's right! We should retire when we get out of high school because then we got the energy to do all the fun things.

MRH: How do you motivate yourself to do those things you don't like to do?

Rick: I think the carpenter work on the benchwork and roadbed went pretty fast. It's all spline roadbed. I cut it out on my table saw, and glued it together. I used pine for the spline instead of the hardboard.

The geodesic foam scenery went in quite fast. I can put it up three or four feet at a time, instead of just six inches at a time while waiting for a plaster mold to dry.

When I build geodesic foam scenery in a mold, I wait two or three minutes and it's ready to put up. I have 30 minutes of time or more while it's pliable before I glue it up there with hot glue. Once I put it up there, by the next morning it's rock hard. It's just a sheet of plastic, that's all it is.

I have a video monitor in here so I can keep an eye on my wife. I

13. Stone reloading facility at Rico, using dump trucks to fill wooden D&RGW gondolas.

will come in here 4:00 or 5:00 in the morning and work until I see her stirring in bed. Then I'll go up and take care of her. These hours are my building time, and I have been able to put a lot more time on the layout than I would if had still been working a full-time job and then coming home and trying to work on the layout. I would not have accomplished as much.

MRH: Any future projects to do on the layout?

Rick: I've been back to building scale RC planes, but since you guys have come, it's spurred my juices back to model railroading again. I would like to find some people interested in operating the railroad. In my situation it's hard for me to get out and be part of

a club, to go to meetings, or whatever. It's not that I'm a hermit – I just don't have the time to leave my wife.

I have thought of taking my cabinet tools out of here, selling them, and moving more things in. I could extend out into this part of the garage. There's more I could build. The layout is made to come off the walls at certain points. If I had the help, I could rearrange things in here, open the aisles up some more, and things like that. I'm getting close to 70 years old, so I don't know if I want to tackle that or not.

MRH: Did building the layout go like you expected? Did you have an anticipated finish date?

Rick: No, at the time I didn't have a date. Just get in there and get it done. I tried to squeeze as much as I could into my four-to-five hours a day that I had to work on it

MRH: What have been your greatest challenges and did you actually see them coming, or were there surprises?

Rick: I saw some of them coming, but I didn't know how how bad doing those curved trestles would be. They were a challenge because of my aging eyes. Also, getting back into those corners even with light was tricky. There's a lot of wood in one of those trestles! I cut all the wood for the trestles, aged them, and built jigs to put them together.

Spiking rail down is hard for me, and that's one reason I don't have handlaid track. I don't have the patience for it. I can do most anything if I have to, but pushing thousands of tiny nails into a board – that's just more than I care to do. It could cause a man to go blind! I couldn't fly my RC airplanes afterwards, because I couldn't see to get out of the garage!

14. Extra 462 East enters the yard at Vance Junction to perform some switching before continuing on to Deep Creek.

MRH: What do you like most about your layout?

Rick: I like the scenery and all the rockwork. The reason those aisles are a bit tight is because I want it to look like a canyon. I want to feel like I'm walking down a riverbed with high rock walls around me, just like it would have really been. I'm pleased with what I've done in the way of scenery.

MRH: What do you like least?

Rick: I've used some stub turnouts that give me some problems once in a while. I'm not real fond of them. You have to run an engine across those stub turnouts pretty easy, because they'll derail on you whether you want them to or not. Yes, they can be a problem, but they have to be there.

Believe it or not, Rico never had the stub turnouts taken out. It was the only place on the Rio Grande Southern Railroad that when they converted over to point turnouts, they never took out the stub turnouts in Rico.

15. RGS #461 passes over a long trestle before arriving at Ophir.

Out on the mainline they had regular, newer upgraded point turnouts, but those in Rico were there, and that's the reason they're there on my layout. I couldn't bring myself to put a different kind in there. Every once in a while I curse myself for leaving them in Rico, because they can be a problem.

MRH: There's a reason why prototype railroads aren't using stub turnouts any more.

Rick: Oh yeah. They can put you on the ground pretty quick.

MRH: Why did you choose the height you chose?

Rick: It's the angle I prefer to have when you look at the railroad. Rico is basically at a good starting point for looking at the railroad. If I made it any higher, then I wouldn't have been able

to get the elevation I needed in the rest of the room. So I had to strike a happy medium.

I could have made the layout lower, like the staging underneath it, but then bending over to work on it all the time could have been a problem.

Aiming for a happy medium height works best for me, because I can always put benches underneath to get up to the higher points as the track goes around in the room and you follow it up. I just think it really adds something to have real grades and a summit.

Sure, it could run better if it was all one elevation. Maybe you could make it look like it had the grades. But those grades are what those engines had to work against. With real grades, the model needs to work to get up the grades too.

I think it jumps out at you to see that elevation going up to a summit. In fact, if I had a little more room, I'd have made them higher yet, but I just didn't have enough length to do it.

MRH: Any other least favorite parts?

Rick: Electronics, I don't like electronics. I don't understand it as much as I'd like to. I install my own sound decoders, but I don't know how to program one. I use JMRI on my computer.

I have to pull an engine and take it up to the house to program it, because I just do not understand all the codes to program it directly.

MRH: How many feet of mainline do you have?

Rick: About 150 feet of mainline before it goes into staging.

MRH: How many turnouts?

Rick: I don't know, it's been too long since I put them in. I don't remember.

16. Residents watch over RGS 461 as she makes her way west through Ophir.

MRH: Just say all of them.

Rick: Yeah, all of them. There you go!

MRH: The minimum radius?

Rick: 32 inches minimum.

MRH: Ruling grade?

Rick: 4%.

MRH: What advice would you give to someone just starting out in the hobby?

Rick: I wouldn't go out and just buy anything you see. The hobby shops would like to see you do that, to just keep buying.

17. RGS 461 drifts around a curve and will arrive in Rico shortly.

Get a plan! Not necessarily on paper, but determine the era you want to model, and then stick with it in the way of equipment and everything else you buy. You'll save yourself a lot of money.

If you do that, you won't have a lot of boxes of sitting around or be wondering what you're going to do with everything. Brass engines over here in this corner, and so on.

I've got all that, but in my own defense those were all planned in HO. But before that, I was like everybody else. I would never listen to anybody. Oh, that's neat, let's buy that ...

You'll end up with a lot of worthless equipment that won't fit anywhere into what you finally get serious about doing.

MRH: **What do you hope the visitors to this summer's convention get out of your layout?**

Rick: I hope they're enthused with what I've done here. If they're interested in mountain railroading, I hope they feel I've done it justice. This has been a bucket list thing for me since back in the '70s when I started really getting serious about model railroading. Not that I want to get notoriety, but I have wanted to get an article in a magazine. This is a dream of mine to finally get the layout published.

I hope they see that anybody can do this. I have a background in moving dirt my whole life. I'm no artist or anything like that. I am meticulous, as far as that goes. You do need patience to do this, but I don't have much patience.

People who know me can't understand how I do this. I find if I can spend time working on the layout, it makes a positive difference in how I think about the world out there. I hope they see that too, and it spurs them on.

These young people – and the older guys too – they can do it! There's a lot of people who think they can't use their hands, but model railroading is a good hobby for proving they can do it. ☑

You can see Rick's layout at the Indianapolis NMRA Convention this July ...

Rick Norris
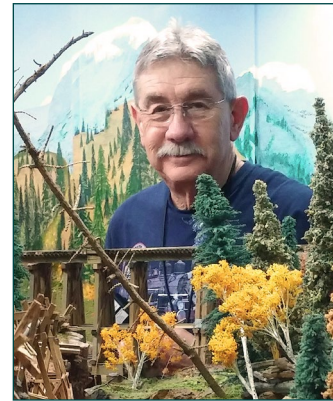
Rick Norris started out modeling contemporary diesel railroading in HO during the '70s and '80s. Then in the '90s, the O scale narrow gauge bug hit and Rick's never looked back.

Rick started out just doing a 24-foot long model of the yard of Rico, CO in On30. Because On30 is the same gauge as HO track, Rick was hedging his bets just in case he decided to go back to HO. Rick intended to do only a super-detailed Rico yard. But after building the yard, Rick extended the railroad just a tad further to give a some running distance. And then just a bit further for more running distance.

And so it went, until Rick had one whole side of his three car garage becoming home to his Rio Grande Southern from Rico to Deep Creek and points beyond.

Rick is now retired and lives with his wife in the Indianapolis area. Rick also enjoys RC airplanes and furniture woodworking. ◼

Also coming to TMTV in May

Click here for reader comments

Depot

Coal
Load Out

**Vance
JCT.**

Door
Lift Out

**Deep
Creek**

Ophir

**Lizard
Head**

**Burns
Cañón (canyon)**

Scenic
Divider

Stone
Load Out

Lift Out

To Lower
Staging

Elevated
Coal
Loadout

Stock
Yard

Tie Plant

Engine
House

Rico

Depot

Water
Tank

Oil
Dealer

St Louis
Tunnel Co
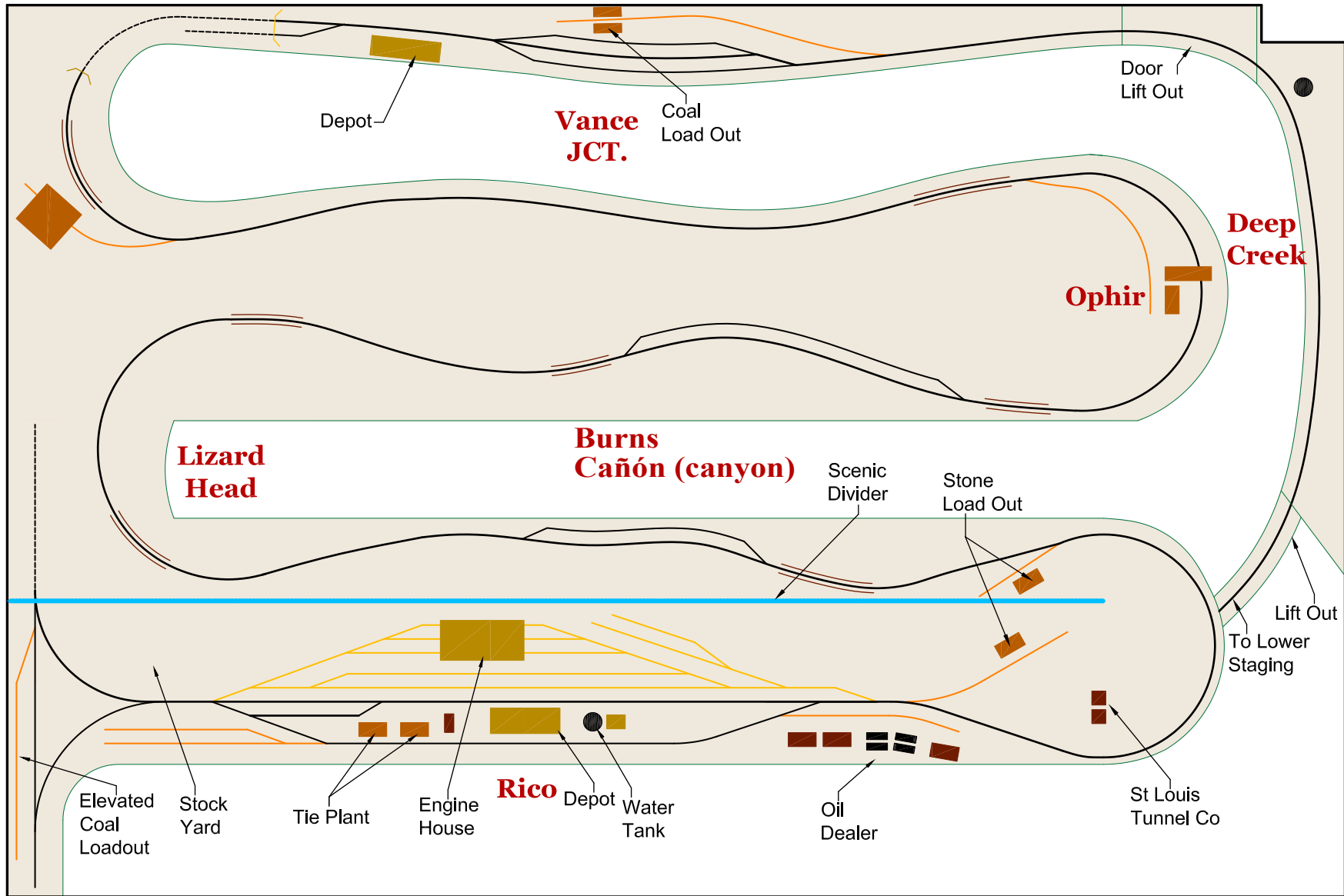
Rick Norris' RGS   On30

Layout 16' x 24'
Min radius 32"

——	Main / siding
——	Industry spurs
——	Yard tracks

RIO GRANDE
SOUTHERN
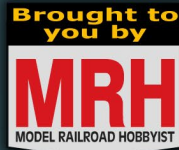
YES, IT'S A MODEL

compiled by
DON HANLEY

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1. DOWX has a load of molasses for delivery to the Landmark feed mill. The car has been spotted next to the heater house which, in addition to providing heat for the grain dryer, also provides heat for the molasses tanks on the ground floor.

The HO Scale tank car is an Atlas Master Line Trinity 17,600-gallon tank car, weathered with PanPastel powders and Testors paint thinner. The CSX box in the rear is an ExactRail Pullman Standard waffle-side boxcar weathered with Testors flat enamels and PanPastel powders. Christopher Snodgrass weathered the models and shared them on the *MRH* forum.

▶ MRH'S MONTHLY PHOTO ALBUM

2. The crew of CSX 1135 is busy pulling a Soo autorack from an unloading ramp in preparation for returning it to one of the automotive plants for another load of new cars.

Nick Campbell did a lot of detailing on the Athearn MP15AC. Some of the reworked items include reworking the trucks, scratchbuilt flange lubricators, working ditch lights, a new horn mount and new horn, and much more. The tank cars and the autorack are weathered following prototype photos using Gary Christensen's fade technique. The weathering is done with acrylics, gouaches, and oils.

3. Jack from France shared this O scale Southern box car that has seen years of service. The model is an upgraded box car from Roco during their short foray into U.S. rail equipment in the 1970s.

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See mrhmag.com/help for more on how to post an image. You need to be an MRH subscriber to post photos to our website, and becoming a subscriber is free, just fill out this form here. ◼

4. Great Northern 159 is blocking the road while pulling cars from the siding. The SW1200 is from Broadway Limited Imports and the boxcar is and Athearn 50' FMC 5347cf car. Jeff Whitney weathered both model following techniques he acquired from the guys at the Rust Bucket, AKA The Weathering Shop at the-weatheringshop.com.

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5. Dispatch, we have a problem: it seems someone decided the new building should be located across the tracks! Jappee, a regular of the *MRH* forum, posted this photo showing the roof details of his recently completed building.

Dan's Oil

A small industry in a tight space

by Mike Holly

All of the structures on Dan's Oil are scratchbuilt ...

Follow along, step-by-step!

WHILE PLANNING MY CURRENT CLEVELAND & EASTERN Railroad N scale layout, I dedicated some space south of the mainline for two small industries sharing a single spur.

One of the industries is Dan's Oil, a small fuel dealer serving the local area. Although there is no real prototype for Dan's Oil, I had a clear vision what it should look like. I remember an old tank storage facility in my hometown in the '80s. The facility was sitting right next to a railroad line but was served by trucks only.

The look of the old tanks with open piping was forefront in my mind when I thought about how to arrange this model.

After looking through several commercial kits available, I was not satisfied at all. I decided to build this structure from scratch. To give you an overview of Dan's Oil, here is a list what I built:

- Storage tanks
- Pump house

- Piping for unloading and filling
- Unloading hose
- Chain-link fence and board fence
- Lights

STEP 1: BUILDING TANKS

1. After cutting sections of PVC piping to length, I glued sheet styrene to the ends. I placed the pipe upside-down on the styrene until the glue thoroughly set.
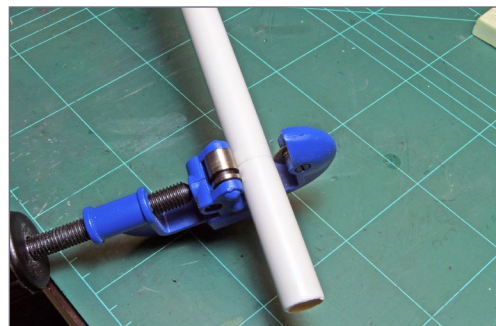
For the tanks, I cut 2" (5cm)-long sections from a 0.6" (16mm)-diameter PVC tube, using a tube cutter. I carefully need to tightened the tube cutter after each rotation until the section was cut loose. Too much force on the tube will deform it instead of cutting it.
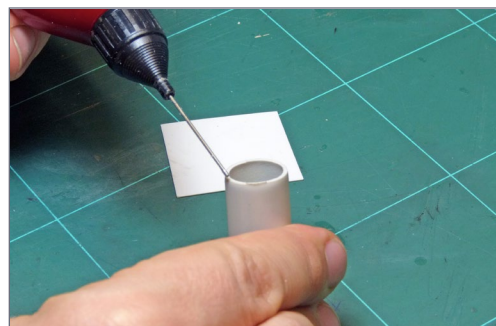
Next, I glued the sections to 0.020" (0.5mm)-thick styrene pieces using plastic cement. I made the styrene pieces slightly larger than the diameter of the tube. After the glue had set, I used a pair of scissors to roughly trim the ends to the circular shape of the tube. To get the final shape, I used a rotating sander disk, gently sanding the styrene ends to match the tube.

STEP 1: Building tanks *Continued ...*
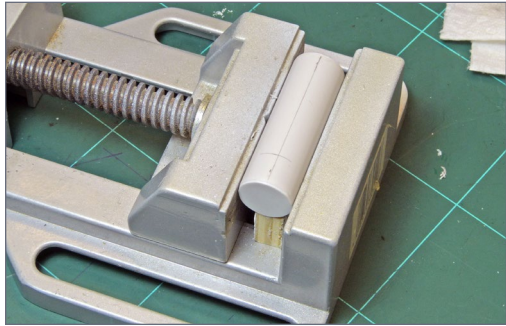
2. I marked the center line on top of the tank, as well as the drill point for the manway. I used a machine vise to hold the tank level and secure during drilling. The block of plywood prevents the tank from moving in height.
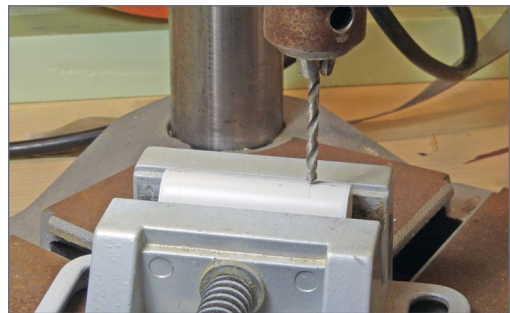
3. I used a drill stand to drill the holes for the manway. I made the first run with a small bit, and the second run with the final 0.23" (6mm) bit.

With this done on all six end sections, I moved over and added a manway on one side of the tank. For the manhole tubing, I used 0.23" (6mm)-diameter brass tubing. I cut section lengths of 0.590" (1.5 cm) with the tube cutter. I sanded one end of each tube flat using a power sander with fine-grit sandpaper to leave a smooth surface for mounting the manway covers.

Next I drilled a hole into the tank bodies to insert the manhole tubes. I did this after marking the center point on the tank side. I clamped the tank level in a bench vise and used a pencil to mark the center-line on the topside. Then I marked the center point of the manhole 0.39" (1cm) from the tank end and drilled a hole using a small bit. After this, I widened the hole using a 0.23" (6mm) drill bit.
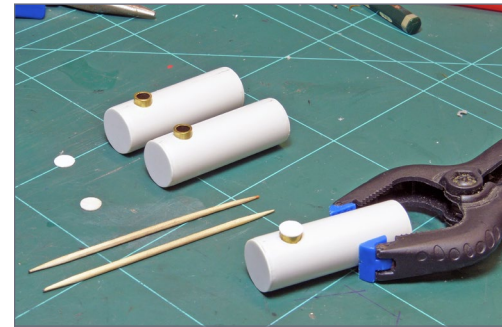
4. Testing the fitting of the manway tubs and applying the cover disk. This side of the brass tubing is sanded square for better adhesion of the CA glue. The disks are glued in place with gel CA to have little time for adjusting their position.

After drilling the holes, I smoothed the edges around the hole with fine sandpaper, and test fit the manway tubes. Before I permanently glued them in place, I covered the manway tubes with styrene disks previously punched out of 0.008" (0.2mm) thick styrene sheets. The disks measure 0.314" (8mm) in diameter.

I glued the covers to the sanded side of the tubes, trying to center them as close as possible. I used gel CA to glue the disks to the tube.

The gel gives a little time to adjust the parts until it sets.

For a foundation, I used 0.10" (2.5mm) H-beams cut to length, matching the overall diameter of the tanks. Tank saddles made of 0.039" (1mm) square styrene were glued into the gap between the H-beam and the side of the tanks, preventing them from rolling off the H-beam.

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STEP 2: The industrial walkway

5. I used a printed template for soldering various nickel-silver wires together to make the walkway railing.
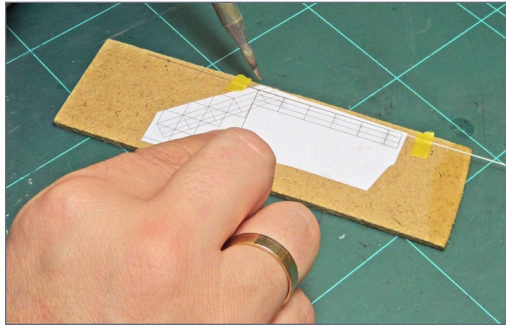
To allow access to the top side of the tanks I constructed an industrial walkway matching the width of the three tanks lying side-by-side.

I used brass 1.0 mm I-beams for the walkway frame, soldering the pieces together. To simulate a see-through walkway, I cut brass mesh matching the dimensions of the frame, and soldered it to the frame.
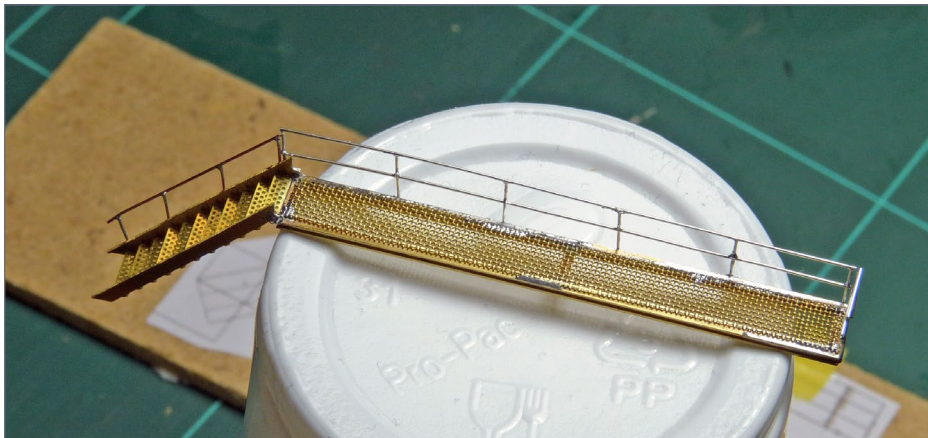
6. The complete soldered walkway is ready for painting. Notice the see-through brass mesh. Handrails are attached to only one side, as the other side needs access for the service-ways on the tanks.

I attached an industrial stairway from Gold Medal Models to the walkway. They are etched brass, and come flat. So I gently bent the sides and steps into position using a pair of tweezers. I cut off the etched handrails, as I wanted my own, matching the ones I built for the walkway.

Next, I used a modified version of my handrail template to get the correct aligning for the handrails. I used stretched-out nickel-silver wire to model the railings, and soldered all joints.

Finally, I attached the handrails to the walkway and stairs by soldering them to the I-beams and brass sidings.

7. Test placing the tanks and walkway and checking the height of the handrails.

STEP 3: THE PUMP HOUSE

For transferring the load from the tank cars into the storage tanks, I need a pumping facility. Since I am modeling in N scale, it is hard to find a convincing model of an industrial pump. So I decided to build a pump house and leave the pump used inside free to imagination.
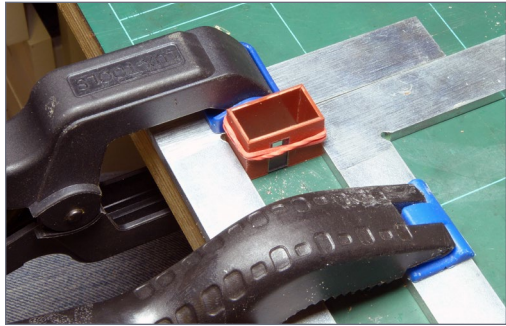
8. Metal squares are used to hold the wall-sections square until the plastic cement has set. The door is a left over part from my scrap-box.

9. To get the correct dimensions and straight edges for the door opening, I printed a rectangle with the dimensions on self-adhesive paper and stuck it to the backside of the wall. I used a razor saw to make the vertical cuts. The horizontal cut was done with a sharp X-Acto knife.

I built the pump house with a footprint of 1" by 0.59" (2.5 x 1.5 cm) and 0.70" (1.8 cm) high. I used brick sheets available from KIbri. I cut the needed sections and beveled the edges to get a seamless brick line around the edges. I added a door I had in my scrap box and glued everything together with plastic cement. To get the walls square I used two metal squares to align them until the glue set.

I spray-painted the brick walls off-white using my airbrush. Afterward I painted the door gray using a small brush. With this done, I gave the walls a wash of black acrylic paint thinned with isopropyl alcohol to highlight the mortar and give some light weathering in the process.
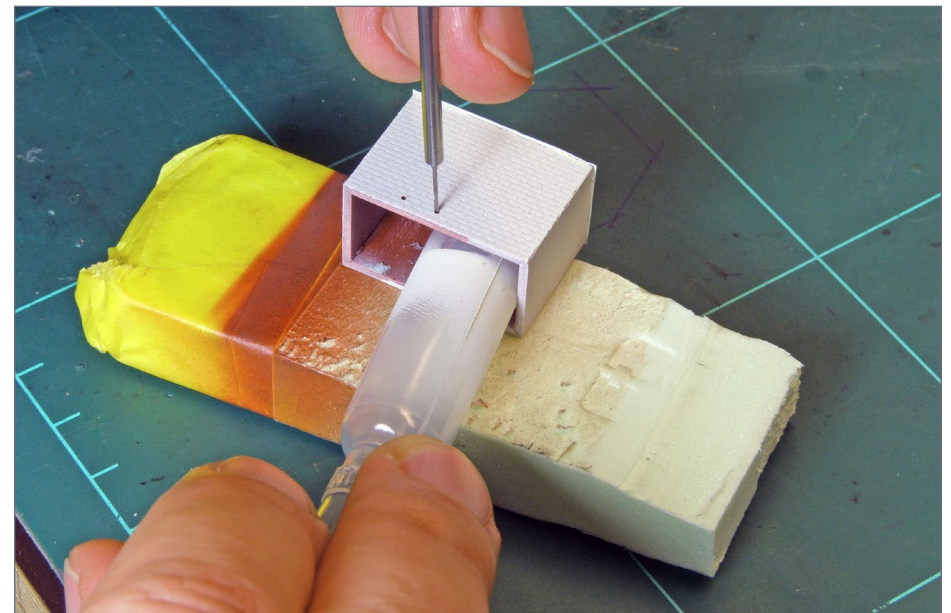
10. After spray-painting the walls off-white I drilled 0.02" (0.5 mm) holes for adding pipes later. I also drilled a 0.08" (2mm) hole for adding an air ventilation on the right side.

STEP 3: THE PUMP HOUSE CONTINUED ...

11. To turn a piece of aluminum foil into a piece of corrugated metal, I scribed the notches of an old computer hard disk cable to the aluminum foil with a cotton swab.

Next, I drilled 0.02" (0.5 mm) holes into the wall to attach piping, and one 0.08" (2 mm) hole for an air ventilator. After all, we are pumping petroleum products. I finished the pump house by adding a corrugated metal roof. I used aluminum kitchen foil and scribed it on an old computer hard disk cable I had in my electronics box.

13. The finished pump house with corrugated metal roof and attached air ventilator. I added a piece of scrap basswood as a step in front of the door.

12. The air ventilation pipe is made from 0.08" (2mm) styrene rod, beveled on one side, with a surrounding plate made from a styrene strip. The surrounding plate was cut to match the rod using a X-Acto knife.

STEP 4: Piping and unloading hose

With the tanks and pump house finished and glued in place, it was time to add the piping for filling and emptying the storage tanks.

14. I used AWG 24 copper wire to form the piping. For pipe flanges, I used small pieces of wire insulation.
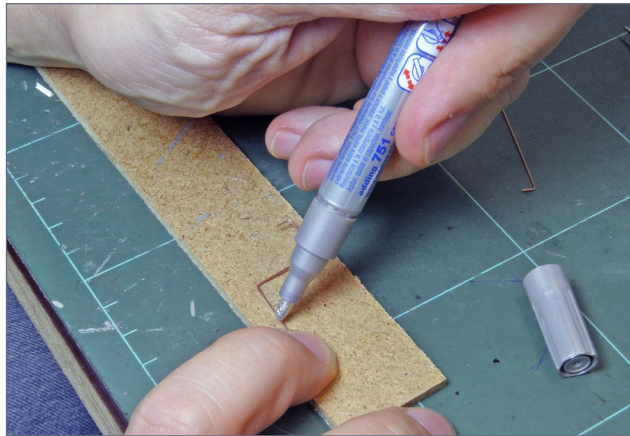
15. All piping was painted sliver using a permanent marker.

I drilled holes into each tank for the piping. I used a 0.02" (0.5 mm) drill, drilling the holes by hand. The hole for the unloading pipe was placed on the front side of the lower edge. Two holes are drilled on the rear top side of the tanks, one for the filling pipe, and the other for the ventilation stack. I positioned the holes on the center line of each tank by eye.

For the piping, I choose 0.02" (0.5mm)-diameter copper wire. Each pipe was bent individually using flat-nose pliers. To create the look of sectional piping, I added several flanges to the pipes. I clipped wire insulation with matching diameter into small slices, and pulled them onto the wire piping. To give the piping a contrasting look, I colored them with a silver permanent marker.

16. The pipes rest on T-shaped styrene pieces, glued upside-down and painted black.
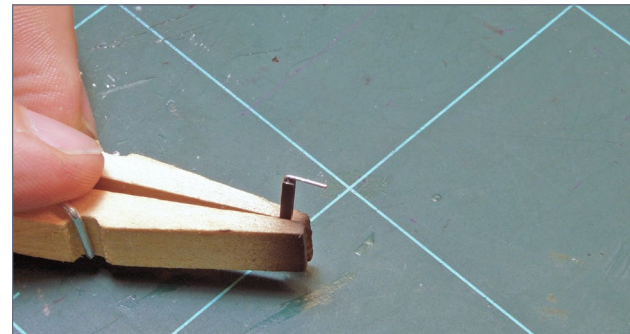
17. For the unloading hose, I painted a piece H-beam styrene black and glued a squared piece of piping on the inside.

When everything was set, I fiddled the wires into the pre-drilled holes and secured them to T-shaped bracing with CA. I used styrene T-profiles with 0.06" (1.5 mm) height, which I glued upside-down in their desired positions.

I also modeled two unloading hoses for the tank car receiving area.

For these I spray-painted a piece of 0.06" (1.5mm) H-beam styrene with black acrylic paint and glued a squared piece of

STEP 4: Piping and unloading hose *Continued...*
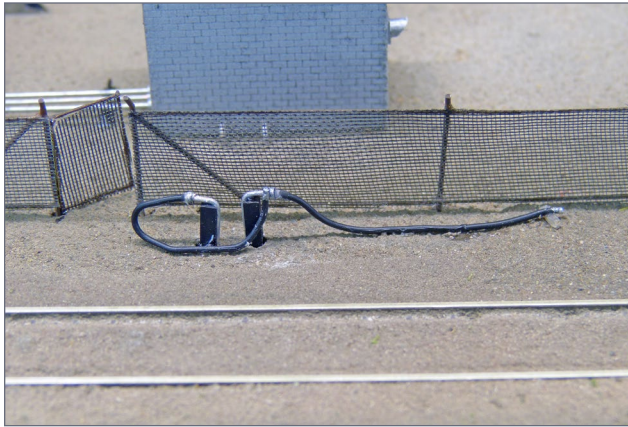
18. After the glue had set I trimmed off the excess top of the wire and attached a piece of wire insulation with CA glue. For the right look of the hose adapter, I painted the ends of the hose with the permanent silver marker.

AWG 24 (0.5 mm-diameter) wire into one side. After the glue has set, I trimmed the upper end of the pipe almost flush with the H-beam. Then I attache a piece of black wire insulation to the pipe with CA cement. For the look of the connection adapter, I painted the ends of the hose silver with the permanent marker.

STEP 5: Piping and unloading hose *Continued...*
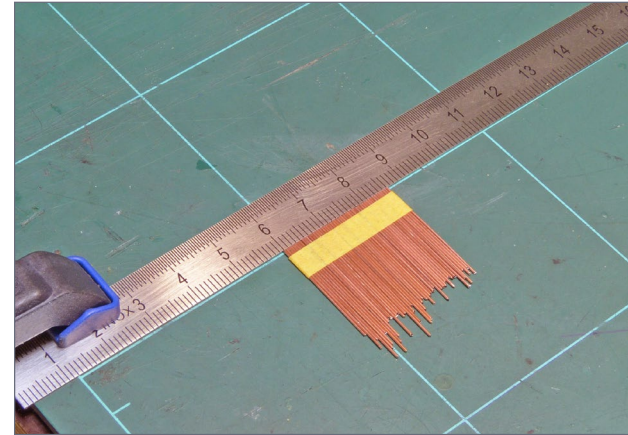
19. I cut AWG 24 copper wire to 1" lengths and aligned the wire pieces on a straight-edge to have them flush on one side.

20. I cut the aligned wire pieces to 0.8" length and sanded both ends square. Then I use a flat-nose pliers to bend the top end to 45°.

To secure the industry area, I planned to build two different styles of fence. I wanted to use a chain-link fence along the rail side and on the service road side. A wooden board fence protects the adjacent side next to the neighbor industry.

I started with the chain-link fence. I used AWG 24 copper wire to form the posts, and AWG 32 nickel-silver wire for the top and bottom rails which hold the chain-link mesh.

STEP 5: FENCING
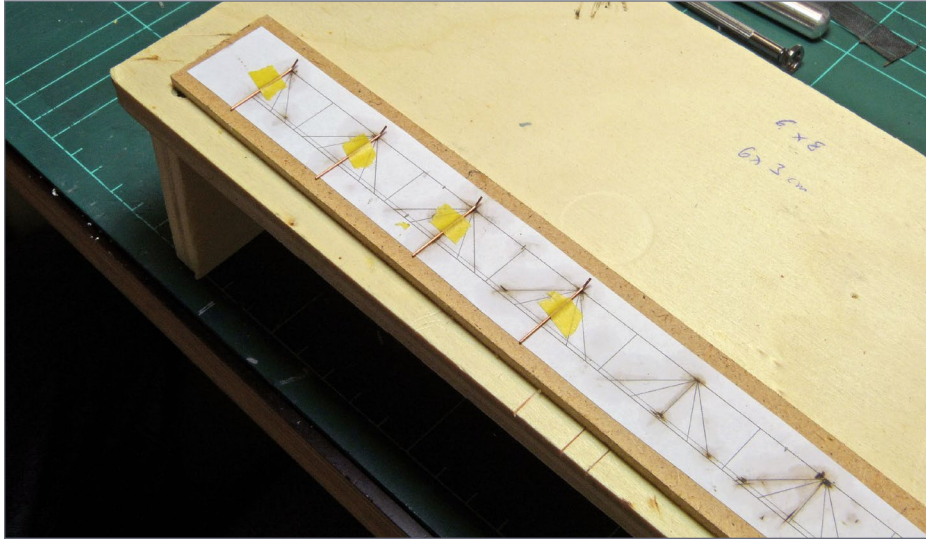
21. I placed the wire post on a printed template and secured them with masking tape, with the angled section is facing up.
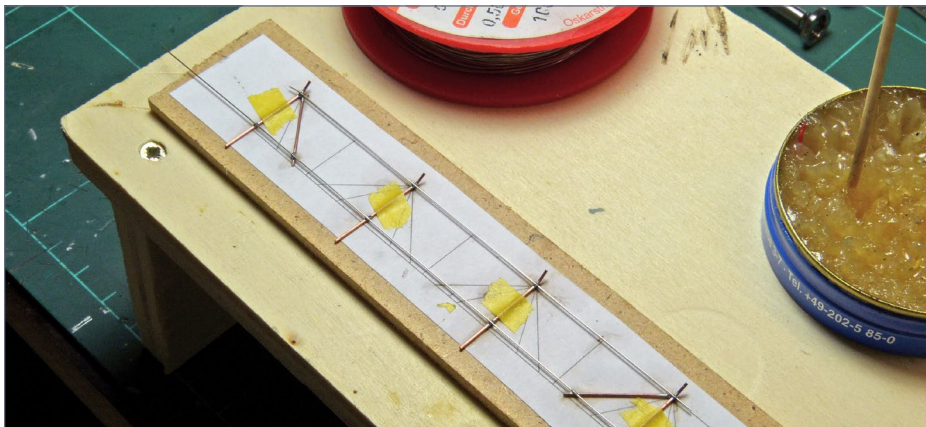
22. I soldered the end bracing to the end posts and added nickel-silver wire for the top and bottom rails.

For the posts, I cut a longer piece of straightened wire into 1" (2.5 cm) sections and aligned them by placing one side next to my scale. I secured the posts with masking tape and cut them to the final length of 0.8" (2.0 cm). I squared both ends of the posts with a rotary power sander. Finally, I used a flat-nose pliers to bend the top 0.1" (3 mm) at 45° to form the angled top of the posts.

Next, I placed the posts on a printed template and secured them in place with masking tape. Then I soldered the end braces to the posts, and cut them to length. After that, I soldered the top and bottom rails to the post, cutting the ends flush with the end posts..
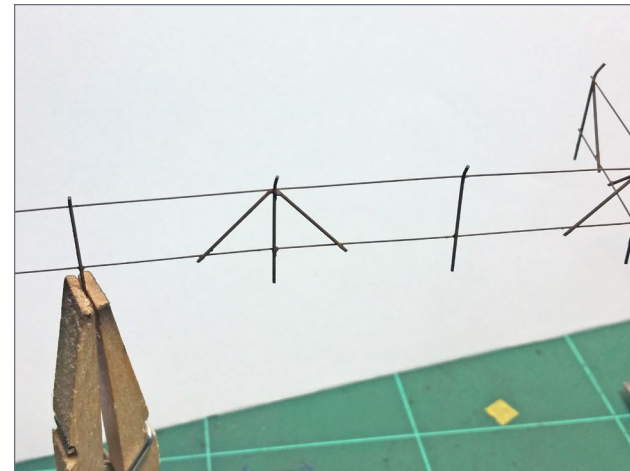
23. With the soldering done, I spray-painted the assembly in a rust color.

With the soldering complete, I used my airbrush to spray the fence with rust-colored acrylic paint. After the paint dried, I glued the chain-link mesh to the posts using CA gel. The chain-link mesh is a piece of gift ribbon. I first prepared a large section by spraying the ribbon with black acrylic. I removed excessive paint with a tissue and let the paint dry. This added some stiffness to the ribbon.

STEP 5: Fencing *Continued ...*

24. I added black-painted gift ribbon to the fence using CA gel. With everything in place, the overall look is convincing. Later added fine black EZ Line to simulate the barbed wire on top of the fence.

25. For the wood fence, I cut various dimensions of basswood with a NWSL Chopper II. I also used this tool for chipping of some boards from 2mm thick basswood.

The ribbon is attached to the fence rails with CA. After the CA set, I trimmed off the excess ribbon and placed the fence on the layout around Dan's Oil. I added fine black E-Z Line from Berkshire Junction Ltd. to simulate barbed wire at the top of the fence as a final detail.

For the wood fence, I cut square posts from 0.04" (1 mm) basswood and some 0.03" x 0.04" (0.8 x 1 mm) basswood stripes for cross members between the posts. The boards themselves are cut from a strip from 2mm basswood. I cut the boards to a 0.25 mm thickness, using a NWSL Chopper.

With all the parts cut, I placed the post on a template I made, and began gluing the cross-members between the posts with white glue. After the glue set, I gently removed the fence frame from the template, and flipped it over to add the boards.
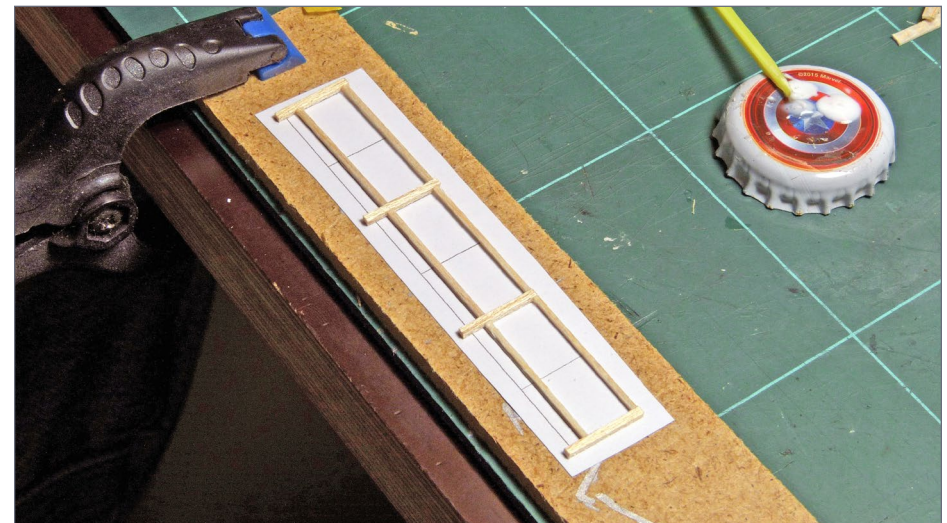
26. To form the frame of the fence, I glued bracing between the posts according to the template.

STEP 5: FENCING *CONTINUED ...*

After the fence was finished, I spray-painted it with boxcar-red and added a thin wash of black acrylic paint, followed by some weathering with using light gray and brown powdered pastel chalks.

27. After the frame was assembled, I added the boards using white glue. With everything in place, I spray-painted the fence boxcar red and added a black wash, followed by several coats of light gray and dark brown powdered pastel chalk to add some weathering effects.

STEP 6: LIGHTS

I added two security lights to the facility. I wanted a rural looking light, so I used a kitbash method Pelle Soeborg described in his book *"Rebuilding a Layout from A–Z,"* Kalmbach Books.

I took a 0.06" (1.5 mm)-diameter styrene rod cut to length and added a light head from a Faller street lights kit. I trimmed off the light-head from the lamp. Then I drilled a 0.02" (0.5 mm)-diameter hole into the head and stuck a piece of copper wire into it. I bent the wire to form a sharp angle and glued it to the previously painted rod using CA glue. After this, I painted the light head gray. Only the light diffuser was colored bright white.
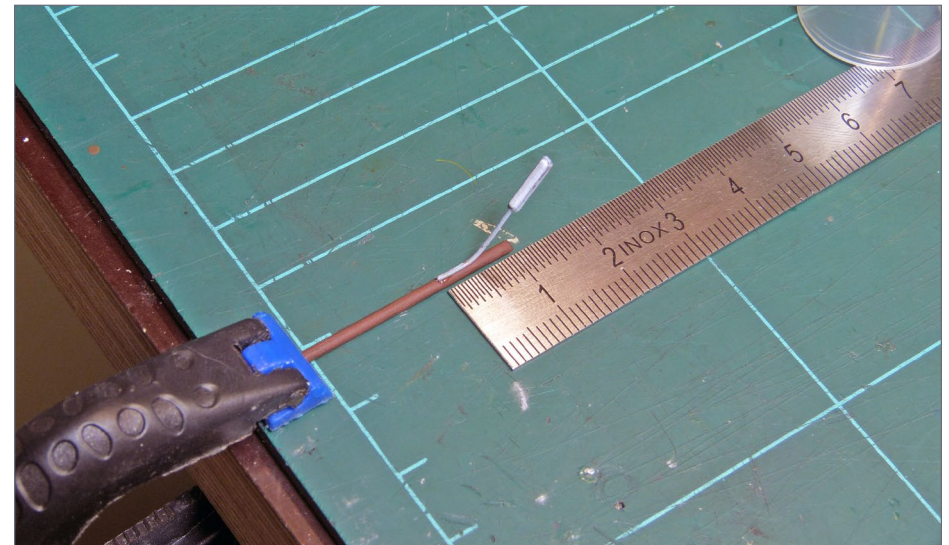
28. I cut a 1.5 mm styrene rod to length for the light poles, painted it brown, and attached the light heads to the poles to make the security lights.

STEP 7: Final Additions

After all structures were in place, I added a little green around the corners using Woodland fine turf and Wild Grass from Noch. I also added some weathering powders on the ground to create some color variations. Wood pallets and barrels from Preiser complete the scene. ☑

Click here for reader comments
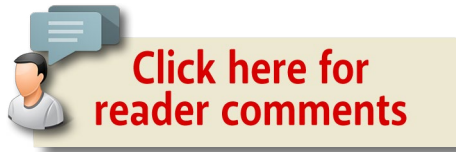
29. I finished the scene by adding some commercial items. Green spots made of ground turf and grass fibers enhance the overall appearance of this scene.

Bill of Materials

- PVC piping 0.6" diameter

- Brass tubing 0.23"

- Sheet styrene various thickness

- Styrene profiles, H-, T-beam, rod and squared

- Copper wire

- Nickel-silver wire

- Gift wrap, mesh approx. 0.01" wide

- Styrene wall sections Kibri No. 7962

- Woodland scenic turf, fine and coarse

- Noch Grass Faser (Fiber), beige and green

- E-Z Line, fine, black

- Preiser No. 79566 – Ladegut, Bausatz

- Acrylic paint – I use Hobbyline Acryl from C.Kreul

- Pastel chalks – I use Staedler Karat ▪

Mike Holly
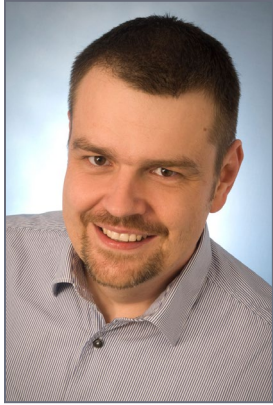
Mike received his first train set at the age of 10 and started two German-themed layouts. After visiting a local U.S. Model railroad convention a couple of years ago Mike was infected by the US model railroad virus.

While planing their house near Wiesbaden Germany, Mike convinced his wife to add a dedicated room in the basement for a model railroad. After moving in, he began the planing process for current US-themed proto-freelanced "Elizabeth Oaks Branch Line" operated by the fictional Cleveland & Eastern Railroad Company set in northeast Ohio and Pennsylvania. Construction of the layout started in 2011, today Mike is planning to extend the layout to add more operation spots.

Mike has a Bachelor of Engineering degree in (Road-Design & Construction). In 2015 he joined the National Model Railroad Association (NMRA) – European Region, and was awarded with the Golden Spike Award in November 2015.

Mike and his wife Nicole have a four-year-old daughter who loves railfanning. ∎

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Building a BC Rail CRS-20
A Unique Canadian Prototype

BY ANDY THOMAS

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THE CRS-20 WAS THE RESULT OF A BC RAIL rebuild program for ageing Montreal Locomotive Works (MLW) RS-18s during the 1990s. The rebuild program took place at BC Rail's Squamish shops and involved the installation of new 2000 horsepower Caterpillar engines. Major alterations were also made to the locomotives' external appearance [1a, 1b, 1c], making the CRS-20 a curious but attractive hybrid that has both Alco and EMD styling cues. It just begs to be modeled, but it is quite a challenge to do so.

For a long time I had been thinking about how to create an N scale version of the distinctive CRS-20. These units were commonly used as yard and road power over the whole system. My Fort Nelson layout just wouldn't feel right without a couple of these units working the yard. I finally decided to use two Atlas

1b. CRS-20 #611 at Prince George, BC in December, 2002. *Peter C. Ely photo*

1a. CRS-20 #611 at Prince George, BC in December, 2002. *Peter C. Ely photo*

1b. CRS-20 #611 at Prince George, BC in December, 2002. *Peter C. Ely photo*
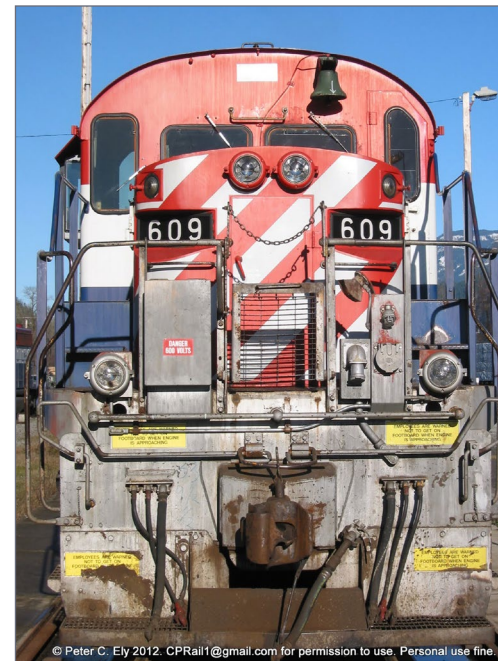
high-hood RS-11s as a starting point, and adding a variety of detail parts, styrene, and odd parts from a Kato SD40-2 shell.

While this article focuses on modelling a very specific Canadian locomotive in N scale, many of the techniques apply to kitbashing other unique diesel locomotives in any scale. Hopefully it will inspire you to model that unusual one-of-a-kind prototype unique to your favourite railroad.

Getting started

There is currently no N scale model that even comes close to representing the CRS-20. The best starting point is the Atlas high-hood RS 11 locomotive. I found two undecorated units at a very good price and decided it was time to finally give this project a try [2]. The Atlas high hood unit is only a basic starting point. Major changes are needed to the long hood, fuel tank, cab, and short hood. In short, a complete rebuild is required, just like the prototype.

2. Two undecorated Atlas RS-11s are the starting point for the project.
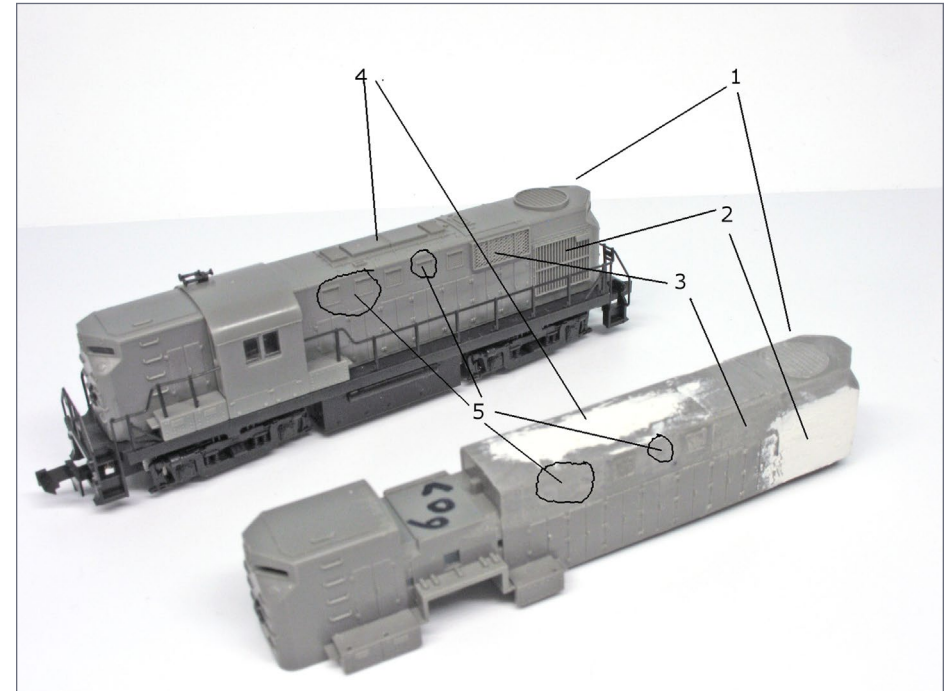
3. Original RS-11 long hood (top) and modified long hood (bottom).
1. Remove the large single circular fan.
2. Remove the rear air intakes and fill and smooth intake panels.
3. Remove the rectangular radiator boxes.
4. Remove the roof hatches and save.
5. Remove selected square air filters.

To further complicate things, there are numerous variations between individual CRS-20s so photo references are important. I chose to model BCR 607 and 611. From online sources, I assembled a number of photographs of these units for the particular period I am modelling.

Basic tools for the project include hobby knives, files, sandpaper of various grades, model putty, and strip and sheet styrene. I

sourced many of the details for the conversion from an old Kato SD40-2 shell and used a variety of commercial detail parts. The bill of materials provides a full list of tools and supplies used on this project.

Long hood modifications – removing details

The first step is to remove several details from the long hood of the Atlas RS-11. A number of major modifications are required to make the long hood more closely resemble that of a CRS-20 [3].

I filed off the large single circular fan at the end of the long hood. This does not have to be removed completely, because it will be covered with a new flat roof panel. The fan should be filed down enough to make the roof section relatively flat.

Then I filed off the rear air intake and sanded the area smooth before filling the intake panels with model putty and sanding them smooth. The rectangular radiator boxes on each side of the shell can be sliced away in stages using a sharp hobby knife. Their location is then sanded flat and smooth.

Remove the roof hatches by gently cutting in from each side with a razor saw and save this molded piece for use later on one unit. The other unit's roof hatch didn't fare so well during the removal process and was eventually rebuilt with styrene. Removing the part also created a small hole in the roof of one of the units. This was plugged with sheet styrene inside the shell and filled in with model putty on the top. The roof hatch detail has to be removed because this component is located further back on the long hood of the CRS-20 than that of the RS-11.

Finally, remove some of the small square air filters on the side of the long hood. Consult the prototype photos, as the

number of filters varied widely. My modeled units had just two air filters per side, so I removed the two filters behind the cab and one more mid-hood.

I also removed all the molded steps on the rear end of the long hood and used a file to create a bevelled transition between the hood sides and end. The RS-11 shell has rounded corners, but it was relatively easy to file these into the more angular bevelled profile of the CRS-20.
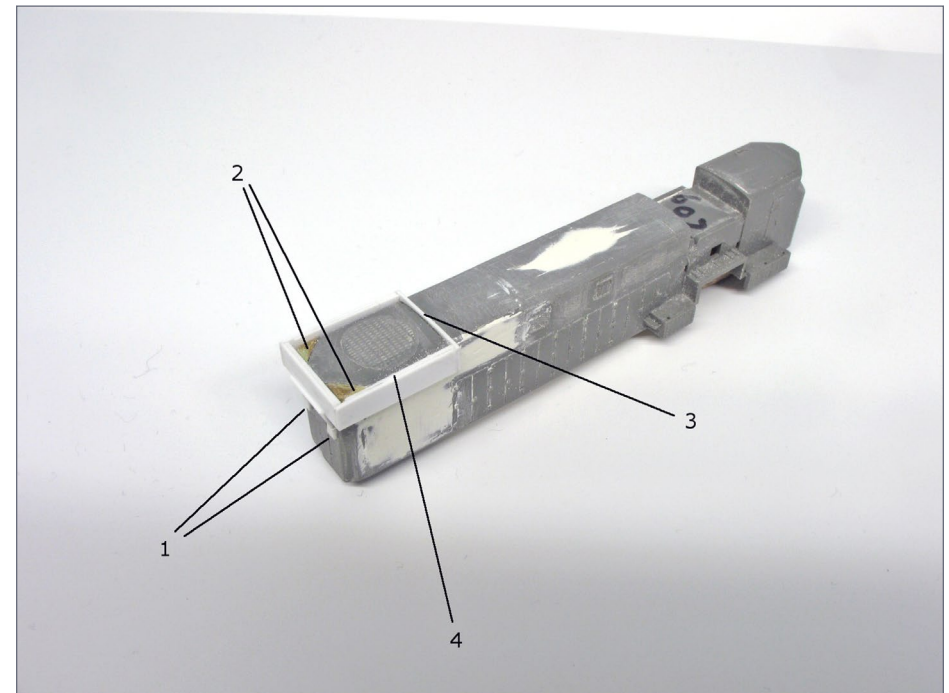
4. Adding details to the long hood.
   1. Add two hatches on the end of the long hood.
   2. Fill notches at the corners of the long hood.
   3. Cut notch in hood, then insert forward end of the rooftop fan enclosure.
   4. Build out sides and rear of enclosure.

Long hood modifications – adding details

With the big details removed from the long hood the next step is to start adding the distinctive CRS-20 details [4].

Form the two hatches on the end of the long hood from small squares cut from 0.25 mm thick styrene strip. The corner notches in the hood are filled with detail parts from Miniatures by Eric (Part NC1 - Corner Filler RS-11). These are attached with CA glue. Alternatively, the notches could be filled with model putty or strip styrene and then sanded smooth.

The CRS-20 has a very distinctive rear radiator enclosure. form the forward edge of the enclosure from a 14 mm length of 0.5 x 4.0 mm styrene strip. A razor saw is used to cut a 3 mm deep notch into the roof of the long hood. The styrene strip is then inserted and glued into this notch.
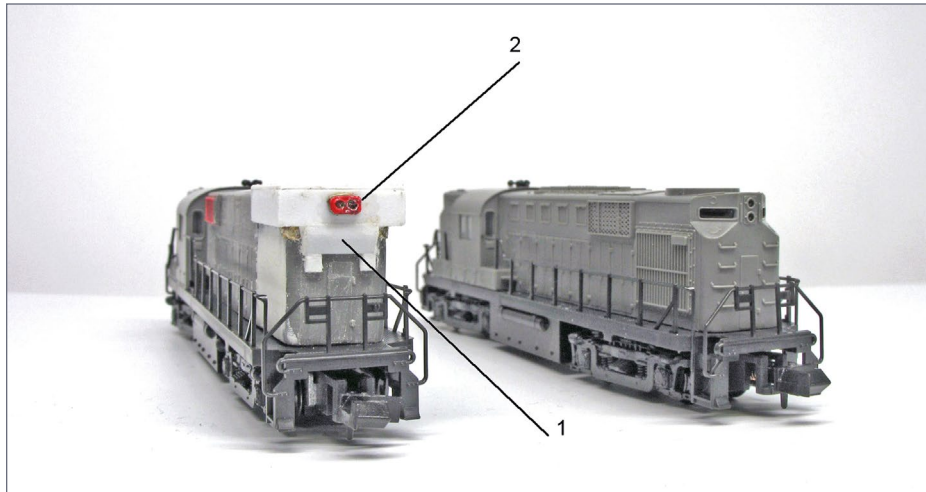
5. Rear end details.
   1. Add angled section from styrene.
   2. Add dual light housing.

The remainder of the enclosure is built using the same 0.5 x 4.0 mm styrene strip. The sides are built out by laminating two strips together and mounting to the side of the hood. The rear end also uses two strips of styrene laminated together. These steps extend the enclosure beyond the sides and end of the long hood to form a distinctive feature of the prototype. Care must be taken throughout these steps to ensure that the enclosure sits level and square on the long hood.

The angled section under the rear end of enclosure is formed from 0.25 mm styrene strip and its sides are filled in using model putty [5]. The rear twin light housing is carefully removed from the Kato SD40-2 shell and secured with styrene cement. Any similar commercial detail part can be used.

The top of the radiator enclosure is formed from 0.5 mm sheet styrene [6]. All edges around the enclosure are sanded flush and smooth once the glue had dried. The CRS-20 had two EMD-style fans on the roof. These were removed with a razor saw from the surplus SD40-2 shell and secured to the top of the radiator with styrene cement. Again, commercial detail parts can be used for this detail.

The dynamic brake intake is also removed from the surplus SD40-2 shell. It was trimmed to 9mm in length. Note that the dynamic brake intake is only on the left side of the long hood on the CRS-20. Again, suitable commercial detail parts could be used.

The roof hatches which were removed earlier are re-attached farther back on the top of the long hood. I lost some of the detail in the process of cutting these off, but additional styrene is used later to add this and more detail to the roof.

Finally, the battery boxes behind the cab are carefully removed using a razor saw and sharp hobby knife. These are removed from both the left and right sides of the shell.

Long hood modifications – rear air intake panels

The most challenging part of the rear hood rebuild is building the air intake panels on the sides of the rear radiator enclosure. I previously removed the large side air intakes from the RS-11 shell and filled and sanded their former locations to create a smooth surface.

There are a number of etched mesh products available to simulate the fine mesh of the ir intakes, but I happened to stumble across some inexpensive self-adhesive nylon repair patches in
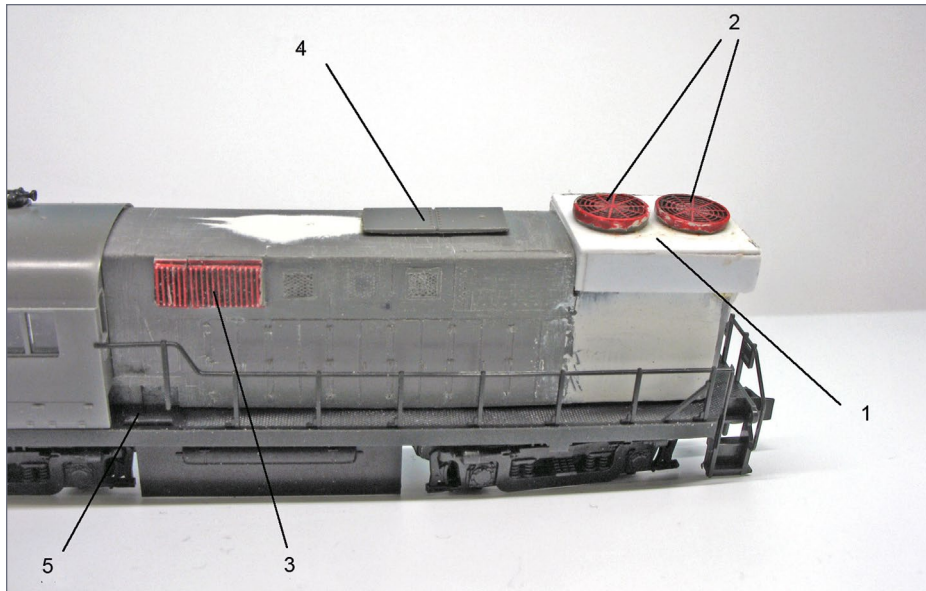
6. Adding details to the long hood.
   1. Add radiator enclosure top.
   2. Add twin EMD-style fans.
   3. Add dynamic brake intake.
   4. Relocate RS-11 roof hatch detail part further back.
   5. Remove battery boxes from behind cab.
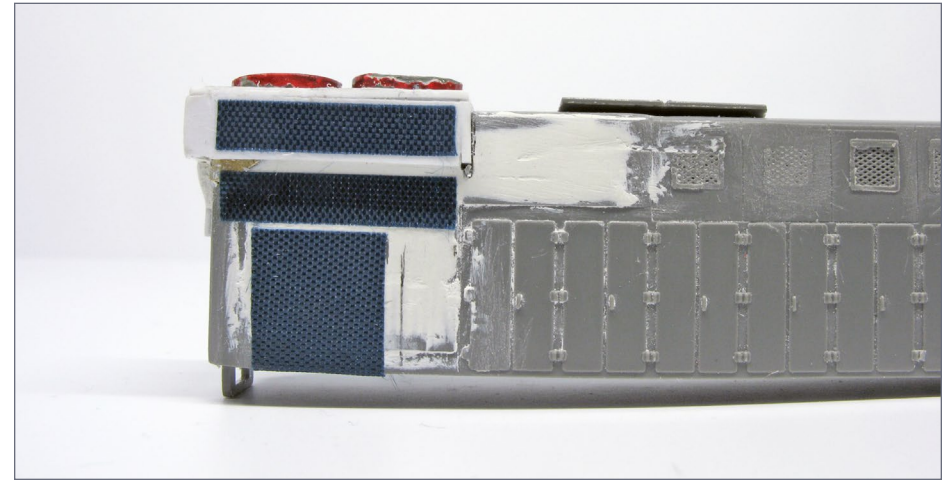
7. Add air intake panels using peel and stick nylon repair patches.

the sewing section of a local Michael's store. The nylon had an extremely fine square mesh weave that provided just enough texture to simulate N scale air intake panels. I figured it was worth a try and it ended up working perfectly.

The patch material is extremely thin and cutting them requires a new, sharp hobby knife blade. Make several passes over the mesh until the blade cuts through both the mesh and the backing. Even the sharpest knife had a bit of a tendency to grab the nylon and pull it away from the backing. Fine sharp scissors work a little better but it is harder to get precise straight edges.

For the air intake panels I cut three single pieces of mesh [7]. After carefully removing the backing paper it's simply a matter of placing and pressing the mesh panels into place.

I then use very fine strip styrene (0.25 mm x 0.5 mm) to divide and frame the individual air intake panels according to diagrams and

photographs [8]. This was tedious and was probably the hardest part of the entire project, but when complete, the nylon mesh overlaid with fine strip styrene looks very convincing.

Long hood modifications – adding roof hatch detail

On one unit the roof hatch detail remounted on the long hood is built out with additional styrene detail. On the other unit, the hatch detail did not survive being cut from the roof, so the entire assembly was rebuilt from styrene [9].

The scratch built roof hatches are comprised of a long section 15 mm x 5 mm with two square panels (4 mm x 6 mm) at each end. Another 5 mm x 5 mm panel was mounted on top of the long section at its mid-point. These details are formed based on prototype photos and drawings.
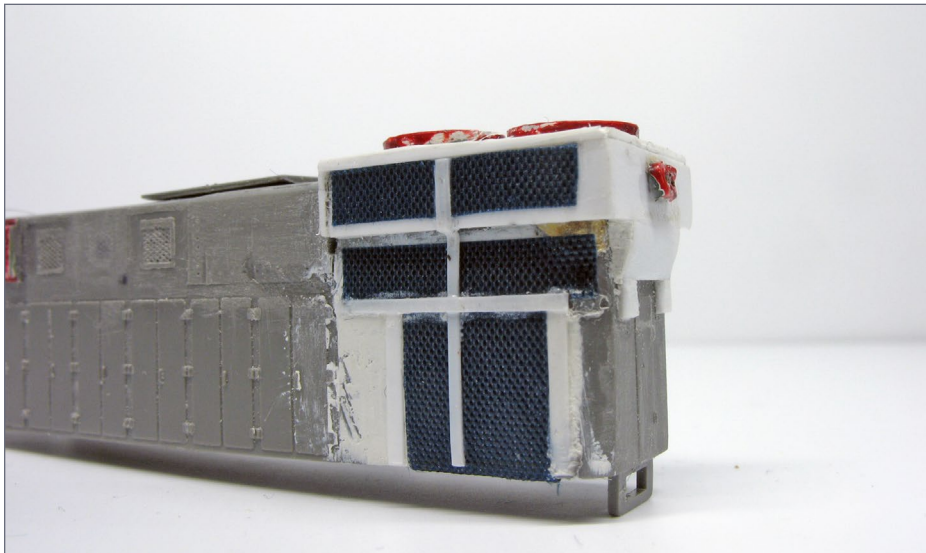
8. Frame the air intake panels with thin strip styrene.

9. Form roof hatch detail from removed RS-11 details and strip styrene. Top unit has roof hatch detail built entirely from styrene. Bottom uses a combination of salvaged RS-11 hatch detail and styrene.

Short hood modifications – chopping the nose

Remove the nose from the body shell. The cut line is immediately along the forward cab locating groove on the shell sides [10]. Then, carefully remove the battery boxes from the nose using a razor saw. Cutting from the underside of the nose produces the closest, cleanest result [11].

Modify the new front end of body shell to make room for the new cab face. The protruding front end of the shell needs to be cut back about 2mm to make room for the new cab face and windows. Using a razor saw, carefully cut across the top of the forward end of the long hood, down to about 4mm. Then cut in
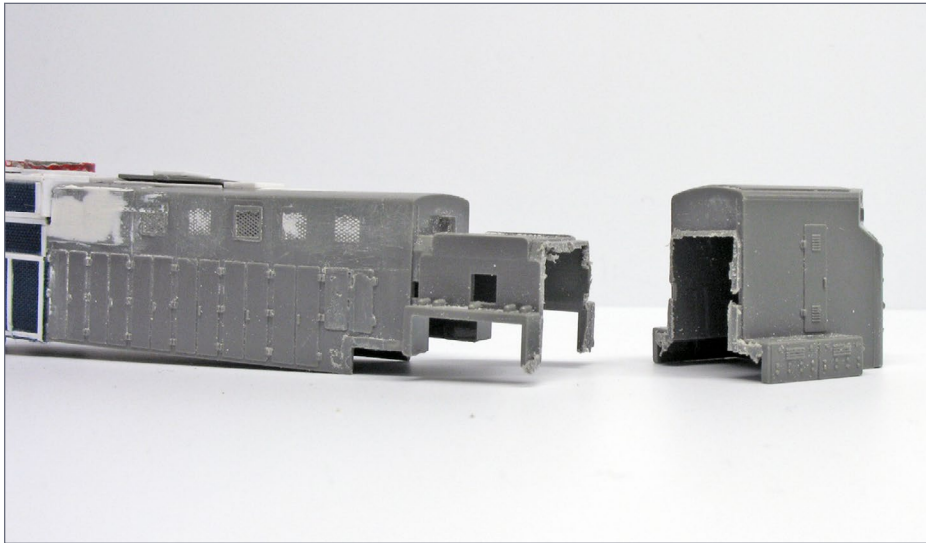
10. Remove the nose section just forward of the cab area.
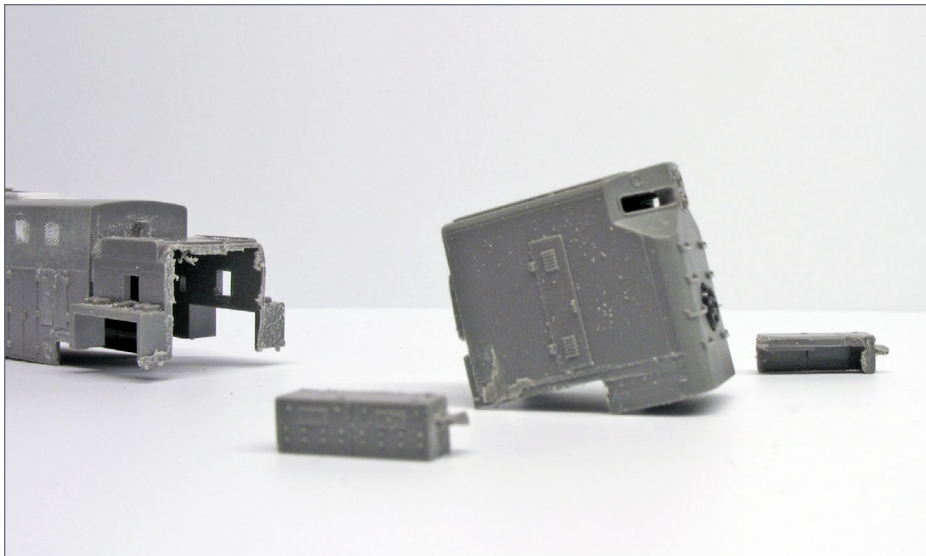
11. Remove the battery boxes from nose section and save for later use.

from the front. This results in a notch in the front of the shell [12]. Then place the cab section over the shell. It should fit easily [13].

Using a razor saw, very carefully cut in half horizontally the nose removed from the shell. Brace the inside of the nose with a firm object to stiffen it while cutting. Start by cutting along
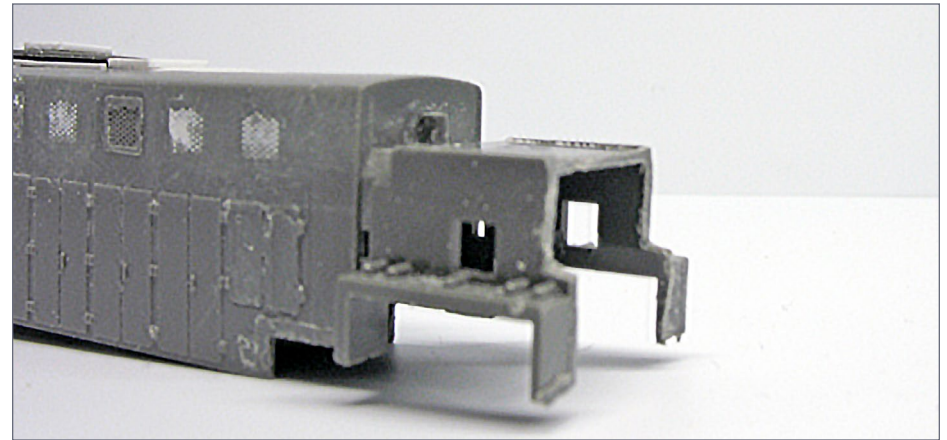
12. Cut notch in front of body shell to make room for cab face.
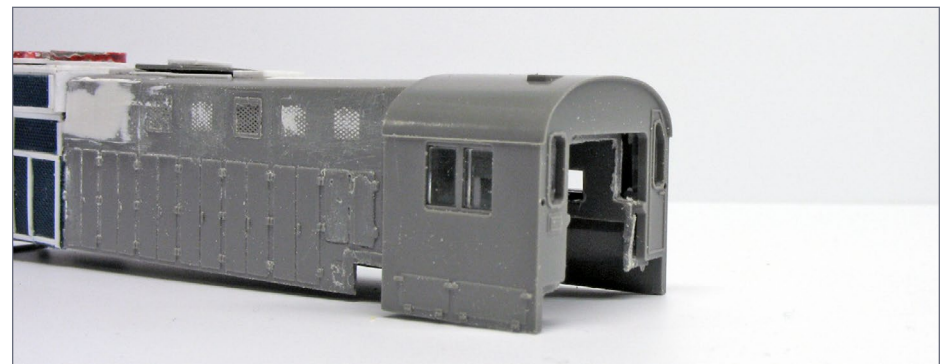
13. Cab face should fit over body shell as shown.

the front of the nose below the second set of handrails from the top. Then turn the nose on its side and continue the cut, checking frequently that it is dead straight. Then, turn the nose on its other side and continue the process [14].

After the cuts are made, gently drag the nose over a thick flat file to even out any irregularities and to make sure it sits flat and level. When placed up against the cab, the rounded edges of the chopped nose should line up with the bottom of the narrow front windows on the cab [15].

I used a couple of spare Kato SD40-2 shells as the source for the front cab window frames on my CRS-20s. I carefully cut out the front window frame sections from the SD40-2 cabs and filed and sanded them until they fit into the opening in the RS-11 cab front [16]. Proceed slowly with this step. The goal is to get a perfect fit with minimal seam lines. Cut out the front window glazing section from the SD40-2 cab. I used an alternate method for glazing these windows however.

14. Carefully cut nose section in half.
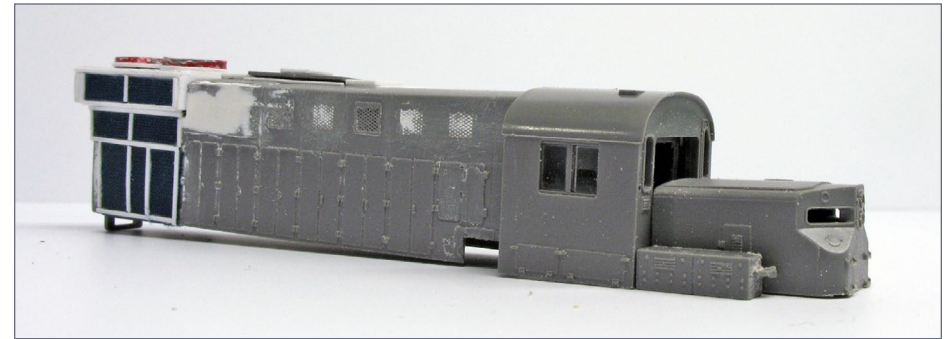
15. Nose should fit up against cab face as shown.
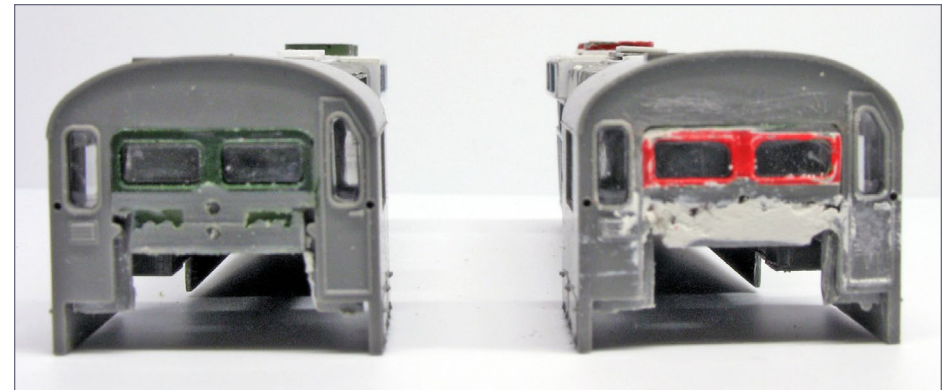
16. Kato SD40-2 cab window frame sections are mounted into the cab face.

I use styrene and model putty to build out, fill in, and smooth the below-cab face plate. Although this will be barely visible it is worth ensuring that any holes are filled, and that it is smooth in appearance.

At this point I placed the modified components on the frame assembly. The distinctive shape and face of the CRS-20 was really starting to become evident at this stage [17].

Frame modification – nose

Some cutting and filing of the metal frame is needed to make room for the chopped nose and new cab front. To avoid contaminating the mechanism with metal filings, remove all the motor, gear and truck components before screwing the two frame halves back together.

Test-fitting the new cab and nose section quickly reveals which parts of the frame need to be reshaped to make room. A fine hacksaw or razor saw can be used to make the cuts, but it is a long and tedious process. Using a large flat metal file is another option. Clamping the frame in a vise is recommended and will speed progress somewhat.

To make room for the cab face, make a vertical cut down behind the two protruding tabs which hold the light board. This cut continues down until it is level with the height of the front of the nose. Cut in from the front, then remove a block of metal to allow the cab and back end of the nose to fit in place [18].

17. Starting to look like CRS-20s!

18. Original RS-11 frame marked for cutting (rear) and after cutting down the nose profile (front).

With those cuts complete, make a diagonal sloping cut down the nose to make room for the front end of the nose to sit in the correct position.

A test fit of the long hood shell and cab showed a need to remove some of the cab face plate to get the shell to sit all the way down on the frame. I removed about 1 mm from the bottom portion of the front window face by carefully carving it away with a sharp hobby knife.

Some small modifications are also needed to the nose section for it to sit correctly on the frame. The metal frame has two cast rectangles in front of the cab where the battery boxes are located. remove a section of the nose to allow it to sit over these rectangles. A couple of cuts with a razor saw take care of it [19].

The second modification is to remove a portion of the back face of the nose. A couple of vertical cuts up the inside of the nose walls and in from the back remove this plastic shelf, allowing the nose to sit correctly on the modified frame. To verify the final fit, I assembled all the key sub-components to the frame and included the handrails [20].
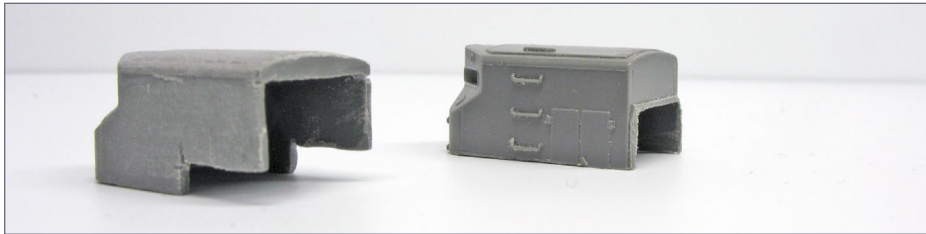
19. Nose section modifications required to fit over new frame. Before (rear), and after (front).

20. Nose section should fit firmly over modified frame.

21. Battery boxes should remount over frame as shown.

Test-fit the battery boxes (removed earlier) over the cast box shapes on the metal frame forward of the cab. They should fit firmly in place [21]. Do not permanently secure anything yet.

Frame modification – fuel tank

The fuel tank area also needs to be modified, because the CRS-20 fuel tank is narrower than the RS-11 tank. Use a large flat metal file to remove the excess material from each side of the fuel tank area on the frame. This involves completely removing one square shaped metal protrusion from each side and partially filing down another one [22].

In total, just less than 1/8 inch of metal needed to be removed from each side of the fuel tank. This is messy and tedious but can proceed relatively quickly if you are able to securely clamp the frame in a vise and apply firm pressure with the file.

Thoroughly clean the frames to remove all traces of metal filings. Remove the molded coupler housings from the trucks, as body-mounted couplers will be installed. Carefully reassmble the motor, gear towers and trucks and place them between the two frame halves, which are then screwed back together. Take this opportunity to oil the gears, clean the wheels and give the mechanisms a good run.

Low profile wheels

The performance of my original Atlas RS-11s left something to be desired. The wide wheel treads routinely resulted in stalls or derailments on turnouts. I replaced the stock wheels with low profile sets from NorthWest Short Line. I used NWSL 7441-4 wheels that press on to the existing axles, checking each with the NMRA gauge. The new wheels negotiate the turnouts flawlessly.

They even seem to have improved the overall running qualities of the locomotive. No longer do the units stall on my as-yet unpowered frogs. I still intend to power the turnout frogs but the improvement after just replacing the wheels was a nice surprise.

Additional front end details

With the frame reassembled, it is time to get back to the nose. The first step is to remove all the molded RS-11 details (steps, hatches etc.) from the front, top and sides of the nose.

Minatures by Eric RS-11 corner fillers (part # NC1) fill in the notches and give the upper nose corners the correct profile. They were secured using CA adhesive. Styrene or model putty could also be used to complete this step. After filing these brass parts to blend in with the rest of the nose, use a file to create horizontal notches for the number boards [23].

Form the front access door from a length of 0.3 mm x 3.2 mm wide strip styrene glued over the existing nose after removing all molded steps. The horizontally mounted double headlight is Miniatures by Eric part #NB1. Square hatches are located just behind the number boards on both sides of the nose, and are formed from thin styrene strip.

22. Reduce width of frame fuel tank area by filing it down. Original width illustrated on right.

23. Nose modifications included removing molded details, filling corner notches, adding headlight housing, access door and site hatches.

Remove the molded horn mount on the right side of the cab roof, and fill the hole with model putty and sand smooth.

Fill the large gaping holes at the front and rear of the frame with Kaslo Shops Part # NP-03, BC Rail / PGE RS-18 pilot. You can order these from Central Hobbies in Vancouver BC, Canada: central-hobbies.com/products/kasloshops.html#NPart.

Two resin pilots are in each pack; one with a flat front striker plate and one with a spoke striker plate. Refer to prototype photos to determine which is right for your particular road number. Both 607 and 611 appeared to have a flat fronted pilot in the early 2000s so I used the flat-front part on the front end and put the spoke ones on the rear. This is not strictly prototypical, but the rear ones won't be too visible as 607 and 611 will generally be run as a pair coupled back to back.

Secure the Kaslo pilots directly to the front of the Atlas frame using CA adhesive [24a, 24b]. Once the glue sets, carefully enlarge the coupler hole in the pilots to enable a coupler draft gear to be fit in from the front. Micro-Trains has a conversion kit for the RS-11 or

you can use spare Micro-Trains coupler assemblies and just glue them in. Make sure they are the correct height. File the hole just large enough to ensure a tight coupler fit. CA should be sufficient to hold it in place.

Form the winterized side window from the side window from a spare SD40-2 glazing unit mounted on the outside of the cab. To simulate the winterized side window, simply file the side glazing unit to the same dimensions as the CRS-20 side window and gently file the top edge of the winterized window to a downward sloping angle to accommodate the sunshades. I decided not to glue the side window in until after all paint and decaling was complete. I just lightly tacked it into place for the photos.

The CRS-20 has a bell mounted in an offset position on the cab front. Use Miniatures by Eric Part #NB11 (Bell F Unit CN). It is a close match and I had the parts available. Use a pin vise and a #70 drill to make the hole for the bell casting and secure it with CA adhesive [24a, 24b].

Install etched sunshades from Gold Medal Models. The large sunshades in Part #160-7 Diesel Locomotive Detailing Set are a perfect fit. I drilled out #75 holes for the dual mounting tabs using a pin vise. Install the sunshades with CA adhesive and carefully bend the shade down to a 450 angle. Note that the sunshades on the right side sit over the winterized side window added previously. Filing the top edge of this window enables the sunshade to tilt downwards slightly as on the prototype [24a, 24b].

Finally, install a five-chime horn on the rear hood. I used Miniatures by Eric part # NH8 for this, but you can use any equivalent detail part. Prototype photos show the horn is located immediately forward of the first roof fan. It is mounted
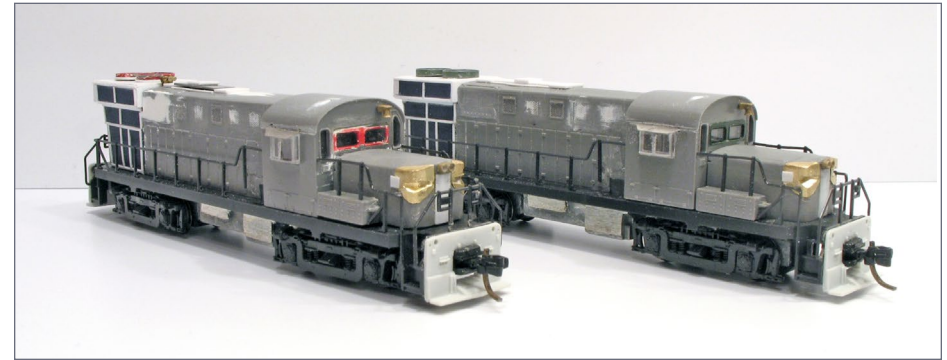
24a-24b. Additional front end details included pilots, couplers, winterization window, sunshades and bell.

slightly to the right of the centerline when looking forward along the roof.

Painting the body shell

There are still some underframe details to be added, but at this point the body shell components of the CRS-20s are ready to paint.

Apply a base coat of flat white and let it dry thoroughly. After careful masking, the nose and upper areas of the body shell using PollyScale Signal Red. It took eight coats applied over several days

to fully cover the white base coat. After masking, PollyScale ATSF Blue acrylic was applied on the lower body shell. Paint the railing assembly, underframe and trucks with Testors silver. The handrails are painted ATSF Blue [25, 26].

Fuel tank details

This part of the project focuses on the fuel tanks. 607 and 611 are part of a group of CRS-20s that have simple small rectangular fuel tanks. The tanks have air reservoirs on both sides and a waste oil retention tank on the right side.

The stock Atlas RS-11 fuel tanks are basically the correct shape but far too wide and deep for the CRS-20. Rather than scratchbuilding new fuel tanks, cut down the RS-11 tanks to reduce their dimensions and finish them with styrene and wire details.

Cut the Atlas RS-11 tank molding in half lengthwise and remove and discard about a 1/8-inch wide strip from the middle [26]. Also remove and discard the front and back faces of the tank. This

25. Fresh out of the paint shop.

produces two fuel tank halves. The front and rear mounting clips are removed from these halves also.

The forward section of the fuel tank floor is removed in order to allow the fuel tank to sit higher up on the frame. With this section of floor gone, the fuel tank halves fit around a cast metal protrusion on the chassis. File down the top side edges of the fuel tanks to allow the tank to sit higher up on the frame.

File down the inner walls and floor of the fuel tank halves to make them as thin as possible, so the fit over the metal frame will be as close as possible [27]. Attach the fuel tank halves to the frame using small dabs of contact cement. This rather unsophisticated approach allows the fuel tank overlays to be removed if needed. If the two halves of the metal chassis frame need to be separated during extensive repairs or decoder work, the fuel tank halves can probably remain attached throughout the procedure. Essentially, the fuel tank halves are laminated over the cast-metal frame [28].

26. Original RS-11 fuel tanks are too wide and require modification.

With the basic fuel tank mounted, turn to the fuel tank details. Form the cylindrical air reservoirs from Evergreen 2.4 mm diameter styrene tube (Part #223) through which a length of fine wire is passed. Bend thewire at each end to represent the air lines coming out of the cylinders. Wrap very thin strip styrene (Evergreen 0.25mm x 0.5mm) around the cylinders near their ends to represent the straps that mount them to the frame. Mount the cylinder assemblies on both sides of the fuel tank using styrene cement.

The waste oil retention tank is an angular structure on the right side of the fuel tank only. File Evergreen styrene 2.5mm quarter round (Part #100) along its length to create a bevelled edge. Glue this to the right side of the fuel tank directly below the air reservoir cylinder [29].

Paint the new fuel tank details with a couple of coats of PollyScale flat aluminium.

Applying decals

Microscale offers an N scale decal set for BC Rail diesels in the red, white and blue scheme (Part# 60-726. Before applying the decals,

27. Original (left) and modified (right) fuel tank sections.
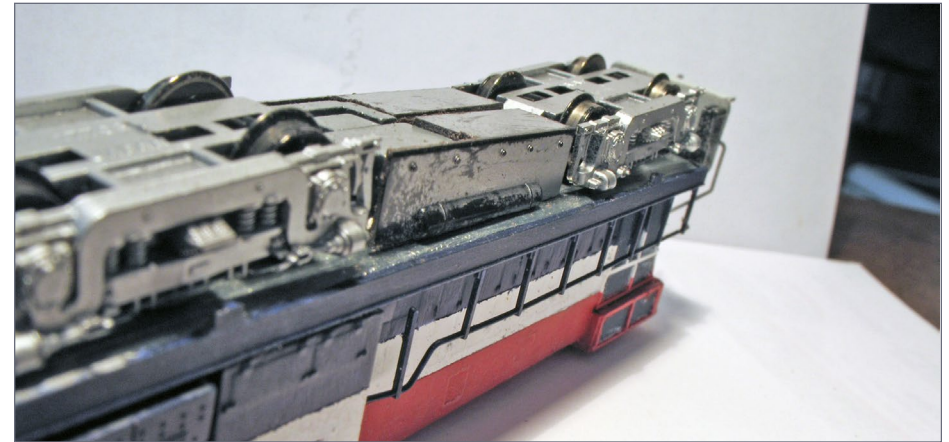
28. Fuel tank halves glued to frame.

brush a light coat of Future Floor Wax over the body shell. This provides a nice smooth glossy surface.

Use Micro-Set and Micro-Sol to help fix and then soften the decals. Some of the smaller decals such as front and rear number boards are a real challenge to apply.

After the decals are dry, brush over the body shell with another coat of Future Floor Wax to seal all the decals and hide any decal film edges. Then apply a couple of coats of Dullcote from a spray can to create the final matte finish.

At this point, paint the rear radiator intakes (formed from self-adhesive nylon patching material) a dirty black with a fine brush. The dynamic brake air intake also gets this treatment [30a, 30b].

Weathering

Once all decals are complete, apply some light weathering. I concentrated the weathering on the silver underframe, and the roof.

Prototype CRS-20s were factory painted with silver underframes, trucks, fuel tanks and pilots. Most photographs show the trucks and underframe weathered to a dark grey while the fuel tank is generally less weathered. Apply an initial wash of grimy black to these areas using thinned acrylic paints. Then, mix black weathering powders and water and apply them with a brush, wiping some off with a fingertip before it dries completely.

Apply additional weathering on the roofs, side air intakes, and air filters, but keep it fairly restrained. Apply another coat of Dullcote to seal the weathering.

At this point the CRS-20s really comes to life and perfectly captures the distinctive look of the prototype [31a, 31b].

Window glazing and final details

Hold off doing the window glazing until all painting and weathering is complete. Then glue the winterized window to the right sides of the cabs.

29. Cylindrical air reservoir mounted on left and right s ide of underframe. Angular waste oil retention tank is mounted on right side only (see 30a, 30b).

Glaze the other windows by filling the openings from the inside with Future Floor Wax. This liquid acrylic product fills the openings via surface tension and dries crystal clear within an hour. You can use the glazing sections from the Atlas RS-11 and a Kato SD40-2 for the cab windows if you prefer.

Finally, replace the front and rear CRS-20 handrails with more appropriate EMD-style ones. For a while my completed CRS-20s retained the RS-11 handrail units from the original Atlas shells, but

30a, 30b. 611 and 607 in Fort Nelson yard after application of major decals.

the handrail profile threw off the whole appearance of the front end and they had to be replaced.

Add spare handrail parts sourced from a Kato SD40-2 shell and the resulting improvement in appearance is immediate [32]. ☑

31a, 31b. 611 and 607 on the approach to Fort Nelson yard after weathering.

32. The final detail. Original RS-11 front and rear handrails (right) were replaced with EMD-style ones (center) as on SD40-2 #766 (left).

Playback problems? Click here ...

Conclusion

The BC Rail CRS-20 project is long and challenging, but the end result is worth it. The project started in the summer of 2012 and continued on and off until its completion in the spring of 2013. One of the learning points with a project as challenging as this is that sometimes you just need to put the job aside for a while and work on other things. Usually when I did this, solutions to problems that were delaying my progress would eventually reveal themselves.

My model building and kitbashing skills certainly improved as a result of the CRS-20 project, and I had to really think creatively at many points of the build process.

607 and 611 currently operate under DC power. In the near future they will receive decoders and possibly some custom lighting. Then they will go into service switching the Fort Nelson yard on my N Scale layout.

BC Rail was certainly not the only railroad to produce home-grown rebuilds of locomotives. If your favorite railroad operated a chop-nosed or otherwise-rebuilt locomotive, consider using some of these techniques to model it. I can guarantee that the result will be a great conversation point at your next operating session or meet. ▪

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Andy Thomas

Andy Thomas is an avid prototype modeller who has a "healthy obsession" with BC Rail. Andy's exposure to the hobby started early while growing up in New Zealand and the United Kingdom during the 1980s. Early layouts were father-son projects in British N and OO scale, but a visit to Canada in 1990 sowed the seeds for a future interest in North American railroading.

Re-entering the hobby in 2008, he decided to model the remote and often-overlooked north end of the BC Rail system and chose N scale for its ability to model prototype scenes in a modest space. He still makes regular visits to railfan the north end sub-divisions (now operated by Canadian National) and enjoys travelling to train shows, meets and operating sessions where similarly BC Rail-obsessed folk congregate.

Andy is a confirmed N scaler and notes that the quality and running characteristics of today's equipment is amazing compared to what was available in the 1980s. Modelling BC Rail in N scale is a challenge and involves significant kitbashing and good old-fashioned model building, but these are Andy's favorite parts of the hobby. ▪

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Bill of Materials

Atlas Model Railroad Company
atlasrr.com
RS-11 – Undecorated

Evergreen Scale Models
evergreenscalemodels.com
#100 - 0.25 x 0.5mm styrene strip
#127 - 0.5 x 4.0mm styrene strip
#100 - styrene quarter round 2.5mm
#223 - styrene tube 2.4mm diameter
#9103 – plain styrene sheet 0.5mm thick

Gold Medal Models
goldmm.com
 #160-7 - Diesel Locomotive Detailing Set

Kaslo Shops
Available from Central Hobbies in Vancouver, BC
central-hobbies.com/products/kasloshops.html#NPart
#NP-03 - BC Rail / PGE RS-18 Pilot

Kato
katousa.com
#921460 - SD40-2 body shell undecorated
#920140 – SD40-2 glass set

Michaels
michaels.com
Loops & Thread brand nylon self-adhesive repair patches

Microscale
microscale.com
#60-726 - BC Rail Diesels (1984+) Red White and Blue Scheme

Miniatures by Eric
miniaturesbyeric.com
#NB-1 - Double Headlight
#NB-11 - Bell F Unit CN
#NC1 - Corner Filler RS-11
#NH8 - Horn

NorthWest Short Line
nwsl.com
Low Profile Wheels – NWSL 7441-4

PollyScale paints*
*Now discontinued. Equivalents are available
Signal Red
ATSF Blue
Flat Aluminum

Testors spray paints
Flat White
Silver ▪

Edendale Creek
Diorama Part 2

Doing the scenery and details on this diorama ...

by Jack Burgess

Last month I talked about building the trestle over Edendale Creek, the track, and the equipment needed for my Proto48 (O scale) diorama. This month I'll discuss building the scenery and details.

Basic topography

It is very easy to model layout scenery these days, given the vast number of scenery products available. The products range from sheet foam and static grass, to ready-to-use trees and rock molds. They are easy to use, and the results gratifying.

But I felt that the scenery on my diorama should duplicate the actual topography and vegetation around Edendale Creek, and not just be generic. I also wanted to model the scenery on my diorama to the same degree that we build structures and freight cars. That meant not only replicating the basic lay of the land, but also accurately duplicating the grass, bushes, trees, and details. For the most part, the key is simply paying a little more attention to those elements when we are in the area we want to model.

All of my experience building scenery on my HO layout has been limited to using screen wire covered with plaster-soaked paper towels to build up the basic landforms. I decided to use foam for this portable diorama since it would be lighter. However, even with 40 years of experience building scenery, using foam was a new challenge for me.

Using screen wire and plaster-soaked paper towels made it easy (in my experience) to create the contours you want since you are building up the topography. But, with foam, you glue foam blocks higher than you need and then remove the excess, much like the old joke about building a model locomotive from a block of solid brass by just removing everything that doesn't look like a locomotive. Needless to say, I ended up cutting out foam and then adding pieces back when it didn't duplicate the contours of the place I was modeling.

Once I am satisfied with the general contours, I cover the foam with a coat of Sculptamold. When that is dry, I paint the foam with a light tan latex paint and add a layer of light-colored dirt, bonding it in place with diluted white glue.
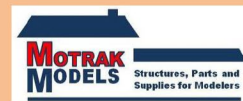
Grass

I started using static grass on my HO layout several decades ago. Back then, the colors were limited to three shades of bright green, a couple shades of bright brown, and a bright yellow which I use to model summer grass in California. To match actual California summer grass, I would airbrush the static grass after it was in place. The static grass was applied by shaking a plastic bottle filled with the static grass with some holes in the cap while squeezing it at the same time. Hopefully that coordinated motion shot the grass down onto the wet glue where you wanted it.

Today's electro-static grass applicators are so much easier. A good friend lent me his homemade grass applicator, and adding

2. Closer to the creek, things are a little greener. On the other side of the bridge is a portion of the concrete box culvert for the highway over Edendale Creek.

grass to my diorama was quick and effortless. To duplicate the grass typical of April in California on my O scale diorama, I use a mixture of four shades of Siflor grass in both 4mm and 6mm sizes: Spring, Summer, Late Summer, and Autumn. All four colors are mixed together in somewhat equal proportions, although I used more Autumn in the drier areas, and more Spring in the wetter areas. Once the grass applications are complete, I airbrush the drier areas with a little Floquil Earth [1 and 2].

Edendale Creek

One problem modeling creeks and rivers on layouts is that they need to come from somewhere and end up somewhere else,

1. The hillside on this side of the tracks is a little drier, and thus has a little more Late Summer and Autumn Siflor grass.

which generally means that at least one of the ends will eventually butt up against the fascia. On my HO layout, I've terminated creeks and rivers two ways. In some places, the stream just "flows" right up to the fascia like a dam. In other locations, I cut the fascia down to the bottom of the creek bed and poured the "water" up to a temporary dam. The latter seems to be what many modelers choose, but it seems strange to be able to look "under the water." On the other hand, having the fascia block the end of a stream also seems very abrupt.

When I began my diorama, I planned to have the main view of it from the highway which paralleled the railroad to the north. That seemed logical since it was the "railfan" view of the railroad. But that would again raise the question as to how to end the creek when it reached the fascia on the viewer's side of the diorama.

As I thought about this idea, I eventually realized that, if I included a bit of the concrete box culvert where the creek crossed under the highway, I could let Edendale Creek simply disappear into the culvert, eliminating the creek vs. fascia problem. I also decided to include just a sliver of the highway itself, reinforcing the fact that the concrete structure is part of the highway. I eventually reversed the main view of the diorama so the highway would be at the rear of the scene, since the highway culvert did such a good job of hiding the end of the creek. The only factor in which side of the diorama is the "front" is in placement of figures.

The next problem is building the original concrete highway bridge over the creek, since it was demolished when the current highway bridge was built in 1989. However, while doing

3. This is the original highway bridge a mile or so east of Edendale Creek. This photo and Google Maps and Street Views made it easy to model the same style bridge for the diorama.
Photo by Ramon Pelles

some research using Google Maps one day (also called "goofing around"), I zoomed-in on the next creek east of Edendale Creek, and noticed that a new highway bridge had been built there too. That bridge is located right where the railroad bridge had once been. The original highway bridge is still in place. Google Street Views of the old highway bridge gave me enough information to build an accurate model of it. A friend and YVRR fan living in Europe also provided me with a photo he had taken of this highway bridge [3]. Building the concrete box culvert and integral concrete barrier is done with .040" styrene.

Rocks in the bottom of Edendale Creek were hand-picked from a bag of aquarium gravel for size and color, and glued in place with diluted white glue. Edendale Creek is modeled using Magic Water, and the directions are correct when they state that Magic Water will leak out the smallest pinhole in the bottom of a creek bed. I should have painted a thin layer of Magic Water over the entire creek bed before starting, but was too eager to get it poured. Fortunately, I did have some newspapers under the diorama to catch most of the leakage.

My creek bed doesn't follow a steady gradient, but starts out relatively flat before tumbling down a steeper section, then slowing under the railroad bridge, and then dropping down some rapids again before disappearing under the highway bridge. The flat areas are poured first [4] and allowed to dry. I couldn't get the "water" as deep as I wanted in these flat areas without it flowing down the steeper portions. I solved the problem by making temporary dams at the bottom of the flat areas using clear silicone caulk. This let me pour the flat areas up to the top of the silicone caulk dams. Once the Magic Water in these flat sections set up, I removed the dams and built up the "rapid" areas using Woodland Scenics Water Effects in multiple layers [5].

4. The area between the bridge piers is one of the flat sections while there are rapids above and below it. Uncured Magic Water will saturate the banks but, once it is dry, additional dirt can be glued down to cover the "mud" look.

Highway

Based on an early USGS map available online, I knew the highway following the railroad had been paved by 1945. To duplicate my sliver of it, I started with a piece of 1/16" birch plywood which I glued in place, then sanded it to provide a reasonable cross-slope toward the shoulder. I gouged some potholes in it, then painted it with flat black latex paint and sprinkled on some N scale ballast while the paint was still wet.

One problem in modeling asphalt streets and roads is that we tend to think of them as being black. While they start out that way, asphalt roads eventually fade to various shades of gray. Knowing this, I began by over-spraying my flat-black road with Floquil Weathered Black lightened with some Reefer White to get rid of the solid black color. I left it that way for a while, but was not satisfied with the results. Eventually, I over-sprayed it again with a much lighter color, and then weathered it with some dust-colored Bragdon Enterprises weathering powders, especially

5. Here is that same general area after the banks had been fixed and bushes and trees were in place.

in the potholes. I finished up the bridge and highway by gluing some green foam to represent weeds growing out of the cracks between the paving and concrete highway barrier.

Although it is obvious to me that this strip of dark gray represented a highway, my wife wondered what it was when she first saw it. I therefore decided to add a highway sign to reinforce the fact that it was supposed to be a road. My first thought was to add a highway route sign, since this road is California State Highway 59, but soon discovered that it was not designated Highway 59 until 1963. So, I went searching for another traffic sign that might be appropriate.

All the traffic signs on my HO layout were made by printing photos of actual traffic signs from caltrafficsigns.com. One sign that seemed appropriate for the fence-less, wide-open spaces around Edendale Creek was an "Open Stock Range" sign I found on this site. Right-clicking on the photo on the website and saving it to my computer, I opened it in Photoshop Elements. I began by using the Skew Tool to make the image square. Then I used the Crop Tool to eliminate the background, leaving just the sign.

The image then needed to be resized to the scale I am modeling. The prototype sign was most likely 24"x24" in size. So I divided 24 by my scale factor of 48 (N=160, HO=87, and O=48) to get the actual size for the sign. My O scale sign thus needed to 24/48 or ½" wide. In Photoshop Elements, I clicked on Image/Resize/Image Size. The Width box showed that my image was 5.5" wide and it needed to be ½" to be an O scale version of the sign.

But before I input that value, I unchecked the box for "Resample image". The size of an image and its resolution are all related, so if you reduce the size of an image, you can increase its resolution by resampling it at the same time. After unchecking the

Resample box, I typed 0.5 in the box for the width and clicked on OK. It seemed that the size of image didn't change. But in fact, the image size got smaller and the resolution increased from 72 dpi to 800 dpi! I printed the image on photographic paper, cut it out, and I had a traffic sign.

Since the actual sign had bullet holes in it, I drilled those out, glued the sign to a painted 4x4 post, and added NBW castings on the back of the post before installing it [6]. I also added some rust around the bullet holes.

Trees

The trees along Edendale Creek have light brown-to-white bark and light-colored leaves [7]. One distinct feature of these trees is the abundance of thin, dead branches poking out from areas of fairly dense leaves. The main trunk of the trees looks a lot like

sagebrush in texture and color. I had harvested some dead sagebrush branches on a camping trip to the east side of the Sierra Nevadas a few months earlier.

Although he was modeling large maple trees in HO scale and I am modeling much smaller tree species in O scale, I used the general ideas outlined by Thomas Garbelotti in his article in the August 2013 issue of *MRH* mrhpub.com/2013-08-aug/land/#59. After picking a good-looking sagebrush armature and trimming it, I began by cutting off some small branches from an extra sage branch and gluing them onto my trunk using quick-drying white glue. I then airbrushed some Scenic Express SuperTrees branches dark gray, and when dry, began gluing them onto my tree framework [8].

6. The "Open Stock Range" sign in place alongside the highway on the left.

It really helps to have photos available of the trees I want to replicate as I glue the branches in place. There are portions of the trees where the leaves are very dense, and you can't see through them. Other sections of the tree consist primarily of dead branches which tend to point upward and outward. I glued Super Tree branch material only on the sections of the tree where I wouldn't be adding foliage. This might seem tedious, but The Third Hand, April 2013 *MRH* mrhpub.com/2013-04-apr/land/#/54 held the branch in place while the glue dried.

Once the truck and branches looked right, I added some Silfor Spring Broad Leaf Maple foliage. This foliage material has maple leaves bonded to it, although they seem a little large even for O

7. This current-day view shows several willow trees along Edendale Creek. Notice the color of the leaves, dead branches, and other details of the trees. The concrete rubble and concrete water diverter on the far side of the creek were not there when the railroad was in operation.
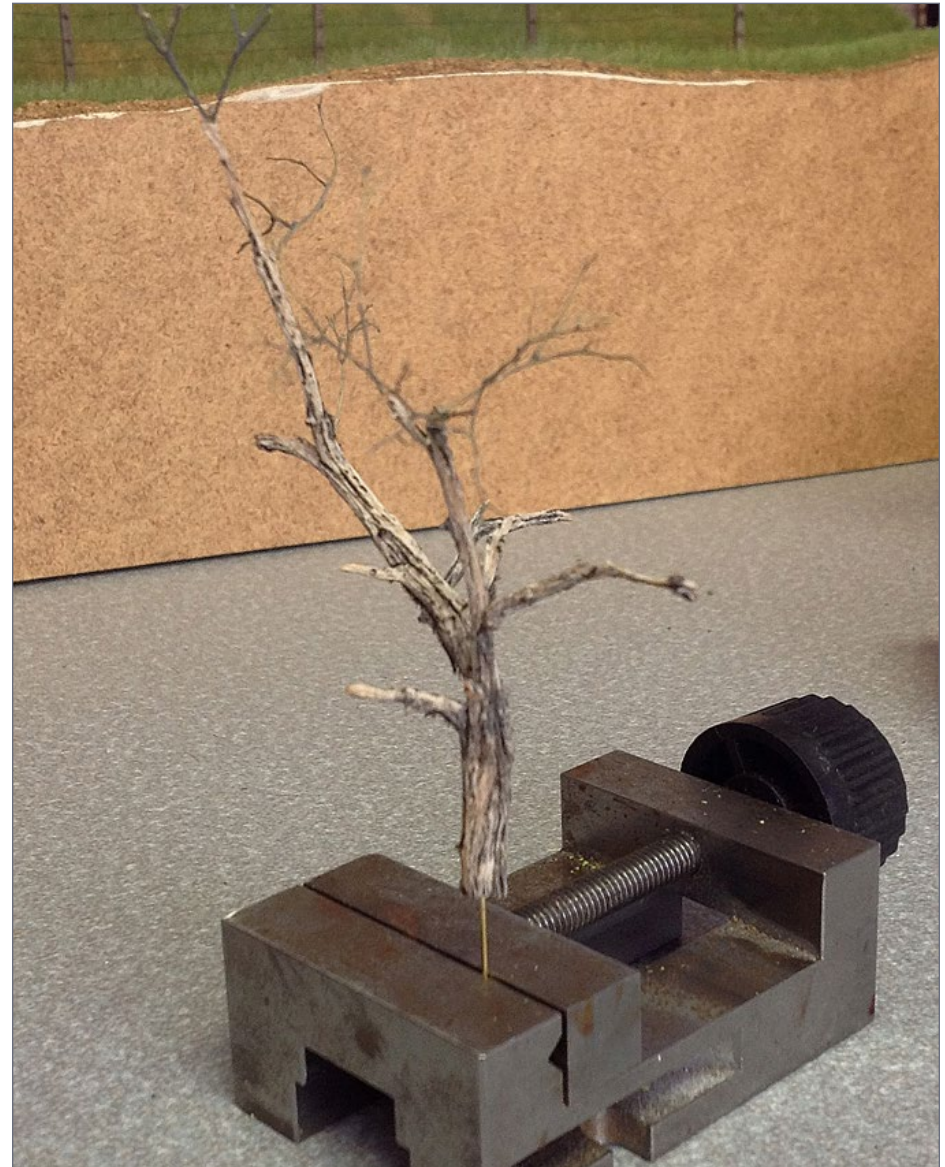
8. A willow tree under construction. Several additional main branches have been glued to the trunk and finer branches are being added using airbrushed Super Tree branches. This vise is one discussed in the tools article in the March 2014 issue of *MRH.*

scale. After pieces of foliage were glued in place, I brushed on some diluted matte medium and sprinkled on some Noch Leaf Flake so the maple leaves weren't so obvious, and making the foliage a little more dense. By duplicating the distinctive features of the prototype trees, the results are very satisfactory [9].

Barbed wire fences

Barbed wire fences and telephone poles are signature elements along the YV as it crossed the San Joaquin Valley east of Merced

9. A finished willow tree. Although I've never used sage branch material to build trees for my HO layout, I think it does a good job duplicating the O scale trunk of the willow trees.

10. This photo of the last train on the YV in August 1945 provides a good view of the telephone poles and barbed wire fences following the tracks. I suspect that the pair of wires on the pole brackets below the crossarms are the original telegraph wires – the YV switched to telephones in 1931. The smoke trailing behind the engine is because the fireman turned up the oil for the benefit of the photographers on this last run. The effects made for a next photo but started a grass fire in the process.

[10] so they are both required modeling projects. I have some barbed wire fences on my home layout which I modeled with very thin fishing monofilament, tying overhand knots to represent the barbs. While they look good on the HO layout, I knew that the same technique wouldn't work in O scale, and I needed a way to more accurately model barbed wire.

Prototype barbed wire typically consists of two strands of 12.5-gauge wire. That is equivalent to 0.08" wire (46-gauge) in O scale. I purchased a roll of 40-gauge wire to make the barbed wire, but it was just too thin and easily broke just trying to use it. So I

compromised and used 36 gauge wire which was 0.002" thicker but, more importantly, didn't break so easily.

To model barbed wire, I needed to twist two strands of 36 gauge wire together evenly while also adding the barbs between the strands. To accomplish this, I built a makeshift tool which let me twist the stains while inserting short pieces of 36 gauge wire for the barbs every scale foot or so; they should be every 6". The twists in the wire started off fairly loose but tightened up as I continued to produce more and more barbed wire. Once a strand was twisted and the barbs inserted, I soldered all the barbs to the wire so that they wouldn't slide out of place later. I then clipped the barbs to length. Since there are three-strand barbed fences on each side of the railroad tracks, and the diorama is 36" long, I ended up making about 18 actual feet of barbed wire. Fortunately, although this effort was monotonous drudgery, I got faster with experience, and I could at least listen to the television at the same time.

I airbrushed the finished strands with Floquil Railroad Tie Brown and then attached them to the posts with loops of 36-gauge wire [11]. The barbs won't break the skin, but you certainly realize when you are holding the barbed wire too tightly.

Where the fence crossed Edendale Creek, I used small sagebrush branches to hold the barbed wire in line. One of the posts extends into the creek itself, and it was thus easy to add some floating vegetation caught on it [12].

Telephone poles

I didn't realize ahead of time that building telephone poles would involve so much research. The first and most obvious problem was to determine the height of the telephone poles along the YV.

11. A view of a portion of the three-strand barbed wire fence with some extra wire stored for future field repairs when needed.

From some general telephone pole research online, I learned that crossarms were a standard length based on the number of insulators. The YV telephone poles had 10 insulators, which meant that the crossarms were 10 feet long. From a good photo of a telephone pole along the line, I was able to determine that the poles were 22 feet tall and also tapered from 8" in diameter at the bottom to 7" in diameter at the top. At a website called "song of the open wire" the-electric-orphanage.com, I learned about insulators, wire sag, pole materials, and everything one could want to know in order to accurately model period telephone poles and wires. For example, my online research suggested that the poles along the YV right-of-way

were ponderosa pine, given the ready availability of ponderosa pine in the nearby Sierra Nevadas.
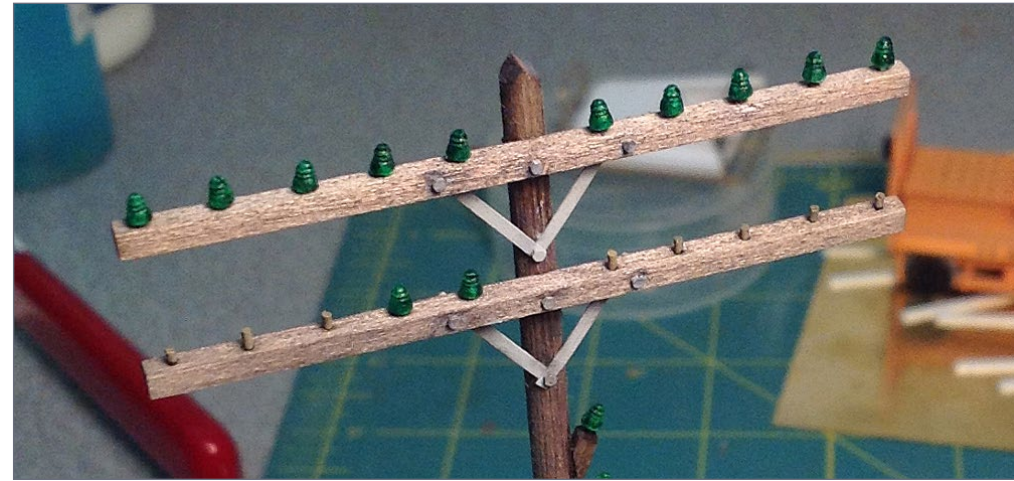
While I could have started with birch dowels to make my telephone poles, birch doesn't take stains like pine or basswood. I turned the telephone poles in a small wood lathe using square basswood – a good reason to purchase a new power tool, since I like tools. After adding a rough texture with a Zona saw, the poles and crossarms are stained with multiple applications of black and brown shoe dye mixed with alcohol.

While brass telephone insulators are available, I wanted to be able to duplicate the translucence of prototype grass insulators. So I used rapid-prototyping to produce a sprue of them in a

13. One of the telephone poles nearing completion. The semi-transparent insulators were "printed" using rapid-prototyping technology.

material called Frosted Ultra Detail, which is semi-transparent. After installing them on the crossarms, I painted them with Testors Transparent Candy Emerald Green enamel. The crossarms were then attached to the telephone poles using brass 0.5mm bolts and nuts [13]. The telephone wires were added as one of the last details, using copper-colored EZ Line elastic thread from Berkshire Junction.

Details

Wild blackberries are prevalent in wetter areas such as that around Edendale Creek. I modeled them using clumps of Silflor Beech Tree Medium Summer since it had the right color and leaf size. Dots of white paint are added to represent the berry flowers that would be in bloom around April. I made some California poppies and bush lupines using Silflor Prairie Tufts Long, trimming them so that only the center portion of the tufts is left.

12. The barbed wire is held in line as the fence crosses the creek with rough fence posts wired in place. The second post from the left has been hanging in the water and has become entangled with some floating vegetation.

Some orange foam (with some bright orange paint to provide more color) duplicated poppy blooms. The bush lupines were modeled in a similar fashion, except that I added some purple cut-down flower stalks from JTT [14].

When I took a field trip to Edendale Creek before starting this project, I noticed a low area close to the creek filled with bullrushes and other water-loving vegetation. My guess is that this area occasionally gets flooded when the water in the creek is running high. I duplicated this detail on the diorama with a fallen tree (a sagebrush branch), some more blackberry bushes, some bullrushes from Scenic Express, and some wild thistle made from JTT flower stalks with pink foam representing the flowers [15].

14. A small wild blackberry bush is in the foreground along Edendale Creek while farther back are some California poppies and a bush lupine.

15. The wet area near the creek. A sprinkling of Super Turf Leaf Litter from Scenic Express was put down first and bonded in place with diluted white glue. A coat of gloss medium gave it a wet look, and then the other materials were added. The gray in the lower left corner is a portion of the roadway, while the light gray is the concrete barrier. Weeds are growing in the crack between the road and concrete.

I like details that tell a story and add interest, but aren't noticed until after looking around a little while. Red-tailed hawks are a common sight in the area of Edendale Creek. I was aware of the HO scale birds available from Little Creatures, since I have some of his HO loons and hawks on my layout. He also has an O scale bald eagle, but it isn't native to the area I'm modeling. However, after discussing with the owner via email what I was looking for, I received a pair of O scale red-tailed hawks for my project! One is on top of a telephone pole [16] staring intently at a jackrabbit

hiding behind a blackberry bush [17] while the other is swooping down on an unsuspecting ground squirrel [18].

Bridge signs are another easy detail. Railroads used different systems to number and identify bridges along their lines. The one used by the YV was relatively simple. The first bridge beyond first milepost (MP) on the line would be bridge 1A followed by 1B while the first bridge beyond MP 1 would be bridge 2A and so forth. There were no bridges in the first mile of the YV, but I'm assuming the system is based on not have a bridge 0A.

Bridge signs on the YV were 10" high by 12" wide painted metal signs. There was only one sign per bridge, installed to the right

17. Here is the jackrabbit hiding from the hawk.
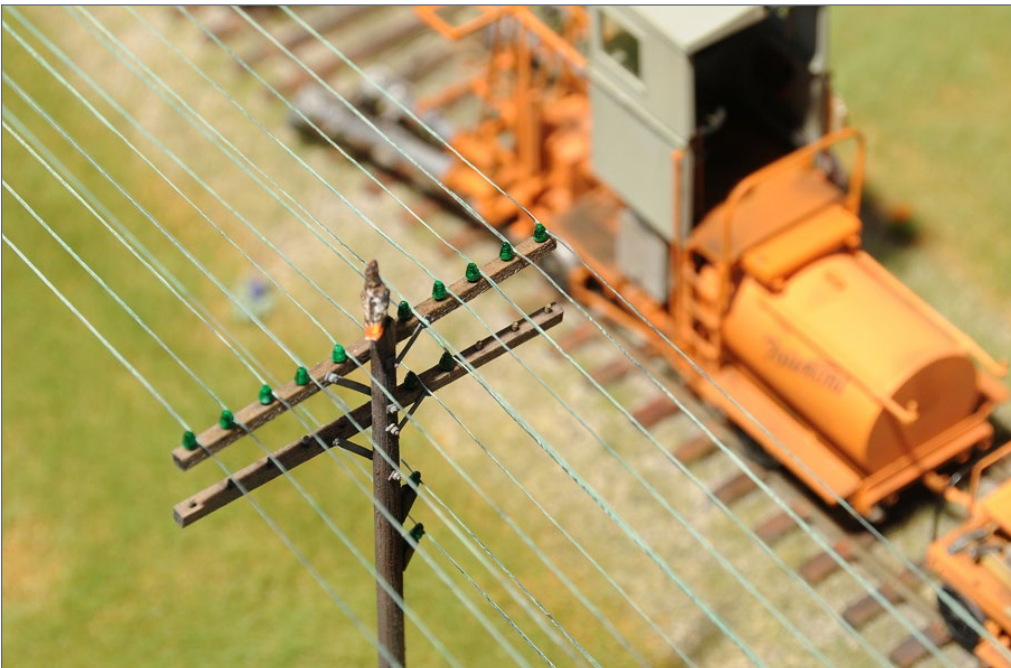
16. A Red-tailed hawk watches a rabbit on the other side of the tracks behind some brush. Although called red-tailed hawks, their tails are actually more orange.

18. The other hawk has just left its perch in a willow tree and has its eyes on the unsuspecting ground squirrel near the telephone pole.

looking toward increasing mileposts, but each sign was painted and lettered on both the front and back sides. I fabricated mine using .010" styrene and decals printed on my computer [19].

Figures also help tell a story. All of the figures on the diorama are the excellent castings by Buffalo Landing. These figures come unpainted, and I was somewhat apprehensive about painting them since 90% of the figures on my HO layout were purchased already painted. After watching videos on figure painting found on YouTube, I felt comfortable enough to get on with it. The process turned out to be very satisfying.

One of the first things I did though was to learn more about working men's clothing circa the late 1930s and early 1940s. I realized that coveralls were common for workers, especially shop workers. But a photo of a YV section crew [20] shows more men with jeans and work shirts than coveralls. Using this photo as a guide, I painted a couple of my figures as Mexicans [22 and

19. The bridge sign for the trestle over Edendale Creek.

23] which, based on this photos, meant adding a mustache and using somewhat darker skin colors such as Vallejo Gold Brown.

Another photo of a YV track crew [21] rebuilding trackage at Moss Canyon circa 1938 provided additional details. A few workers are wearing coveralls and most shirts are light-colored. Pants were darker, maybe denim, dark gray, or brown.
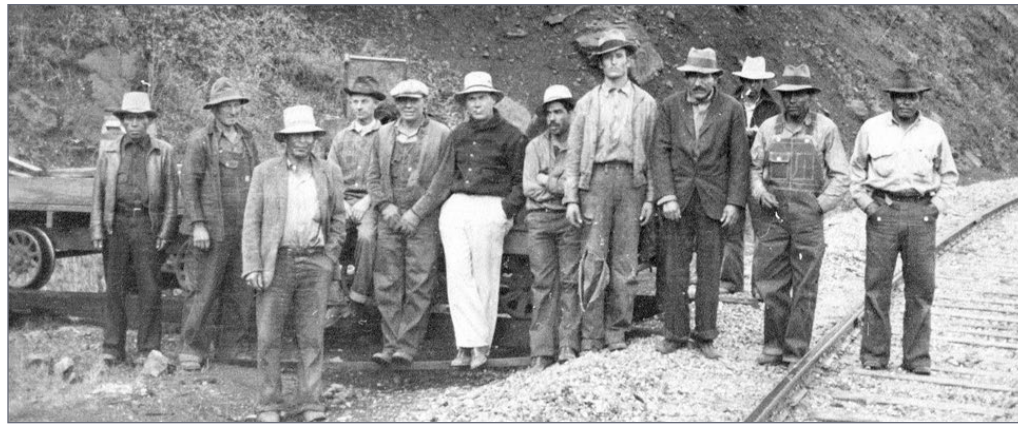
Googling "1930s men's work clothes" and clicking on Images provided a lot of more information on colors of men's clothing in that period. Color photos of vintage coveralls show that the natural indigo dye used in those days faded a lot more than current-day synthetic dyes. Also, men's jeans didn't come in a variety of

20. A YV section crew along the line with one of the speeders behind them. I suspect that the fourth person from the right is the foreman – the rip in the knee of his double-layer pants might be from kneeling down to sight along the rails to check the alignment. Every man has a hat, with several of them wearing fedoras. I'm not sure about the fellow with the light-colored pants and shiny shoes but I think that he might be from the office.

21. These section crew members are rebuilding tracks after a disastrous flood in December 1937. Again, mostly dark pants and light shirts. Note "Mr. Sourpuss" staring at the camera on the left.

lengths, so cuffs at the bottom were universal. Finally, from the images I looked at, men's pants tended to be dark colors (black, brown, blue) with white or denim shirts. The only greens and reds I saw were wool shirts such as made by Pendleton. Together, the YV photos and the images available online gave me a good idea of the color of pants and shirts I needed to replicate.

I have been using Vallejo acrylic paints for brush-painting figures and details for some time and, after watching one especially good YouTube video, I purchased a number of additional colors for painting faces. However, I later discovered that some of the Vallejo paints recommended in that video, such as Basic Skintone, Sunny Skintone, and Light Flesh, are too light to represent the faces of persons working outdoors like section crew members. Instead, I used colors like Vallejo Dark Flesh and Flat Flesh. Mixing these colors with a slightly darker color provided contrast around the figure's eyes, mouth, and ears. I used the same approach when painting their clothing, starting with the basic color such as a very light denim and then painting slightly darker shades in the creases and folds.

When I purchased my set of Buffalo Landing figures, I also wanted a specific figure that was in one of the sets. That figure relates back to the prototype photo of the section crew [21] at Moss Canyon. Look closely at the fellow on the extreme left. Doesn't he look a lot like this Buffalo Landing figure?[24] I thought so, and painted him much like the prototype photo.

Building the diorama with scenery duplicating the prototype scenery as closely as possible, and models of actual pieces of YV equipment was extremely gratifying. There were also a number of challenges which were always enjoyable to resolve. That just makes me want to move on to more challenging projects.

22. The operator of the ST-2 speeder talks to one of the hosemen.

23. Another view of this same pair of figures. The mustache on the hoseman seems fairly common for Mexicans on the crews.

24. This is the Buffalo Landing figure that reminded me so much of "Mr. Sourpuss" in photo [21].

Today, the area around Edendale Creek still remains mostly undeveloped. Orchards have replaced some of the open grazing land, but it still looks much like it did 70 years ago [25]. ☑

See photo on the next page ...

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25. This photo captures the openness of the area around Edendale Creek late in the day.
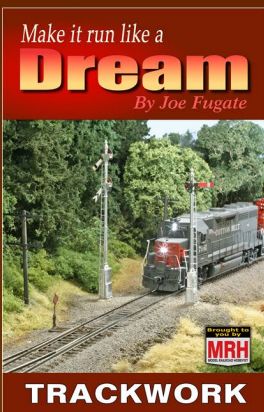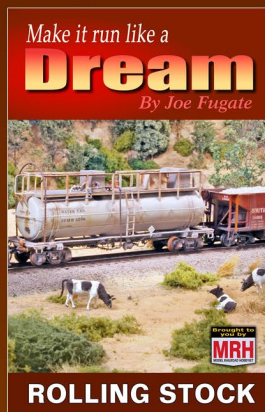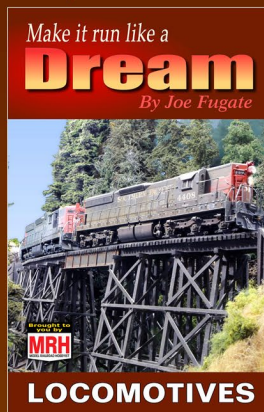
Realistic scenery: Color and texture
By Joe Fugate

1. If you know southern Oregon, then this scene will ring true to you as looking "right." I'm using a philosophical underpinning in my methods to make this scene appear more real: deliberate color and textures common in southern Oregon. I cover the details in this article.

I HAVE A SPECIFIC PHILOSOPHICAL UNDERPINNING I work from when building model train scenery to make it look more realistic: correct color and texture. While these ideas may sound somewhat nebulous, let me make them more concrete for you here in this article.

To set the stage, let's start off with an example scene from my HO scale Siskiyou Line. I'm modeling the prototype Southern Pacific in southern Oregon, so I am aiming to get a specific look for that locale which rings true [1].

The first key to realistic scenery is getting the proper color of the scenic elements.

For this, you need to do some careful observation. Grass is not always green, rocks are not always gray, dirt is not always brown, and water is not always blue.

Photographs of the region you are modeling can be a great help here. Take a close look at the kinds of scenic elements (rocks, trees, bushes, grass) and their color.

2. Here's a Google Maps "street view" of some southern Oregon scenery that I'm trying to model. Most prototype scenes in this area aren't this open – most are a lot more closed in like I'm modeling. But you can see the trees, the grassy hills and the distant blue mountains I'm trying to capture from this example.

3. In May, deciduous tree foliage is a shade lighter than it will become in June, so the difference in color between conifer and deciduous tree foliage is dramatic this time of the year. Learn to notice this sort of thing with regard to scenery color.

For example, conifer trees generally exhibit a much darker green vegetation color, so to make sure they stand out properly on the model, they should be several shades darker green than deciduous trees. Check out this photo [3], taken on the old SP Tillamook branch in May.

To get more realistic colors for your scenery, work from photos. You would never hesitate to work from photos if you're modeling a piece of rolling stock or a loco – scenery is no different.

Ideally, work with your photos under your layout lighting, and make sure any work space is also lit with the same lights you're using on your layout. If you match the colors in your scenery reference photos to the colors of your scenery, then the colors will be more realistic.

Look for opportunities to introduce subtle color variations into your scenery as well.

For example, indoor lighting is far dimmer than outdoor sunlight, so I use coloring tricks to make the indoor lighting look more like sunlight. When I do a deciduous tree, once it is all done, I take a can of pale yellow spray paint and lightly mist the tree from above. This causes the parts of the tree that face *up* to have a hint of yellow green as compared to a darker green on the parts of the tree that face down.

This trick simulates sunlight and makes the model tree seen under dim indoor lighting look a lot more like they're outside under sunlight. Subtle color tricks like this really make your scenery stand out and look real.

One common mistake on model scenery is to make the colors too intense. Muted colors, and subtle color variations go a long ways toward making your scenery look more realistic. Ironically, the best thing that can happen to some model scenery is a year's layer of dust! The dust will blend and subdue the colors, actually making the scenery look better!

One clever way to check the coloration on your scenery is to take some black and white photos of your scenery and also some

4. In this photo you can see yellow fuzzy grass texture in the front of the scene (static grass), transitioning to simply yellow hills with no texture in the background against the backdrop.

color photos of your scenery. Then show the photos to your non-modeling friends and ask them which photos look more like the real thing to them.

If your friends pick the black and white photos, that's a strong clue your coloration may be off.

Proper texture

Proper scenery texture is a concept that's not as obvious as proper scenery color – yet if you get this concept down, you will understand where you can cut corners with your scenery detail and your scenery will look more real than ever.

Again, carefully observe the area you are modeling, this time for the textures that are common. Photos can be a big help here since you can study them at your leisure.

5. I'm using a variety of materials to simulate different kinds of bushes and grass in this scene. In [6], I detail the various materials I'm using to get a more realistic texture variation.

Many modelers overlook proper texture and as a result you can look at a photograph of their layout scenery and it instantly screams "Model!"

The transition in the 1970s from lichen to ground foam was a big step in the right direction with regard to texture, because the lumpy *texture* of ground foam is more like leaves than the filament texture of lichen.

However, many modelers get one grind of ground foam and use it everywhere for everything: grass, bushes, deciduous trees, conifer trees, dirt. If you pay attention to texture, this of course results in the wrong texture for some of these things.
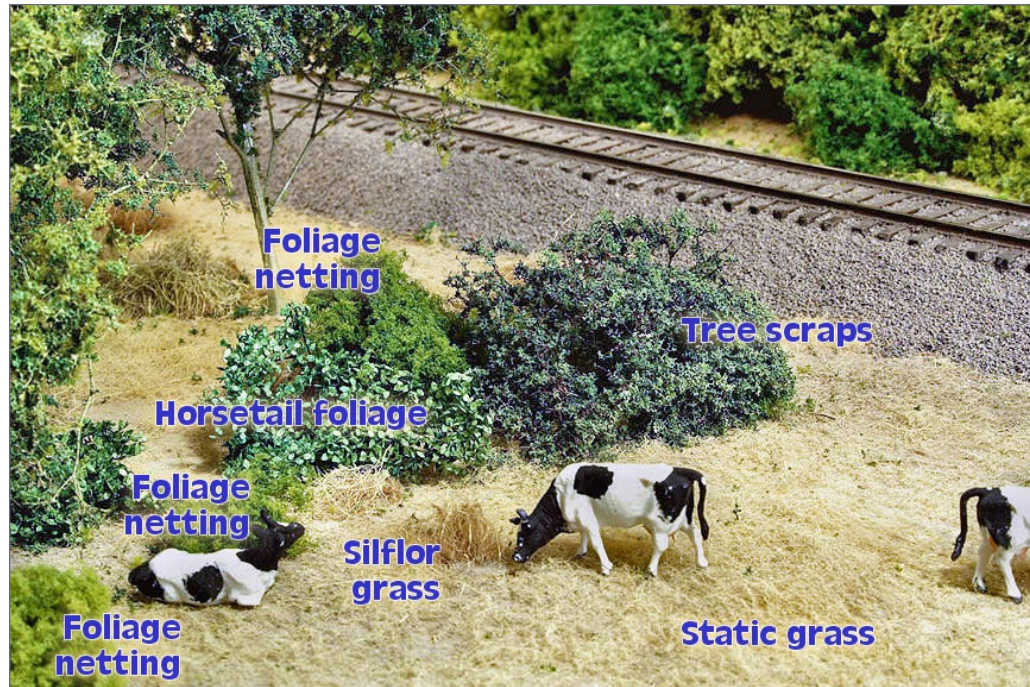
6. You can see I'm using Scenic Express SuperTree scraps, Horsetail foliage, and Silflor grass, along with Woodland Scenics Foliage netting for the various textures in this scene.

And some things, like grass, have a texture more akin to filaments rather than lumps, which means *no kind of ground foam* will do for the texture of grass. Only a very short trimmed and manicured lawn can be simulated with ground foam. All other kinds of grass need to use something else if you want the proper texture.

The other thing with texture is to understand you can take shortcuts in your scenery, especially in the back half of a scene toward the backdrop [4]. As things recede into the distance, texture fades away and mostly color applies. You can use very simple low-texture methods in the back of your scene and as long as the color is good, the scene will look great.

As a further texture example, consider a deciduous tree and a conifer. Deciduous trees tend to have broad, flat leaves, while conifers tend to have small, pointy needles. In terms of texture and modeling at the typical modeling scales of O, HO, and N scale, this means we use a coarse ground foam for representing deciduous tree foliage, but use fine ground foam to represent conifer tree foliage.

I use different materials to get different scenery textures [5, 6].

As you get into the specifics of modeling your scenery, keep in mind these two guiding philosophies of color and texture. If you work on applying these concepts, your model scenery will imediately improve, and your layout will look more realistic than ever. ☑

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MAY NEWS
column

RICHARD BALE *and* JEFF SHULTZ

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Bachmann's New Product Development VP Larry Harrington has been promoted to vice president of product development at Bachmann Trains. He steps into the executive position previously held by the late Lee Riley. Harrington has been general manager of product development at Bachmann since 2014. He served as general manager of Bachmann's O Gauge Division from 2007 to 2014. Before joining Bachmann, Harrington held an executive position at Williams Electric Trains. He brings more than 26 years of experience to his new position at Bachmann ...

Palace Car Company, a manufacturer of HO scale car interiors, is in the process of relocating from Nebraska to Washington State. Orders to consumers, dealers and distributors may

▶ THE LATEST MODEL RAILROAD PRODUCTS, NEWS & EVENTS

experience some delays but things are expected to be back to normal by the end of this month. For addition information visit palacecarco.com ...

NEW CLUB CARS

The **Kalamazoo Model Railroad Historical Society** is selling an HO scale 50-foot insulated plug door boxcar decorated for Bell's Brewery, a local enterprise founded in Kalamazoo, Michigan in 1985. Six different car numbers are available in kits at $25.00 each. An assembled model is priced at $30.00. A deluxe assembled version is also available with Kadee couplers and wheelsets at $35.00. For additional details including ordering instructions visit kmrhs.org.

The Nickel Plate Road Historical & Technical Society is selling an HO scale Accurail kit for a NKP ETTX tri-level auto rack car. The kit is available in three road numbers: 500706, 500720, and 500813. Decals are included for seven additional numbers. For ordering information visit nkphts.org.

NEW PRODUCTS FOR ALL SCALES

The latest issue of **Railway Prototype Cyclopedia** is a combined release of Volumes 31 and 32 on the subject of

Lightweight House Cars, part 2, by Patrick Wider. This special 265-page edition includes 234 photographs and 36 industry trade advertisements on lightweight, low-alloy steel house cars (box, automobile, reefers) built from the 1930s to the early 1950s. The author thoroughly explores the experiment that resulted in a significant number of unique freight cars of interest to both railroad historian and model railroad hobbyists. For additional details including ordering information visit rpcycpub.com.
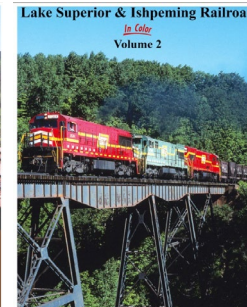
Morning Sun Books has released *Conrail Central Region in Color Volume Three 1987-1993,* by Stephen Timko. Additional new hardback books recently issued by MSB include; *Western Maryland Power in Color -- The Diesel Years,* by Robert Yanosey; *Chicago & North Western Power 1963-1995* by Stephen Timko, and *Trackside Around Rochester* by Daniel Orr and Greg Marling. James Kinkaid continues his series of books about privately owned cars including hoppers, insulated boxcars and flatcars. His most recent release is *X-Car Color Guide Volume Three -- GROX to NYMX.* Additional new titles include *Buffalo, Rochester & Pittsburgh in Color Volume 5,* by *Mike Zollitsch; Lake Superior & Ishpeming Railroad Volume 2,* by David Schauere; and *Appalachian Coal Mines and Railroads Volume 3,* by Stephen Timko. For additional information visit morningsunbooks.com.

O SCALE PRODUCT NEWS

Atlas O production schedule for the third quarter of this year includes a 50-foot steel boxcar with double doors. Depending on the practice of the prototype, the Master series O scale model will have either Youngstown or Pullman Standard doors. Additional prototype options replicated on the models include either 50-ton roller bearing trucks or 70-ton trucks with rotating roller bearing caps. Road names on this release will be Chessie System, Erie Lackawanna, Illinois Central Gulf, MKY, and SOO Line.
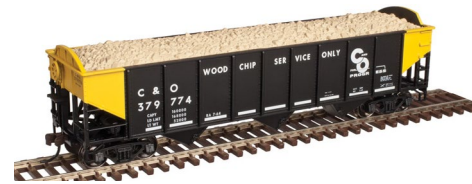
Also expected during the third quarter is a Trainman series AAR 70-ton triple-bay open hopper car. Road names will be Grand Trunk Western, Union Pacific, and Burlington in BN merger repaint. Also two cars designated for wood chip service: Chesapeake & Ohio and Central of Georgia. An undecorated model with flat ends will be included in this production release. Atlas O ready-to-run models are available for 2-rail operation with scale wheels and body mounted couplers. They are also available with 3-rail trucks pre-drilled for Atlas O Adjust-A-Couplers. For more information contact a dealer or visit atlaso.com.

B.T.S. is taking advance orders for a lumbering complex titled Coon Gap Sawmill. The O scale craftsman kit was last produced in 2000. B.T.S. owner Billy Wade has made a few changes in the kit and reworked the instructions. The completed model has a
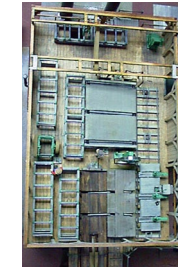
removable roof to allow viewing of the interior. The kit includes more than 60 castings of brass, white metal, plastic, and resin. The structure itself consists of laser-cut basswood, plywood and cardstock. For additional details including ordering information visit btsrr.com.

HO SCALE PRODUCT NEWS

New **Accurail** HO scale kits available include this Illinois Central PS 4750 cu. ft. triple-bay grain hopper.

Accurail has also released a URTX 40-foot steel refrigerator car displaying a Chicago Great Western logo. The model represents a 1952 prototype as rebuilt in 1957.

Additional new kits include 40-foot wood refrigerator cars decorated for CB&Q and NPLX-Nickel Plate Lackawanna Dairy Line.

Also a three-pack of 40-foot steel boxcars with Dreadnaught ends decorated for SOO Line, SL-SF Frisco (Frisco Fast Freight slogan), and Minneapolis & St. Louis (The Peoria Gateway slogan). All Accurail kits include appropriate trucks and Accumate knuckle couplers. For additional information contact a dealer or visit accurail.com.

Athearn has set a December delivery date for an HO scale Genesis Union Pacific 4-6-6-4 Challenger steam locomotive. Both CSA-1 and CSA-2 class version of the simple articulated locomotive will be produced. Variations in the two classes include single and twin stacks, dome size, piping arrangement, lettering schemes, and coal or oil tenders. Additional features include printed manual controls on the boiler backhead, an adjustable cab vent, and individually applied piping, valves, and generator. Electrical features include pickup on all drivers, a tender light, functioning number boards, and headlights with directional light change.

A new run of Genesis GP7/GP9 diesel locomotives has been scheduled for release in January 2017. Decorating schemes for the FP7 include three variations of Rock Island (above), Central of Georgia, and Southern Railway. A low-nose GP9 will be available for Southern Pacific in a faded bloody-nose scheme.

Athearn Ready-to-Roll freight cars due in January include a 40-foot modern box car decorated for Santa Fe, Burlington Northern, Canadian National, Chessie System, Erie Lackawanna, and Illinois Central Gulf.

Also a PS 4740 cu. ft. triple-bay covered hopper with 36-inch wheelsets decorated for Con Agra, Burlington Northern, Canadian National, Conrail, Farmland Industries, Milwaukee Road, Norfolk Southern, Producers Grain, and Union Pacific.

Three-packs of 40-foot corrugated containers coming early next year from Athearn will be decorated for MOL, NYK Logistics,

COSCO, Hamburg Sud, ZIM, and Pasha Hawaii. Features include separately applied door closure rods.


A GP38-2 diesel locomotive is set for release next January under the Athearn-Roundhouse label. Road names will be Kansas City Southern, Canadian National, and CSX.

January is also the release date for an Athearn-Roundhouse EMD GP50 diesel locomotive. In addition to the Norfolk Southern scheme shown above, the HO scale ready-to-run model will be available for Genesee & Wyoming (Toledo, Peoria & Western), Genesee & Wyoming (Indiana & Ohio), Santa Fe (blue and yellow scheme), and Burlington Northern.
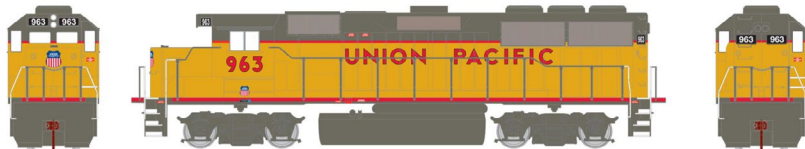
Additional round names for the GP50 will be BNSF, Chicago & North Western, and Union Pacific..
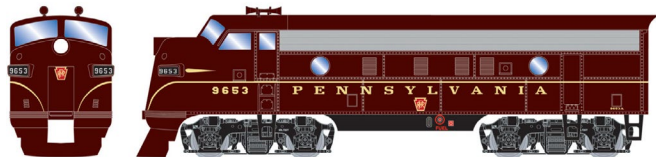
Also scheduled for release next January is a new run of Athearn-Roundhouse EMD F7A/B diesels with molded-on detail. Road names for the HO scale Ready-to-Roll locomotive will be PRR (Tuscan scheme) and Amtrak. These road names are in

additional to the previously announced PRR (Brunswick scheme), Canadian Pacific, Canadian National, and Southern Pacific (Daylight scheme) F7s scheduled for release in July.
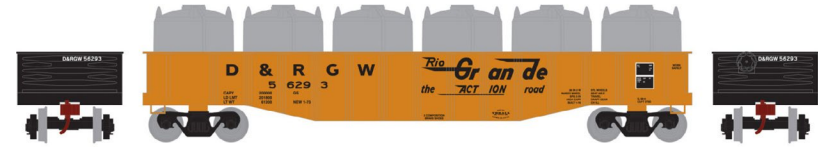
Additional freight cars due from Athearn-Roundhouse next January include 50-foot steel gondolas with a load of six removable canisters. The gondolas will be available for Denver & Rio Grande Western, Canadian National, CSX, Conrail, Reading, and Union Pacific. A new production run of 50-foot ACF outside post boxcars and a single-dome chemical tank car with wire handrails are also scheduled for release in January.
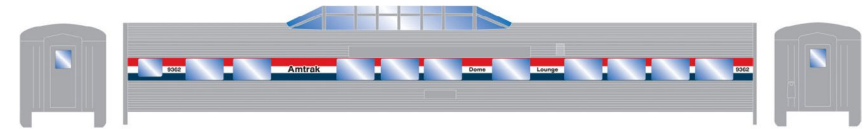
Completing Athearn's January 2017 release are a group of fluted-side streamlined passenger cars decorated for Amtrak and Pennsylvania Railroad. Car types will be RPO, baggage, coach, diner, Vista dome, and an observation car with a printed drumhead. For information on all Athearn and Athearn-Roundhouse products contact a dealer or visit athearn.com.

Atlas Model Railroad Company has scheduled the release of HO scale U33B/U36B locomotives during the fourth quarter of

this year. The Master series model will be available in both early and late phases of the General Electric prototype. The early phase version includes flush-mounted radiator screens and air intake screens on the long hood. There is also a built-out area on the top of the front and rear pilots. Late phase models have corrugated radiator and air intake screens and a flat pilot face. A separate electrical equipment box is positioned on the left walkway behind the cab on later phase prototypes. The Atlas model comes with either AAR-B or Blomberg trucks as appropriate to the prototype road being modeled. U33B locomotives will be available decorated for Penn Central, Reading & Northern, and Rock Island.
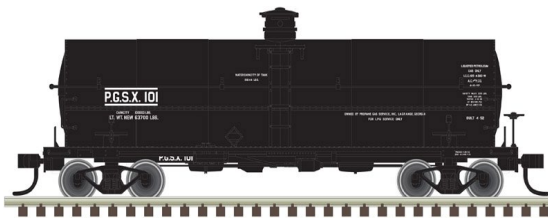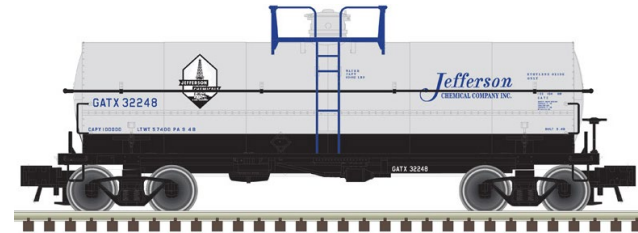

U36B models will be available decorated for Auto Train and Seaboard Coast Line's Bicentennial schemes as well as in SCL's black and yellow livery as shown here.

Two versions of this 11,000 gallon tank car are scheduled for release during the third quarter of this year. The Atlas HO scale ready-to-run model will be available without a platform decorated for Gas-Oil Products and PGSX-Propane Gas Services.

Cars with platforms will be available decorated for Gem Automatic Gas, Pyrofax Gas, Superior Propane, and Jefferson Chemical. Undecorated version of both platform styles will also be available.

Also due from Atlas during the third quarter is this HO scale AAR 70-ton triple bay hopper car. Features of the Trainman series ready-to-run model include a removable load, Accumate couplers, and metal wheelsets. Road names will be Richmond, Fredericksburg & Potomac; PMCX; Burlington Northern; Canadian National; Santa Fe; Donner-Hanna Coke; Central of Georgia; and New Haven. Undecorated models will also be available. Additional information can be found at atlasrr.com.

Bachmann Trains has released production versions of the modified HO scale 4-6-0 steam locomotive previewed at last year's National Train Show. The Baldwin Ten Wheeler, now fitted with 52-inch drivers, returns to Bachmann's lineup in a DCC sound-equipped version that

includes the company's proprietary Sound Value package with SoundTraxx 16-bit polyphonic steam sounds that includes exhaust, short and long whistles, bell, air pump, steam release and a blower.

A DC analog version of the HO scale ready-to-run locomotive is available decorated for Maryland & Pennsylvania (above), New York Central, Baltimore & Ohio, Canadian Pacific, and Texas & Pacific. A fully equipped DCC sound version is available decorated for Pennsylvania Railroad, Union Pacific, Southern, Chesapeake & Ohio, and Santa Fe.

Also new from Bachmann is an HO scale ACF 56-foot quadruple-bay center-flow covered hopper.

In addition to the CP Rail car shown here, road names are Santa Fe, New York Central, Kansas City Southern and CSX. For more information on all Bachmann products contact a dealer or visit bachmanntrains.com.

Broadway Limited Imports is preparing another production run of Southern Pacific 4-8-8-2 cab forward steam locomotives for delivery late this summer. BLI will offer class AC-4 cab forwards with a black

boiler (above) and the moderately heavier but otherwise identical class AC-5 with a gray boiler and Tuscan cab roof (below). Each class will be available in two road numbers plus a fully painted but unlettered model.

The HO scale ready-to-run model will feature BLI's Paragon3 Rolling Thunder sound, synchronized exhaust chuff, a traction tire driver, and knuckle couplers on both the locomotive and the tender. The HO scale model will operate on a minimum 22-inch radius curve, however a broader radius is recommended. For additional information contact a dealer or visit broadway-limited.com.

ExactRail has launched the third release of their HO scale Bethlehem quad-bay 3737-3716 cu. ft. open hopper car. Four new paint schemes are available for the Platinum series model plus an undecorated kit. Road names include Chicago & North Western Bicentennial car No. 135799, Chicago & North Western (1971 as delivered scheme), Missouri Pacific (1984 repaint with small eagle logo, two versions), Union Pacific (class H-100-39 in 1991 repaint), and EWSX-Indianapolis Power & Light (as delivered in 1973 Reddy Kilowatt scheme). To order go to exactrail.com.

Fos Scale Models has introduced a craftsman kit for a Railway Express freight house. The structure features a 3-1/2 story office section, a main freight house, and a small auxiliary dock. The building facilitates rail service on one side and REA delivery vehicles on the other.


The HO scale kit is composed of laser-cut walls, Tichy plastic windows and doors, laser-cut doors and windows, cast metal detail parts, and color signage. The detailed instructions include templates to aid in construction. The completed model has a foot print of 6 by 26 inches. For more information visit fos-scalemodels.com/products/rea-freight-house-ho-scale-kit.

Howard's Hobby specializes in latex rock molds and HO scale street signs. Their newest products include the RM30 rock mold, which will produce a rock spire approximately 3-1/2 inch high by 3-inch wide. New street signs released include local signs for Route 66 in Arizona, New Mexico, and Oklahoma. For more information visit howardshobby.com.

InterMountain Railway is quoting a date of November/December for the next release of its HO scale EMD FP7 and F7B diesel locomotives. Road names will be CTCUM-Commission de Transport de la Communauté Urbaine de Montreal (above),
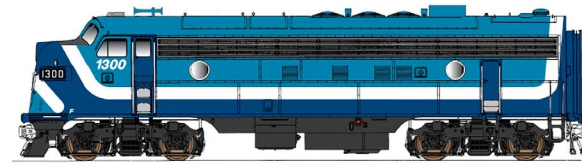
Western Pacific, Alaska Railroad, Stone Mountain, RJ Corman, Wyoming & Colorado, Louisville & Nashville (original blue scheme and dark blue schemes), and Southern Pacific (bloody nose and black widow schemes). B units will be available as appropriate to the prototype road name. Both DC and DCC versions will be offered.
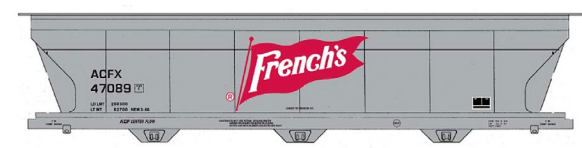
The November/December production schedule includes HO scale 4650 cu. ft. triple-bay hopper cars. The ready-to-run models have etched metal roof walks, metal wheelsets and Kadee couplers. In addition to the ACFX-French's scheme shown here road names will be ACFX-Sterling Salt, ACFX-American Borate, ACFX-Thiele, Burlington Northern, Cotton Belt, Southern Pacific, Sclair, ATSF, and ECC International. Undecorated kits will also be available in this release. See intermountain-railway.com for more information.

Completing InterMountain's late 2016 schedule is a group of A-Line five-unit articulated twin-stack cars. Road names will be New York, Susquehanna & Western (ex SeaLand); CSX; Burlington Northern; ATSF; SOO Line; Southern Pacific; Conrail; Trailer Train; and Panama Canal Railway (two of the five units are shown here).

New **Kadee Quality Products** HO scale ready-to-run freight cars coming next month include this Union Pacific 40-foot PS-1 boxcar with an 8-foot Pullman Standard door. The model is decorated with the paint scheme and slogan of the prototype when it was built in 1957.

Kadee has scheduled a July release date for a Santa Fe 50-foot boxcar with 8-foot PS door. The prototype was built in 1957.

Also scheduled for release in July is an HO scale version of this 50-foot PS-1 boxcar decorated for Seaboard Air Line. Like the prototype, Kadee's HO scale version will be fitted with a 10-foot Youngstown corrugated steel door.

Kadee plans to release this ACF-built 11,000 gallon insulated tank car in July. The HO scale ready-to-run model will be decorated for UTLX-Union Tank Car Company. For additional information on all Kadee products contact a dealer or visit kadee.com.
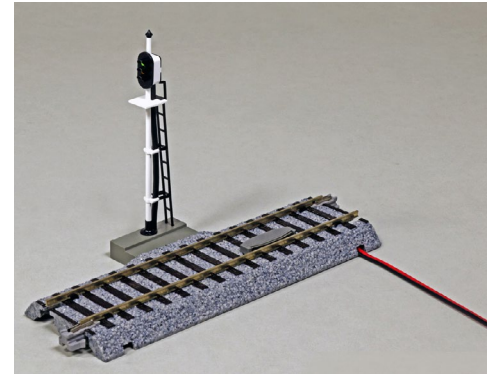
KatoUSA has a new 3-color signal system with the signal head and mast built into a section of Kato's HO scale UNITRAK. The DCC compatible signals require a separate power supply (Kato item 24-844). For more information, including a demonstration of the signals in operation, go to youtube.com/watch?v=xtx4XS30b6c.

Kato has released its new SD40-2 locomotive decorated in Santa Fe's blue and Yellow Bonnet scheme. The HO scale diesel represents the mid-production version of the prototype SD40-2.
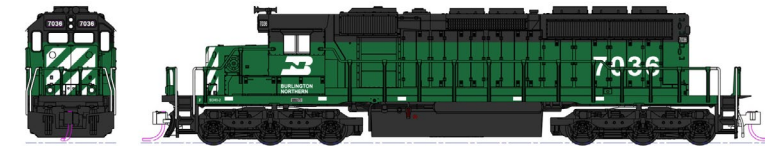
A Burlington Northern version of the SD40-2 is set for release later this month. The model is available for standard DC operation or with a factory installed ESU Loksound DCC with sound. Kato has added a nice feature that allows the selection of either steady or flashing ditch lights whether operating on DC or DCC. For additional information contact a dealer or visit katousa.com.

Nick and Nora Designs is selling a craftsman style kit for a waterfront structure identified as Sea View. The HO scale kit consists of laser-cut clapboard walls, Tichy doors and windows, metal roofing, numerous cast resin details, and color signage. The illustrated instructions include full-size templates to aid in assembly. The pier is board-on-board construction. Illustrated instructions, full-size templates to aid in assembly, and full-color signs are included. The finished model has a footprint of 5-1/2 x 10-inches. Figures shown in the photo are not included in the kit. For more information visit nickandnoradesigns.com.

ScaleTrains.com has released a video that demonstrates how to weather a boxcar in their new entry level Kit Classics series of HO scale ready-to-run models. To access the video go to scaletrains.com/blogs/company-news/92906371-weathering-a-scaletrains-com-evans-boxcar-by-jonathon-hill?utm_campaign=Newsletter+03-24-16+Weathering+the+Norm+%28qszm6G%29&utm_medium=email&_ke=cmhiYWxlQGFvbC5jb20%3D&utm_source=Newsletter.

ScaleCast Mouldings is developing a line of HO scale cast plaster tunnel portals, modular retaining walls, cobblestone streets, and roofing sheets.
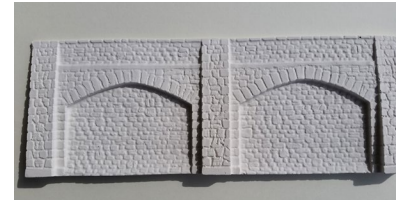
The company uses Hydrostone, a plaster that sets up hard and is said to be stronger than plaster of Paris. For additional information visit scalecast.ca.

In conjunction with the launching the Econami line, **Soundtraxx** has introduced new speakers with an improved dynamic range over their previous models. Measuring just 28mm (1.1-inch), the new speakers are rated at 1 watt with a 2-watt peak. Soundtraxx reports the new speakers are better suited to match the power output levels of the ECO-200, PNP and 400 audio amplifiers. The speakers have an MSRP of $11.95. For additional information contact an authorized Soundtraxx dealer.

Tangent Scale Models has released an HO scale version of a Pullman-Standard PS-2CD 4000 cu. ft. covered hopper car. This beautifully rendered model faithfully replicates a prototype Pullman-Standard built in the early 1960s. Many remained in service for more than four decades. Notable features of the ready-to-run model include scale-sized wire grab irons and uncoupling bars, Kadee couplers, see-through etched-metal running boards and brake platforms, separate air hoses, and

appropriate trucks with machined 36-inch wheelsets. Road names include this ATSF car decorated in a 1973 repaint scheme.

End detail of Tangent's PS-2CD is clearly shown in this Baltimore & Ohio car decorated in its original 1963 gray scheme.

This Chicago North Western car displays two different yellow colors in a 1981 repaint job accomplished at CNW's shops in Clinton, Iowa. A CNW car in a 1978 repaint with raised placard COTS panels is also available.

Additional paint schemes available on this production run include Burlington Northern 1990 green repaint with a small BN logo, a CNW ex-Chicago Great Western car in a 1990 Zito scheme, and a Norfolk & Western version with a 1970s-era hamburger logo. Completing the selection of decorated models are two Minneapolis, Northfield & Southern Railway cars in slightly different schemes. An undecorated kit is also available. Tangent offers mixing for multiple car discounts on quantity purchases in increments of 6, 12, 36 and 48. For additional details, including ordering information, visit tangentscalemodels.com.

The TrainMaster is selling a kit that makes into the trackside freight house shown adjacent. Called Pete's Freight Dock, the HO scale kit is composed of three structures including an office,
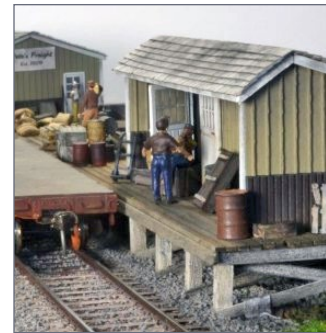
a loading dock, and a storage shed. There is considerable flexibility in how the three structures can be positioned but when placed in a straight line Pete's has a footprint of roughly 3.75 x 13-inches. Components for assembling the kit include laser-cut walls, windows and doors, roofing material, and scale stripwood. The instructions include photos and assembly templates. For additional information visit thetrainmaster.com.

Walthers has introduced a new 55-foot Evans 4780 cu. ft. triple bay covered hopper in its Proto series of HO scale rolling stock.

Features include individual grab irons, see-through etched metal walkways and end platforms. Road names include Farmers CO-OP Grain of Merna, Nebraska, UELX-Archer Daniels Midland; USLX-Comet Rice; USLX-FMC Chemical; and Boston & Maine.
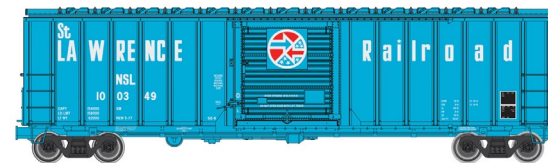
Coming to dealers next month is an HO scale 50-foot ACF exterior-post Plate B boxcar decorated for Moscow, Camden & San Augustine; Bangor & Aroostook, Central Vermont; Green Mountain Railroad; Hillsdale County; St. Lawrence Railroad (Pickens); and Railbox.

Walthers has announced plans to produce an HO scale version of Santa Fe's 1954 El Capitan passenger train. A production
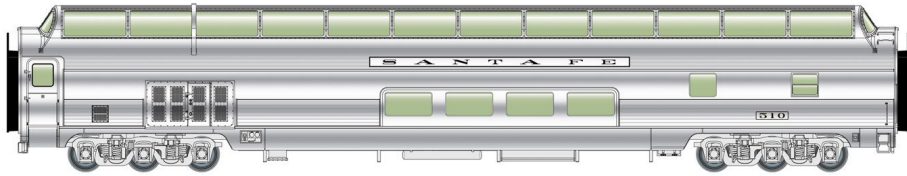
schedule with approximately one car being released each month will begin in December 2016 with a 73-foot Budd baggage car and an 85-foot Budd 46-seat coach. January will see the arrival of an 85-foot Pullman Standard baggage-dormitory car. An 85-foot P-S 13-seat lunch counter/20-seat diner is scheduled for February. It will be followed in March with an 85-foot Budd Big Dome bar lounge.

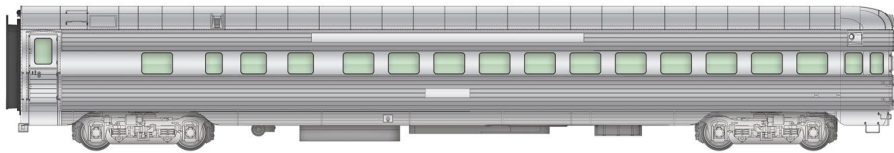Due in April is an all-new 85-foot P-S 42-seat coach-observation with a traditional round end.

April will also see the arrival of Santa Fe 300-class F7 diesel locomotives No. 300-305. The EMD A and A-B units will be decorated in Santa Fe's warbonnet scheme with etched stainless Farr grilles, an operating Mars light and a headlight mounted in the nose door. Additional details include skirted fuel tanks, a 36-inch dynamic brake fan, and two single chime air horns. Both DC and DCC models with SoundTraxx Tsunami sound decoder will be available. In addition to the standard release of individual cars,

two deluxe limited edition 8-car sets with sound, LED interior lighting, and more than 130 Preiser crew and passenger figures installed throughout the train will be available in a special presentation package. For complete details contact a dealer or visit walthers.com.

N SCALE PRODUCT NEWS
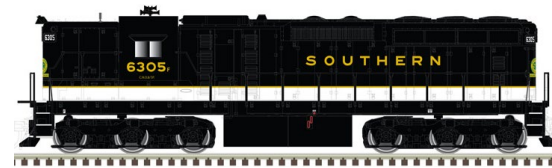
Atlas plans to release another production run of its N scale SD24 and SD26 diesel locomotives during the fourth quarter of this year. High-nose versions of the SD24 will be produced for CB&Q and Southern Railway.

SD24s with a low nose will be available for Santa Fe, Southern Pacific, Union Pacific, and Burlington Northern.

Road names for the SD26 will be Springfield Terminal Railroad and Santa Fe in blue and yellow with one-piece windshield. The ready-to-run models will be available for standard DC as well as with a factory-installed decoder for DCC operation.

Two versions of this 11,000 gallon tank car are scheduled for release during the third quarter of this year. The Atlas N scale

ready-to-run model will be available without a platform decorated for Gas-Oil Products and PGSX-Propane Gas Services.

Cars with platforms will be available for Pyrofax Gas, Gem Automatic Gas, Superior Propane, and Jefferson Chemical. Undecorated versions of both platform styles will be included in this production run.

Also due from Atlas during the third quarter is this HO scale AAR 70-ton triple-bay hopper car. Features of the Trainman series ready-to-run model include a removable load, Accumate couplers, and metal wheelsets. Road names will be Richmond, Fredericksburg & Potomac; PMCX; Burlington Northern; Canadian National; Santa Fe; Donner-Hanna Coke; Central of Georgia; and New Haven. Undecorated models will also be available. See atlasrr.com.

InterMountain Railway's November/ December schedule includes the release of N scale EMD FP7 and

F7B diesel locomotives. Road names will be Western Pacific, Alaska Railroad, Stone Mountain, RJ Corman, Wyoming & Colorado, Louisville & Nashville (original blue scheme and dark blue schemes), Southern Pacific (bloody nose and black widow schemes) and CTCUM-Commission de Transport de la Communauté Urbaine de Montreal. B units will be available as appropriate to the prototype road name. Both DC and DCC versions will be offered.

Also due in November/ December is a group of N scale 4650 cu. ft. triple-bay hopper cars. The ready-to-run models have etched metal roof walks and metal wheelsets. In addition to the ACFX-Sterling Salt car shown here, road names will include NCLX-Sclair, ACFX-French's, ACFX-American Borate, ACFX-Thiele, Burlington Northern, Cotton Belt, Southern Pacific, ATSF, and ECC International. Contact a dealer for more information or visit intermountain-railway.com.

Kato USA plans to release another production run its N scale 4-8-4 FEF-3 steam locomotive in September. The excursion paint scheme (above) will be reissued along with a new freight version in a matte finish with a darker smokebox and without the white wheel rims. The models will be available in standard DC analog as well as DCC equipped with ESU Loksound. Sound units must be ordered in advance.

Over the next few months Kato will release its N scale SD70ACe in popular road names with new road numbers. A Union Pacific locomotive with numbers 8444 and 8512 will be released sometime this month.

Scheduled for a June release are CSX numbers 4835 and 4850 in the Dark Future scheme. They will be followed in July with BNSF SD70ACe numbers 9376 and 9394 in the Swoosh paint scheme. The locomotives shown above are from a previous production run. Contact a dealer for complete details or visit katousa.com.

The latest offerings from **Micro-Trains Line** include this heavyweight combination Railway Post Office/baggage car decorated for Canadian Pacific as well as Milwaukee Road. Like the prototype, the N scale ready-to-run model rides on six-wheel trucks. Additional new Micro-Trains cars include a Baltimore & Ohio wood stock car with Murphy corrugated ends and arch bar trucks

(above), and a 51-foot Fruit Growers Express EMD Frigifrater reefer car.

This 50-foot Wabash Valley rib-side boxcar with short ladders and no running board is available now. Additional Micro-Trains releases include a D&RGW 39-foot aluminum tank car and a Great Northern 40-foot 1-1/2 door double-sheathed wood boxcar with fishbelly underframe and Andrews trucks. For information on all Micro-Trains products contact a dealer or visit micro-trains.com.

Trainworx reports its fourth quarter delivery schedule of N scale models includes Pullman Standard 85-foot flat cars decorated for Western Maryland and Trailer Train. Also a SOO Line version in three different paint schemes. Trainworx fourth quarter release includes 40-foot trailers decorated for Western Maryland, SeaLand, Katy, and Kroger. Also SOO Line trailers in two different schemes. InterMountain Railway is responsible for marketing Trainworx products. For additional information contact a dealer or visit intermountain-railway.com.

Walthers is planning to release a group of 48-foot well cars in November. The N scale ready-to-run models will accommodate 20, 40, and 48-foot containers. Road names will be Santa Fe, Canadian Pacific and TTX.

Additional cars that can be operated individually or in five-unit multiples will be available decorated for TTX, Canadian Pacific, and Florida East Coast. For additional information contact a dealer or visit walthers.com.

Z/Nn3 SCALE PRODUCT NEWS

Showcase Miniatures is selling a metal kit for an Nn3 scale Shay locomotive. The model is based on Mich-Cal Lumber Company's Class A 16-ton geared loco No. 2. The kit is designed to fit on a PowerMAX Z scale mechanism available separately from Searails. For additional information visit showcaseminiatures.net.

NEW DECALS, SIGNS AND FINISHING PRODUCTS

Mask Island Decals has issued new HO scale water-slide decals for a Chicago West Pullman & Southern 40-foot

boxcar. The set provides sufficient material to letter two cars. To order visit maskislanddecals.com.
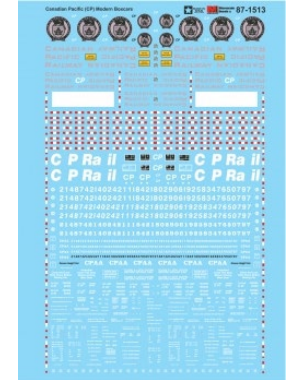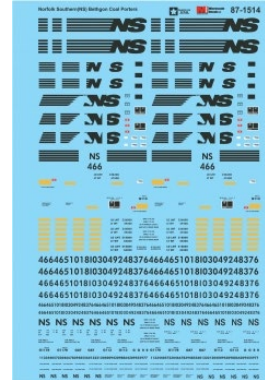
New HO and N scale water-slide decals from **Microscale** include Gulf, Mobile & Ohio boxcars; Norfolk Southern Bethgon Coal Porters; Northern Pacific passenger cars; and Fruit Growers Express refrigerator cars. New O scale decals have been released for New Haven hood diesels (both McGinnis and Alpert schemes), Pennsylvania Railroad steam locomotives, Norfolk Southern Bethgon Coal Porters, Burlington Route passenger cars, and Canadian Pacific/Canadien Pacifique hood diesels. Contact a dealer or visit microscale.com.

DISCLAIMER .....

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❗ BRIEFLY NOTED AT PRESS TIME ...

Kato USA has released a video that features a production sample of their soon-to-be-released EMD SD40-2 HO scale model decorated in Santa Fe's yellow and blue paint scheme. Features demonstrated in the video including alternating ditch lights. To watch the video go to youtu.be/watch?v=M4c5cTXJAOY.

Kato's parts department has released a small selection of N scale fluted-side passenger cars that have been held in reserve from a November 2000 production run. Both Wabash and CB&Q Silver series cars are available now in extremely limited quantities. The models are packaged in jewel cases and include replacement couplers to upgrade the models to Kato's current magnetic knuckle coupler design. For additional details including ordering instructions visit katousa.com/parts-catalog/information.html.

Showcase Miniatures is selling a liquid plastic welder that works on most material including metal, wood, ceramics, glass, and plastic. The bonding material is a crystal clear resin the consi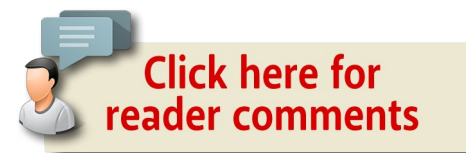stency of thick super glue that is applied to the joining surfaces of two objects. This resin can be manipulated with a toothpick or similar probe and, when done, a light is used to activate the resin and cause it to harden in a matter of seconds. It is commonly used in dental work. For more information visit showcaseminiatures.net/paint_tools/bondic.

Train Control Systems has released 11 new kits to convert a variety of popular locomotives to WOWSound DCC that includes the company's proprietary Keep-Alive circuitry. Each kit includes two circuit boards, a speaker, speaker housing, wire and installation instructions. For more information including a cross reference of WOWKits suitable for 58 popular Athearn, Atlas and Kato HO scale locomotives visit tcsdcc.com/Customer_Content/Products/WOWKits/Diesel.

Walthers has scheduled a limited run of Proto series GP35-2 Phase II locomotives for release in late September. The HO scale ready-to-run model will be available decorated for Santa Fe, Burlington Northern, Chesapeake & Ohio, Erie Lackawanna, Milwaukee Road, and Southern Pacific. Contact a dealer or visit walthers.com for more information. ◼

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May 2016

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

CANADA, NEW BRUNSWICK, SAINT JOHN, May 19-22, Port City Rails 2016 Model Railroad Convention & Show, sponsored by Saint John Society of Model Railroaders, at Howard Johnson Fort Howe Plaza & Convention Center, 10 Portland Street. Info at portcityrails2016.org.

CANADA, ONTARIO, OTTAWA, May 6-8, NMRA Algonquin Turn, Niagara Frontier Regional Convention, at Algonquin College. Info at algonquinturn.ca.

CALIFORNIA, NORWALK, May 14, 15 and 17, Open House at California Southern Model Railroad Club, 12140 Firestone Boulevard. Info at californiasouthern.org.

CALIFORNIA, SAN PEDRO, May 14-15, Open House & Swap Meet sponsored by Belmont Shore Railroad Club, at 3601 South Gaffey Street, Building 824. Info at belmontshorerr.com.

CALIFORNIA, SANTA CLARA, May 5-7, 26th Annual O Scale West and 11th Annual S West meets, at Hyatt Regency Hotel. Info at oscalewest.com.

COLORADO, COLORADO SPRINGS, May 14, Train Show & Swap Meet sponsored by NMRA Pikes Peak Division, at Trinity United Methodist Church Gym, 701 N. 20th Street. Info at ppd-nmra.com/#coming.

LOUISIANA, METAIRIE, May 14, Open House in celebration of National Train Day, sponsored by Crescent City Model Railroad Club, 601 North Lester Avenue. Info at ccmrc.com.

MINNESOTA, SAINT PAUL, May 7, Hobby Show & Sale sponsored by Twin City Model Railroad Museum, at Minnesota State Fairgrounds, Education Building. Info at tcmrm.org/visit/exhibits-events/tcmrm-hobby-show-sale.

MISSOURI, MARCELINE, May 14, Model Train & Railroad Memorabilia Show, at Walsworth Community Center, 124 East Ritchie. Info at walsworthcommunitycenter.com/ModelTrainShow.php.

NORTH CAROLINA, SPENCER, May 13-15, Annual Convention, sponsored by Southern Railway Historical Association. Info at srha.net.

OHIO, HILLARD, May 13-15, 8th Annual Ohio N Scale Weekend, sponsored by Central Ohio Ntrak, at Franklin County Fairgrounds. Info at centralohiontrak.org.

PENNSYLVANIA, KIMBERTON, May 21, Mid Atlantic Narrow Gauge Meet, at Kimberton County Fire Hall. Info at midatlanticng.org.

VIRGINIA, FISHERSVILLE, May 1, 30th Annual Shenandoah Valley Model Train & Railroading Show, sponsored by Augusta County Model Railroad Club, at Augusta Expo, 277 Expo Road. Info at acmrrc.org. acmrrc.org/%20.

June 2016

CANADA, BRITISH COLUMBIA, SALMON ARM, June 15-19, Selkirk Express NMRA Pacific Northwest Region Annual Convention & Train Show. HQ at Prestige Harbourfront Resort, 251 Harbourfront Drive NE. Show at Shaw Centre, 2600 10th Avenue NE. Info at selkirkexpress2016.ca.

CANADA, NOVA SCOTIA, TRURO, June 16, Maritime Prototype Modellers Meet, at Recreation Centre, 40 Douglas Street. Info at facebook.com/MaritimePrototypeModellers.

ALABAMA, HUNTSVILLE, June 10-11, NMRA Southeastern Region Convention, Rocket City Rails, at Huntsville Marriott, 5 Tranquility Base. Info at midsouthnmra.org/convention.htm.

CALIFORNIA, RICHMOND, June 18, Bay Area Prototype Modelers Meet, at St. David's School Hall, 871 Sonoma Street. Info at bayareaprototypemodelers.net.

CONNECTICUT, ENFIELD, June 3-4, New England/Northeast Prototype Modelers Meet, at Holiday Inn, 1 Bright Meadow Boulevard. Info at neprototypemeet.com.

KANSAS, WICHITA, June 22-26, Santa Fe Railroad Historical & Modeling Society 36th Annual Convention, at Wichita Marriott East, 9100 Corporate Hills Dr. Info at atsfrr.com/convention/2016%20Wichita/Index.htm.

IOWA, COUNCIL BLUFFS, June 2-5, NMRA Mid-Continent Region Convention, at Hilton Garden Inn, 2701 Mid America Drive. Info at whd.mcor-nmra.org/convention/information/hotels.htm.

NEW JERSEY, NEW BRUNSWICK, June 4, Mass Transit & Trolley Modelers' Convention presented by the New York City Model Transit Association and The Shore Line Trolley Museum, at Rutgers Student Center, 126 College Avenue. Info at nycmodeltransit.org/2016details.htm.

TENNESSEE, JOHNSON CITY, June 3-4, George L. Carter Railroad Museum Train Show, at East Tennessee State University, Memorial Center Mini-Dome, 1081 John Robert Bell Drive. Info from Mark Woomer at markwoo1969@hotmail.com.

TEXAS, ARLINGTON, June 22-25, NMRA Lone Star Region Daylight Express Convention, at Sheraton Arlington Hotel. Info at mainlinerails.com.

WISCONSIN, WAUPACA, June 18-19, 27th Annual Strawberry Fest Model Railroad Show & Model Contest, sponsored by Waupaca Area Model Railroaders, at Waupaca Recreation Center, 407 School Street. Info at wamrltd.com.

Future 2016, by location

CANADA, ONTARIO, BRAMPTON, October 1-2, Model Railway Show, at Brampton Fair Grounds, 12942 Heart Lake Road. Info at bramptonmodelrailwayshow.com.

CALIFORNIA, CULVER CITY, September 21-25, NMRA Pacific Southwest Region LA Junction Convention, at Double Tree Hotel LA Westside, 6161 West Centinela Avenue. Info at psrconvention.org/lajunction/hotels.html.

CALIFORNIA, LOS ANGELES, September 25, Self-Guided Tour of area layouts. Info at groups.yahoo.com/neo/groups/Model_Railroads_Of_Southern_California/info.

CALIFORNIA, SAN PEDRO, October 15-16, Open House & Swap Meet, sponsored by Belmont Shore Railroad Club, at 3601 South Gaffey Street, Building 824. Info at belmontshorerr.com.

FLORIDA, THE VILLAGES, August 10-21, Summer Train Expo, at Savannah Center. Info at villagerailclubs.blogspot.com.

ILLINOIS, COLLINSVILLE (metro St Louis), August 12-13, 10th Annual St. Louis Railroad Prototype Modeler's Meet, hosted by John Golden, Lonnie Bathurst, Dave Roeder, and Dan Kohlberg. Co-sponsored by NMRA Gateway Divison, at Gateway Convention Center. Info at icg.home.mindspring.com/rpm.

ILLINOIS, CHICAGO, October 1-2, Brass Expo, a juried show limited to pre-submitted items including brass models and items relevant to brass models. At The Westin Hotel (Chicago North Shore), 601 N. Milwaukee Ave. Wheeling, IL 60090. Info at bras-sexpo.com.

ILLINOIS, LISLE, October 20-22, RPM Chicagoland (formerly Naperville RPM), hosted by Mike Skibbe, at Sheraton Hotel. Info at rpmconference.com.

INDIANA, INDIANAPOLIS, July 3-10, NMRA National Convention and National Train Show. HQ at Westin Hotel, 50 South Capitol Avenue. Info at nmra2016.org.

INDIANA, INDIANAPOLIS, July 8-10, NMRA National Train Show, at Indiana Convention Center,100 South Capitol Avenue. Info at nationaltrainshow.org.

INDIANA, MERRILLVILLE, Aug 11-14, Steel Mill Modelers SIG Meet, at Hilton Garden Inn, 7775 Mississippi Street. Membership in SMMSIG is required to attend. Info at smmsig.org.

MAINE, AUGUSTA, Sept. 7-10, 36th National Narrow Gauge Convention. Info at nngc2016.org.

MARYLAND, TIMONIUM, July 9-10, Great Scale Model Train & Railroad Collectors Shows at Maryland State Fair, 2200 York Road. Info at gsmts.com.

MISSOURI, JEFFERSON CITY, October 6-9, Missouri Pacific Historical Society Annual Meeting, includes modeling clinics and swap meet. Info at mopac.org/corporate-history/73-missouri-pacific-railroad.

NORTH CAROLINA, DURHAM, October 20-23, Mid-Eastern Region Fall Convention, sponsored by NMRA Carolina Piedmont Division, at Marriott at Research Triangle Park, 4700 Guardian Drive. Info at mer2016.org.

VIRGINIA, VIRGINIA BEACH, October 8-9, 27th Annual Train Show & Sale, at Virginia Beach Convention Center, 1000 19th Street, sponsored by Tidewater Division Model Railroaders. Info at nmra-mer-tidewater.org.

VIRGINIA, FREDERICKSBURG, September 23-24, Mid-Atlantic Prototype Modelers Meet, at Wingate by Wyndham Hotel, 20 Sanford Drive. Info at marpm.org.
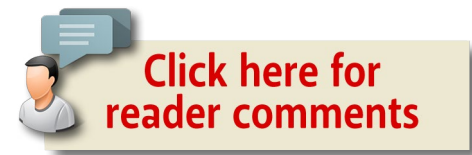
Future 2017 and beyond, by location

AUSTRALIA, VICTORIA, GEELONG, April 14-16, 2017, 13th Annual Australian Narrow Gauge Convention. Info at austnar-rowgaugeconvention.com.

COLORADO, DENVER, August 30-September 2, 2017, National Narrow Gauge Convention, at Marriott Denver Tech Center Hotel.

FLORIDA, ORLANDO, July 30-Aug 5, 2017, NMRA National Convention.

MISSOURI, KANSAS CITY, August 5-12, 2018, NMRA National Convention. ■

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WHAT! NO LAYOUT?

THERE SEEMS TO BE A COMMON perception in our hobby that to be an active model railroader, you *must* have a layout or belong to a club where you can run your equipment. Is this really true?

More than a few today to bemoan our hobby as slowly dying[1], citing – among other things – the space requirements for a layout.

You need a fair amount of space to have an operational layout, correct? And then there's all the costs involved: lumber, track, turnouts, DCC, locomotives, rolling stock … the list goes on.

That kind of thinking ignores what I have observed from my seat here at MRH. The first example is the Caldwell Blvd. diorama by Gary Christensen at mrhpub.com/2015-11-nov/port. The most recent example is Jack Burgess' Edendale Creek diorama, with part one at

▶ STEPPING OUTSIDE THE BOX WITH A CONTRARY VIEW

mrhpub.com/2016-04-apr/online and the second part this month. Both are non-operating dioramas – and both are MRH cover stories!

Jack Burgess is known for his Yosemite Valley layout, and Gary Christensen is well known for his weathering. Gary does not have a layout and, from what I have heard, has no desire to build one. Is Jack a model railroader and Gary not one? I think that it's fair to say Gary is every bit as much a model railroader as Jack.

What both Gary and Jack demonstrate to us is that you can be a model railroader with or without a layout (or without belonging to a club – when I say layout from now on, just assume layout *or* club).

Military modelers do not have operating models. But many build beautiful dioramas creating mini-scenes. No one will say these guys are not modelers. The same can be said for those who model aircraft, cars, boats, ships and so on. We can thoroughly study and enjoy such static models. Why can't the same be true for model railroading?

I think it's a misconception to think someone can't be a model railroader because they don't have the time or space for a layout, or that they don't want one. The examples I have mentioned really show that these limitations need not prevent you from being a model railroader.

Maybe we should expand our view of what a model railroader is: You don't need a layout. What you need is a passion for railroads and modeling them – *and that's it.* ☑

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1. We at MRH don't agree the hobby is dying. In fact, a number of empirical indicators say the hobby is starting to grow again, and may even enter a new golden era in the next two decades. This is not just a self-serving Pollyanna viewpoint. Be assured we have hard data to back up this notion. We do agree the hobby *is changing,* unquestionably. We feel it's a fallacy to consider as normal the '50s and '60s when train sets were a fad toy. When something is a fad, that represents a skewed public interest, so it's a mistake to use such a time period as what normal looks like for the model railroading hobby. More on this in a future issue of MRH.

DERAILMENTS

BUSTER KEATON PERFORMING STUNTS IN THE GENERAL

In the Buster Keaton silent movie "The General," he wages a one-man battle to recover his locomotive after Civil War spies steal it in 1862. This short video shows a few of Buster Keaton's witty and daring locomotive stunts from The General.

▶ BIZARRE FACTS AND HUMOR (SUPPOSEDLY)

YOU MIGHT BE A MODEL RAILROADER IF ...

- You visit the hobby shop and wind up answering questions for the customers.

- You refuse to buy a quality boxcar that's deeply discounted because your prototype had fourteen ribs and the model has sixteen.

- You grumble through the entire family vacation because there wasn't time to do a little railfanning.

- You try to justify bringing home a new freight car because it's your wife's favorite color. ■

$ GET PAID ...

If you're the first to submit a bit of good humor or bizarre facts and we use it, it's worth $25! Just send to derailments@mrhmag.com ■

Coming next issue ...

- Bob Rivard models Soo Line TOFC flat cars
- Bob Chase's B&O layout
- A better cutting straightedge
- Kitbashing a boxcab diesel
- Another "One Module" Challenge winning layout design
- And lots, *lots* more!

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