

Model Railroad Hobbyist magazine™

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Edition

March 2012

HAVING FUN WITH TRAINS

Don Spiro's



Operating Semaphores!

Let Duncan McRee show you how

- DCC decoders and LED lighting
- Build an audible short detector
- Building peninsula benchwork
- Modeling the N-C-O railroad
- First ops on the Willoughby Line
and lots more, inside ...





Front Cover: Duncan McRee shows how he animates SP lower quadrant semaphores using inexpensive model airplane servos on his HO scale Tam Valley Southern Pacific flavored layout. Duncan is the founder of the Tam Valley Depot, a vendor of various electronic items for layouts.

ISSN 2152-7423

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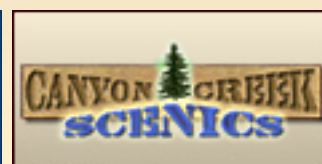
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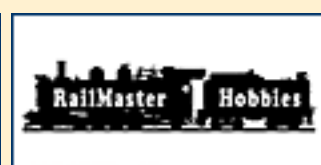
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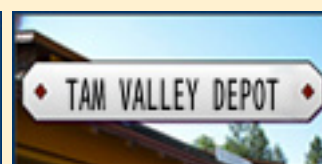
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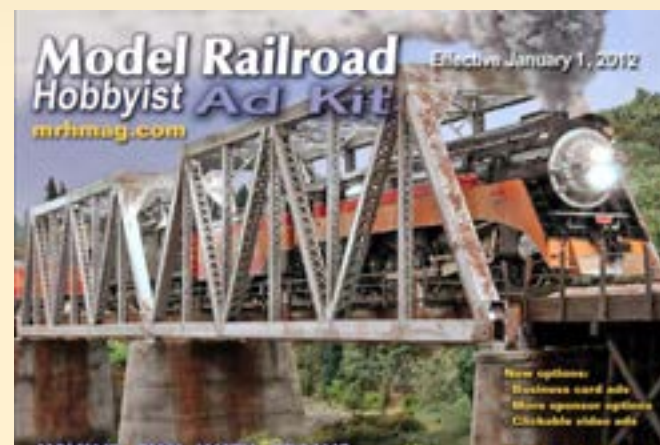
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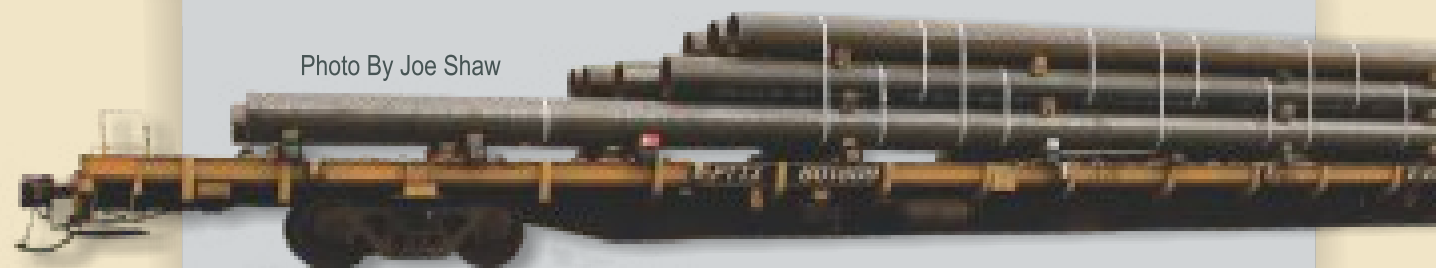
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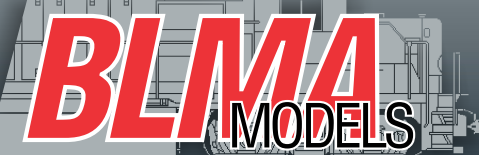
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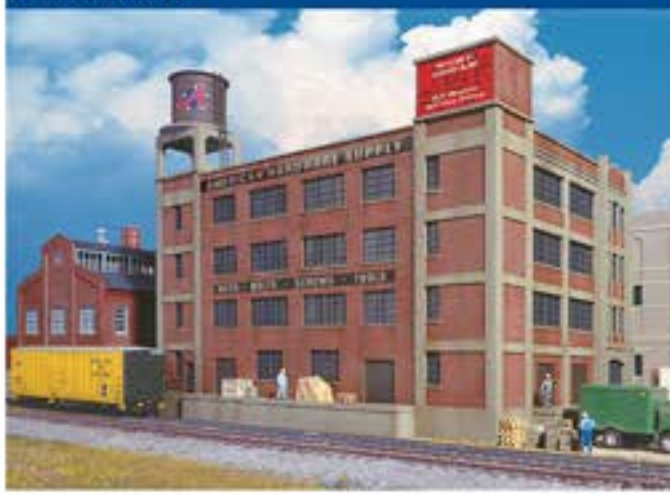
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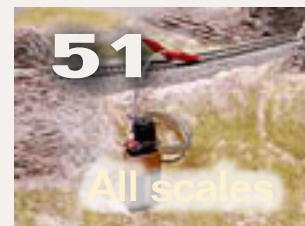


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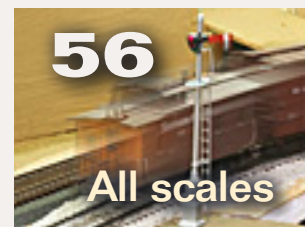


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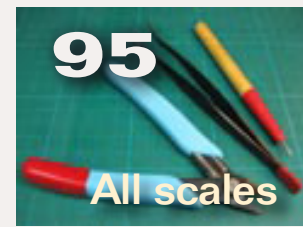


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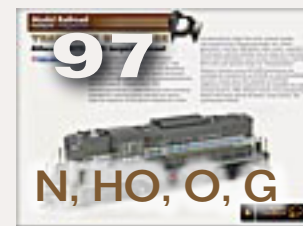


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About the Editor



Charlie Comstock has been a regular columnist, author, and editor of *Model Railroad Hobbyist Magazine* since its inception.

To learn more about Charlie, [click here](#).

EDITOR'S SOAPBOX: Lights, Camera, Action ...

Sharing your layout with people who aren't there ...



Most model railroaders have friends or at least would like to have them. Sometimes friends are local, sometimes they're far away (such as Bob whom you met in Buffalo at the Regional Convention). Sometimes we've yet to meet some friends – I'm talking about your good buddies on the MRH forum, of course!

Most model railroaders enjoy sharing what they've been up to in the train room with their friends (or often with anyone who will listen to them). The easiest way to share is invite them to come visit, or take matters into your own hands and go visit them.

While that works well if your friends are local, it's less convenient if they live thousands of miles away on the opposite edge of a continent. Or on a different continent all together! How's a poor modeler supposed to keep in touch?

In the not too distant past, you didn't. When travel was by horseback, we tended to have a small circle of friends. It was a big deal to make a trip of 50 miles. Of course, not too many of us had model

railroads in those days! If we had to communicate with someone far away, we put pen to paper and trusted in the pony express.

All that changed with the advent of electronic media. Now with the Internet we communicate instantly by email. Now Peter in Peoria can tell Nate in New Orleans all about that new spur track he's just installed behind the warehouse next to that grove of trees he "planted" two months ago, and how using a different color ballast really helped to differentiate the spur from the mainline passing nearby.

Wait a minute! You're still trying to communicate images with words. Sometime in the last century, photography was made available to the masses. And communication between modelers was never the same.

It didn't take long before modelers were snapping shots of their layouts and mailing them to friends who had moved far away (and with the road system providing easy transportation more and more of us have done just that).

Those early Brownie cameras and their black and white snapshots gave way to color slide film, balanced for tungsten lighting, and advanced cameras with good optics. Train magazines started featuring color photos

and suddenly you didn't need to wonder anymore exactly which color Fred in Fresno was using for his mainline ballast. It was there in Kodachrome.

Then the world changed again. Film was out and digital was in. For a couple hundred dollars you can now buy a camera that runs rings around those old Brownies and the results are available quicker than even the fastest Polaroid could deliver. For a couple hundred more, a starter DSLR kit lets you get serious with photons.

And even better, you could attach them to an email, sending them across the country in the blink of an eye, so Bill in Buffalo can admire that trestle you just finished.

Then things changed again when Internet forums appeared where friends could share train experiences with each other. Interactively!

Hey, here's an idea! Why not head into your train room, snap some photos of anything new and share them with several thousand of your closest friends on the [MRH forum](#)?

Who knows? You might even discover a new friend just around the corner from where you live, but whom you never knew was there!



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Notes from the

MRH STAFF

What's a blog, Lew Matt resigns, Wanted: Layout tour articles ...



What's a blog?

Unless you're one of the more web hip modelers, you may not know what a blog is.



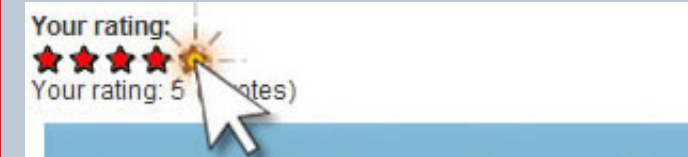
Figure 1: Check out the blogs on the MRH web site for some great modeler layout journals.

The word blog is short for weBLOG, and is nothing more than a public personal diary that allows others to post comments.

MRH has a significant blog section on the web site, and if you're not familiar with it, you should be.

Many of the MRH web site regulars have their own blogs (you can start a blog too – more on that in a bit), and there's some great content there. Go to our website and check out the Recent blog posts section on the right to get a sampling of this great content!

If you want to create your own blog where you journal your hobby



February's ratings

The five top-rated articles in the **February 2012** issue of MRH are:

- 4.7 Using Micro LEDs
- 4.7 Making realistic winter trees
- 4.5 Building a backdrop (22 stories up)
- 4.5 Wired decoder installation, pt 2
- 4.5 First Look: Vector Cut
- Issue overall: 4.7

Please rate the articles!

Click the reader feedback button on each article and select the star rating you think each article deserves. **Thank you!**

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pursuits, we encourage it. To create a blog just click the blog menu as shown in figure 1, then click the “Create a new blog entry” link at the top left area of the blog listing in the main window.

You can write whatever you want (similar to a forum post), but the focus should be more about your current modeling projects. Others can comment on your blog entry, not unlike how a forum thread works.

Think “show and tell” when you’re composing your blog entries. If possible, post photos and even videos. The more showing you can add in with the telling, the better!

For video, upload your video clips to YouTube, then post the link to the YouTube video on your blog. The MRH website will automatically turn a YouTube link in a new post into an inline video ready to watch right on the MRH website!

So c’mon, all you modelers out there! Share what you’re doing in the hobby with the rest of us on an MRH blog.

Lew Matt resigns

Unfortunately, as you may already know, Lew Matt, our Narrow Gauge and Short Line columnist, has been dealing with some serious health issues. Because of them, Lew has reluctantly decided step down from his role as the Lite and Narrow columnist.

We’re sorry to see Lew leave the MRH staff – he’s always been an enthusiastic supporter of the hobby and the MRH free-to-the-readers business model. Plus Lew’s always been full of great ideas for articles. But first things first. Lew needs to take time now to focus on other more important matters, which we fully understand and support.

We wish Lew well, and we’re keeping him in our prayers.

Wanted: Layout tour articles

We’re looking for layout tour articles. If you have a great layout in your basement (or a next door neighbor with a great layout) and you’re good with a camera and camcorder we’d like to hear from you.

Be warned though, layout tours take a lot of work. We need good to great photography and video, and you’ll need to document the layout’s trackplan with sufficient detail and enough dimensions to produce a near-to-scale trackplan diagram. Unless you’re willing to undertake a huge amount of work don’t tackle a huge layout.

If you’re still interested use our Article Query Form (model-railroad-hobbyist.com/contact/Article_query) to contact us.

Track plan contest

The MRH staff has been kicking around another fun idea – a track planning contest!



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The prizes? How about the possibility of seeing your winning plan in the pages of MRH – and more ...

We'll be announcing more details next month.

Need a Grand Rapids helper

MRH will be attending the Grand Rails NMRA national convention in Grand Rapids, Michigan this summer (July 29, to Aug 4). We like to have local help on hand for the following:

- Receive packages from MRH headquarters before the convention.

- Help set up the MRH booth on Thursday.
- Help staff the MRH booth Friday, Saturday, and Sunday.
- Make emergency trips to the local Staples for supplies. We assume you'll know how to get there because you're local.
- Help tear down the MRH booth Sunday evening.
- Possibly ferry people between the convention hotel and the airport.

You'll receive a free pass to the National Train Show, a free MRH golf shirt (to wear in the booth), and the undying gratitude of the MRH staff

who would otherwise be lost in a city far from home.

You'll need to have your own vehicle, preferably one large enough to haul some bulky boxes containing items for the train show booth.

Using our website help menu

Have you ever noticed the MRH website's Help menu? It's located at the top of most website pages just to the left of the Authors menu.

The Help menu has four options:

- Frequently asked questions
- How to read the magazine
- MRH posting guidelines
- Contact us

Frequently asked questions (often abbreviated as FAQ) is a list of questions we've heard lots of times. Instead of answering them over and over, we created a list of the questions and our responses.

Chances are if you have a question about the MRH website or magazine, it's been asked before. Take a little time to check out the FAQ. It's organized by topic making it easier to find answers.

If you're reading this, it's likely you've already figured out how to read the magazine. But sometimes even old dogs (or readers) can learn new tricks! Check this area for suggestions to improve your reading experience.

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MRH posting guidelines cover appropriate behavior on the MRH forum. The forum is intended to be a place where readers can exchange information and opinions regarding model railroading. Keep it civil. Keep it G rated. Keep it train oriented.

Subscribers! Update your email

If you're a MRH subscriber but haven't been receiving our weekly update emails you could be missing out on some great stuff.

If you recently changed your email address did you remember to update your MRH user account?

If so, go to mrhmag.com. Log in and look along the right hand side of the page for "My account". Click "My account" then click "Edit" (in the account menu bar).

Change your email address (double checking to ensure it's correct!) and click the blue with white text "SAVE" button at the bottom of the account editing page.

Now, when the next issue is ready, you'll get notified again!

Article submission boo-boos

A gentle reminder to you authors out there. Before you submit an article to MRH (model-railroad-hobbyist.com/author/submit_article), have you:

■ Provided your full contact information? We need your full name, snail

mail address and email address.

■ Provided a descriptive article title? Titles such as "my article" don't tell us anything when we see it in our article database. "Building a N scale wood trestle" do.

■ Provided a meaningful description of your article in the comments field. For example: "How to use a static grass gun to add hair to HO scale people. Includes video demonstrating the process and showing the newly hairy women showing off for their trackside men."

■ Use a zip (compressed archive) tool such as [WinZip](#) or the free [ZipCreator](#) tool to package all the article files into a single zip archive. A zip file works like a shipping container – instead of sending us 37 different files any of which could get lost, you ship a single zip file containing all the article files. As a bonus, the zip utilities compress the size of the stuff you're shipping. When we receive it the compression is reversed restoring all files to their original condition.

■ Make sure all the photos and diagrams for your article have captions and check their size. We prefer photos around 2000x1500 pixels. They don't need to be exactly this size – close is good.

■ If some of your illustrations need text labels or arrows, send two versions of the photo – one with labels and the bare photo. We'll add the labels during paste up and make them look great!

In this issue

The cover story in March is Duncan McRee showing how to use inexpensive model airplane R/C servos to actuate a three-position semaphore – something not easily done with stall-motor actuators.

Thomas Klimoski demonstrates some super realistic weathering for beaten-up scrap metal service gondolas.

Guy Cantwell describes how he prepared for the first op sessions on his HO scale Willoughby Line layout.

The N-C-O, Nevada, California, and Oregon article shows a cool, modern-day layout you can model.

Bruce Petrarca continues his great series of DCC columns with advice on using LEDs with DCC decoders.

Marty McGuirk is back with another Getting Real column. This time he uses full-size mockups to plan the final track work at White River Junction on his Southern New England layout.

The second appearance of the new MRH Trackside Showcase feature displays five more exciting new products.

And lots more!



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Questions, Answers and Tips



QUESTIONS AND ANSWERS

Q: For DCC decoder installations, do I really have to use expensive Kapton tape instead of black electrical tape from the hardware store? What's the difference?

A: The difference? DuPont's Kapton film is used in the outside layer of space suits; electrical tape is not.

Kapton tapes are made from Kapton® polyimide film with silicon adhesive. They are compatible with a wide temperature range from -269°C (-452°F) to 400°C (752°F). That may be overkill for a model train environment. The adhesive peels off cleanly. There is one caution: Kapton can wear through with rubbing from braided wire or

other rough or sharp objects, so some care has to be taken.

Electrical tape costs a lot less. A 66' roll of 3/4" 3M tape sells for less than a dollar. \$8 will buy a 36" roll of 3/8" wide Kapton tape.

Top quality electrical tape – like Scotch® Super 33+ Premium Vinyl Electrical Tape from 3M – will have a non-gummy adhesive, and the vinyl will stretch over irregularities. It does not have the high heat resistance of Kapton and will melt at 176°F. Other makers' tapes melt at even lower temperatures, and their adhesives can leave a gummy mess inside your locomotive.

In general, electrical tape is thicker than Kapton tape, though the

thicknesses and differences are measured in mils (a thousandth of an inch).

— MRH

Q: I'm just starting out in model railroading and a how-to book recommends I use Homasote under the track. The clerk at the big-box home store looked at me like I'm from Mars. What is Homasote, why do I need it, and where do I get it?

A: Homasote became part of the model railroading tool kit in the days when hand-laying was the only way to have decent-looking track. The tightly compressed paperboard holds spikes well and is dimensionally stable when handled correctly. It can be cut with a fine-toothed saw blade (generating a lot of fluffy gray dust) or a sharp knife.

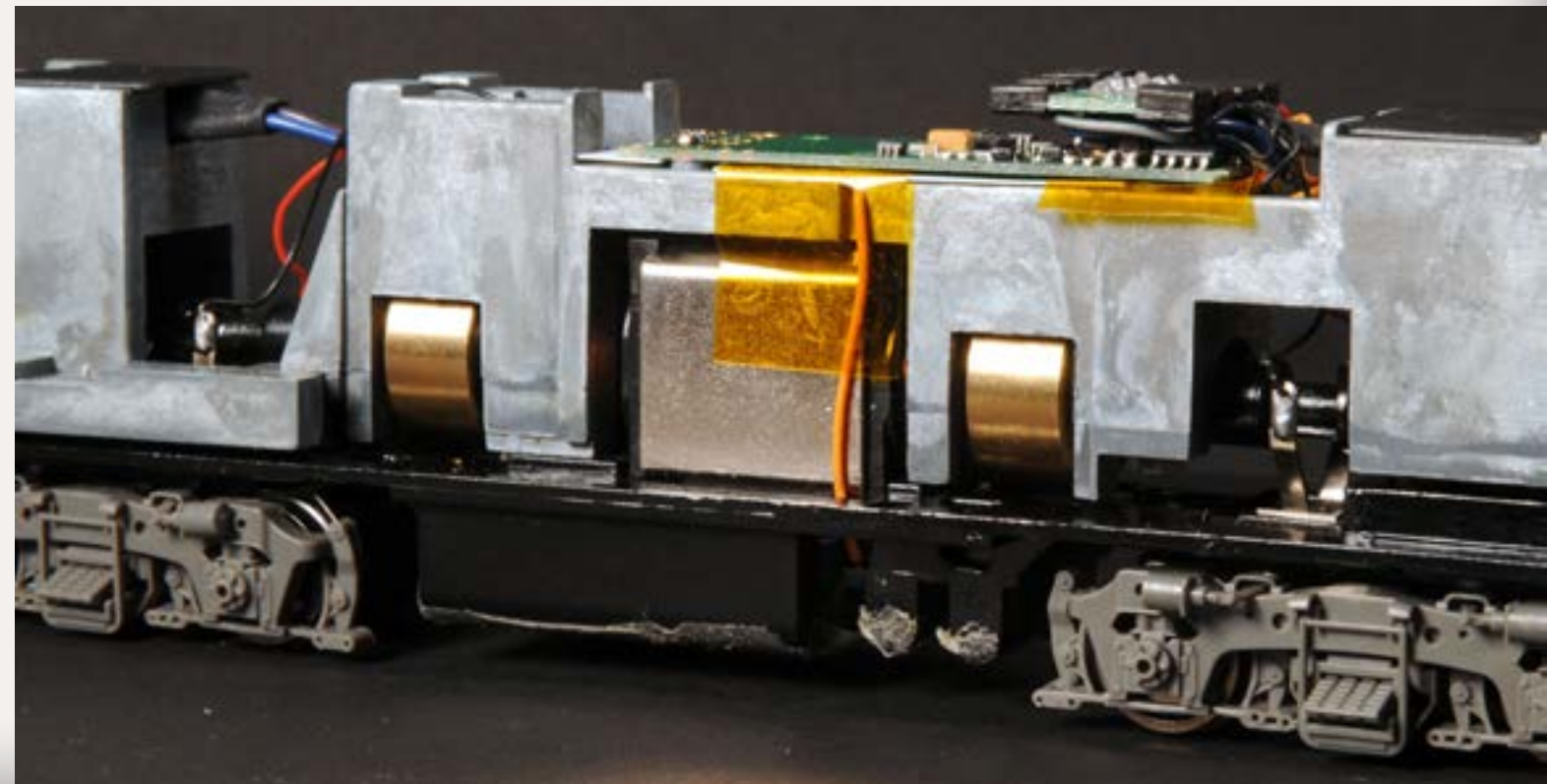
One of its main commercial uses is for sound-deadening, and Homasote



Figure 2: Recycled newspapers and cardboard are ground up, saturated, and pressed to form Homasote, a building board product popular for quiet roadbeds on model railroad.

does result in a quiet-running model railroad. The Homasote Company, based in New Jersey, is more than 100 years old and makes several products – the one modelers use is 440 SoundBarrier and is usually bought

Figure 1: Gold-yellow transparent Kapton tape is ideal for trapping wires and insulating DCC decoder installations, as on this Proto 2000 GP9 chassis.



in the 1/2" thickness. It comes in 4x8-foot sheets.

There are complaints about Homasote not being very uniform in thickness, which can cause problems when trying to match roadbed end to end. Sheets bought at the same time usually aren't a problem, and minor irregularities can be sanded. Rough handling can put low spots in the surface, as well.

For modelers who can't find a nearby source or who don't want to mess with cutting (literally – cutting this stuff makes lots of nasty gray sawdust), California Roadbed Company www.calroadbed.com cuts and mills Homasote into roadbed for several scales. It has a very useful FAQ at www.calroadbed.com/site/890800/page/479102. The company is just getting back into production, so

direct inquiries may not be answered immediately.

To find Homasote retailers, check www.homasote.com/WhereToBuy/Default.aspx.

— MRH

Q: This is a general inquiry about successful techniques for drilling hundreds of those #78-#80 sized holes for grab irons or other tiny details. What do you use to accomplish this other than a pin vise? – from MRH forum use "Kirkifer"

A: Read the whole discussion at model-railroad-hobbyist.com/node/6753 and look for Arved Grass's comments for a good checklist for motorized drilling. Here are the pin vise basics:

A pin vise is excellent for this job because it's small enough to see the

Figure 3: For drilling, have a selection of drill bits and holders available, including duplicates of the most-frequently used drill sizes.



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work, you have direct finger-tip feedback, and it's relatively inexpensive. Most motorized tools are too fast for plastic – they melt the holes and overheat the drills. I have a battery-powered Dremel Mini-Mite that does 5,000 rpm on its slow setting, and that is too fast. Something like 100-200 rpm might work.

Locating the hole is half the battle. One poster recommended chucking a pin in a pin vise, but the pins I get with new shirts these days are soft coated brass that won't hold a point. I use needles from the Dollar Store instead. Use the needle to dimple the hole's location so the drill point won't wander. If you're working in metal, a

center punch and light tap of a hammer do the job.

Trying to drill holes by holding the work in one hand and the drill in another is a recipe for sloppy holes and broken bits. Clamp the freight car or whatever in place, use a drill stand, or both. A small vise with a ball-joint mount doesn't cost any more than a ready-to-run freight car.

Use beeswax, bar soap, or another lubricant to keep the drill from "sticking". Dragging the drill tip across a cake of hard beeswax adds enough slippery stuff to help. Get beeswax from the hardware, sewing, art supply or craft store. Hold the pin vise in your finger-tips, not your whole hand,

to eliminate the wobbly motion that breaks drills. A sharp drill will cut with very little pressure.

Mark out the locations of the holes you want before you start drilling, and use templates or jigs to get the hole sites lined up and consistent. If you have a scale drawing, scan it and make a paper template to tape to the work. BLMA www.blmamodels.com sells drilling templates for locomotive grab irons. Look under "locomotive details."

Start out small, with a good-quality brand-name pin vise and a set of small drills. If you buy drills with an indexed case or stand, it's easier to keep track of sizes, and you can buy

multiple replacements of the drills you break or wear out most often.

— Joe Brugger

Q: Despite cleaning my track frequently, wiping with a clean cloth still shows black crud. What is it, and why can't I get rid of it?

A: Dirty track is one of the great ongoing issues in the hobby and has produced dozens of opinions and solutions. People notice dirty track almost immediately these days because it causes "drop-outs" on sound-equipped locomotives. For the latest go-round, read model-railroad-hobbyist.com/node/3229 at the MRH forum.

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The components of rail gunk (or “mung,” according to the current thread) seem to have changed over the years. One analysis in the 1960s found oil and grease, human skin cells and plastics used in railcar wheels. A new analysis mentioned in the thread discounts the presence of worn-away plastic and doesn’t mention household dust.

“LkandO” sent a sample of dirty rail to a scientist friend for testing. Here’s what he reported:

“The black crud is near 100% pure nickel oxide. Nickel (III) oxide to be specific. Saw the spectrograph output proving it. It is the natural oxidation of the nickel in the silver nickel plating on the track. Interestingly enough, it is deposited in such a manner as to suggest it was formed during an electrical arc. When viewed under extreme magnification it looks like random dots rather than a continuous film.

“The metallurgist explained to me it is likely microscopic irregularities on the tread of locomotive wheels and track face and/or common dust on the track is causing momentary loss of electrical contact resulting in nanosecond duration, nanometer long electrical arcs which cause the nickel to oxidize far faster than would naturally occur. One could never see this with the naked eye they would be so small. He is only guessing based on observation of the deposits but who am I to question his analysis?”

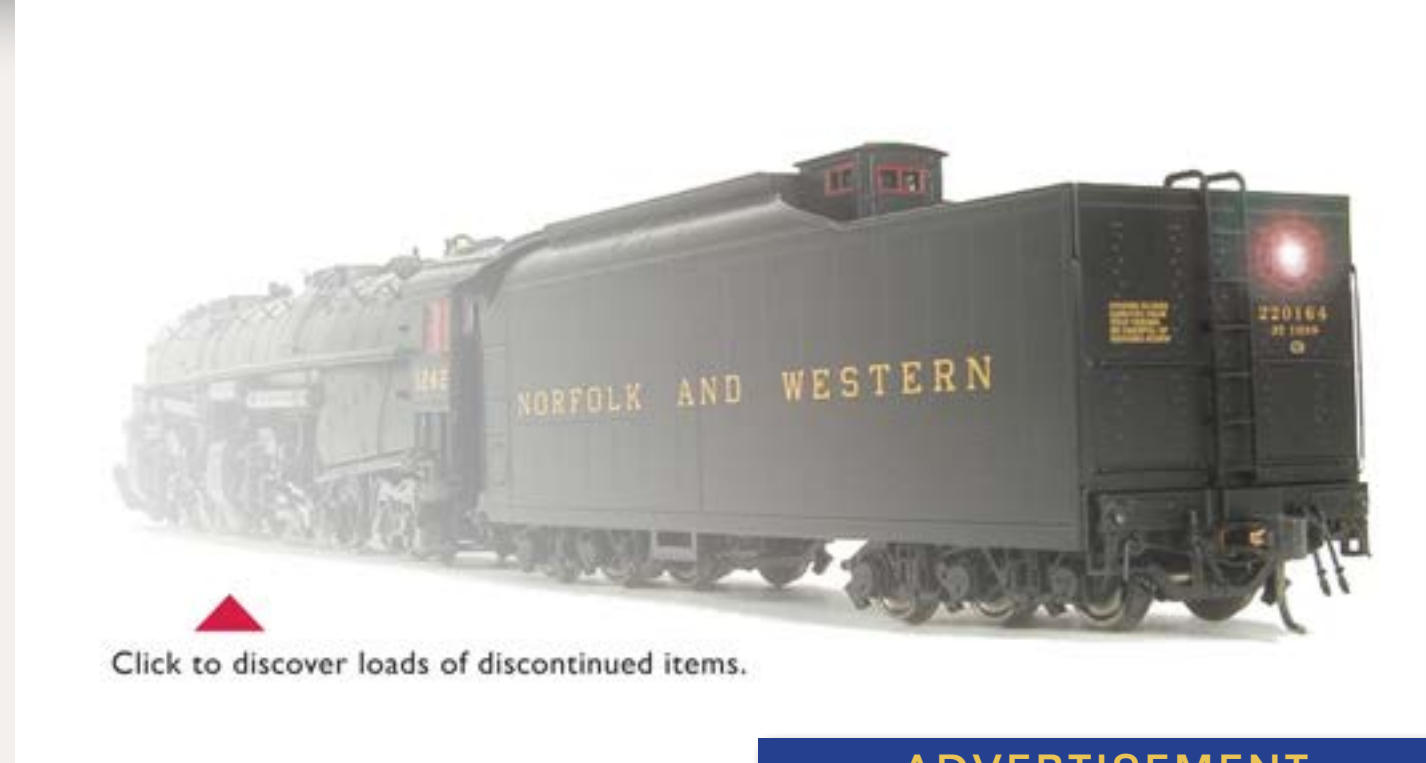
“The oxide is also very tightly bound to the track. This explains why a Brite Boy is effective while wet wiping is not.”

Thanks for having the analysis done, and for posting the results, LKandO!

One thing we don’t know is whether the sample tested was used with plastic wheels, metal wheels, or a mixture of both. Many people have reported cleaner track and better conductivity after discarding plastic wheels and installing metal.

At any rate, the report set off a wave of discussion and suggestions.

MRH Pooh-bah Joe Fugate, who has done his own investigations into arcing and rail crud, suggests using mineral spirits as a rail cleaner, because it will leave a slight film on the rail that inhibits electrical arcs. Joe says the mineral spirits don’t significantly reduce tractive effort. He suggests shutting off of the layout lights and watching a running train in the dark to see how much arcing happens.



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As for rail treatments, Wahl Clipper Oil has a lot of supporters. Other people report success with No-Ox, CRC Contact Cleaner, and with 2B graphite sticks (sold at art supply stores).

A couple of principles emerge:

- Protect the rails from dust and dirt.
- Scratchy products like Bright Boys and emery boards are good for cleaning away paint, plaster and heavy dirt deposits but leave rough spots that collect more crud.
- Occasionally applying some sort of treatment can extend the interval between cleanings.
- Cleaning track is pointless unless wheels on rolling stock are also clean.
- Railroads that run trains frequently have fewer problems with dirty rail than railroads that rarely run. Say that five times fast.

If all of the discussion in the thread has your head spinning, take a break

at Alan’s LK&O website, at www.lko-railroad.com.

— MRH



TIPS

Magnetic Assembly Fixtures – Getting squared away, cheaply

Getting square corners and plumb walls while assembling kits or scratch-building is not easy. I use a steel enclosure scavenged from an obsolete VCR. It provides a flat, clean magnetic surface and the corners are like built-in squares. I use a combination of small machinist’s squares and surplus magnets to form jigs to dry assemble kit parts before gluing. It will work for most any type of modeling material.



LAST CHANCE.



Figure 4

It help avoid mistakes and lets me test kitbashing ideas with different combinations of parts. The red magnetic welding holders are luxury items, they are strong, square, and can be used in various ways to form different angles. A clever person would probably magnetize the machinist's squares.

— Daniel Kleine



Figure 5

Figures 4 to 7: Magnetic clamps on an old VCR case cover provide a quick and easy way to get building corners square. Care should be taken to ensure the VCR case is flat before proceeding with structure assembly.



Figure 6



Figure 7

Reader Feedback
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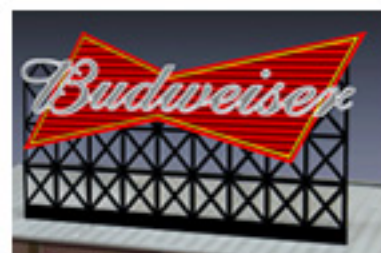
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UP THE CREEK: Peninsula Construction!

A regular report on the construction of a 1950s-something layout

Part 3 - Laying out a staging yard throat and working on peninsula benchwork ...

About our
layouts
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Charlie Comstock became the MRH editor in the March 2011 issue.

[Click here](#) to learn more about Charlie.

In episode two of my peninsula-construction saga I finished the helix (well, almost) and installed joists on the helix table to support the roadbed for the town of Browning.

In this installment I'll be working on the peninsula itself, finishing up the staging (lower) level's roadbed and using paper turnout templates to figure out how to maximize staging track length while avoiding S-curves and keeping the turnouts as close to the benchwork edge as possible.

Peninsula Spine

The spine of the peninsula consists of a series of 5"-wide risers cut from 3/4" plywood. If you looked under the staging roadbed you'd see that every third joist has an anti-warp brace lined up below it. I use two risers, one on either side of the joists with anti-warp braces creating a sandwich.

The back edge of these risers will be the attachment point for the backdrop along the straight part of the peninsula, so it's very important that the risers are in line with each other. If they're off a little, the backdrop will have a noticeable "wobble" to it. The rear 5" of the Bear Creek yard's roadbed will lie on top of the risers.



Figure 1

The process we used to achieve the needed riser alignment was fairly simple. I used a laser to line up a few key risers. Then used the edge of a 5" x 8' piece of 3/4" plywood to set the height of the intervening risers and keep them from leaning.

Figure 1: Train buddy Mike Talviste clamping a vertical riser in place. The piece of plywood on top serves as a to-and-fro guide. We used a 4' bubble level to set the height of each riser. Careful attention is needed for this task.

 **Reader Feedback**
(click here) 



Figure 2

To start, we clamped a riser in approximate position. Then, using a small hammer, we micro-adjusted its height until it just kissed to bottom of the 5" x 8' plywood strip placed vertically on edge. Then we laid the plywood strip flat across the tops of the neighboring risers, tapping the new one to make it plumb with its neighbors.

Once a riser is aligned, the clamps are tightened to secure it – we can't

afford to have it move while it's being screwed in place. Pilot holes are drilled and the riser is screwed in place. This process was repeated for the close to 30 risers on the straight part of the peninsula (figures 1 to 4).

Staging Roadbed

The roadbed for much of the peninsula's staging level was relatively straightforward to install – it was

Figure 2: With the riser double-clamped in place, Mike drills pilot holes for the screws that will hold it in place.

Figure 3: Mike and Joe Brugger adjust the position of the 5" x 8' to-and-fro guide before using it to check whether a new riser is plumb.

Figure 4: I put four screws in each "single" riser and eight screws in each double riser. The screws are driven half from one side, half from the other.



A full height back-drop will attach to the upper 3" of the left edge of peninsula's spine

Figure 3

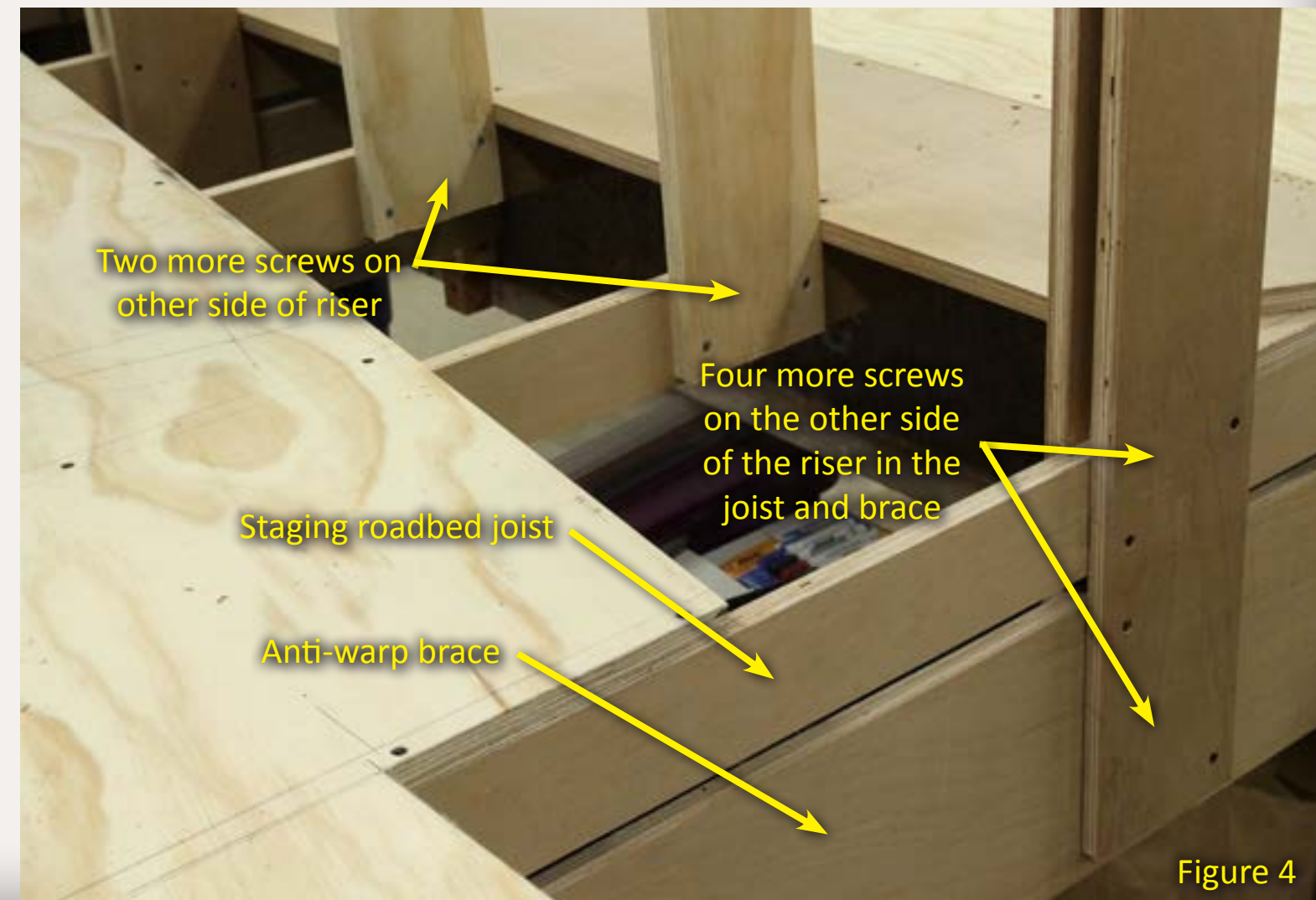


Figure 4

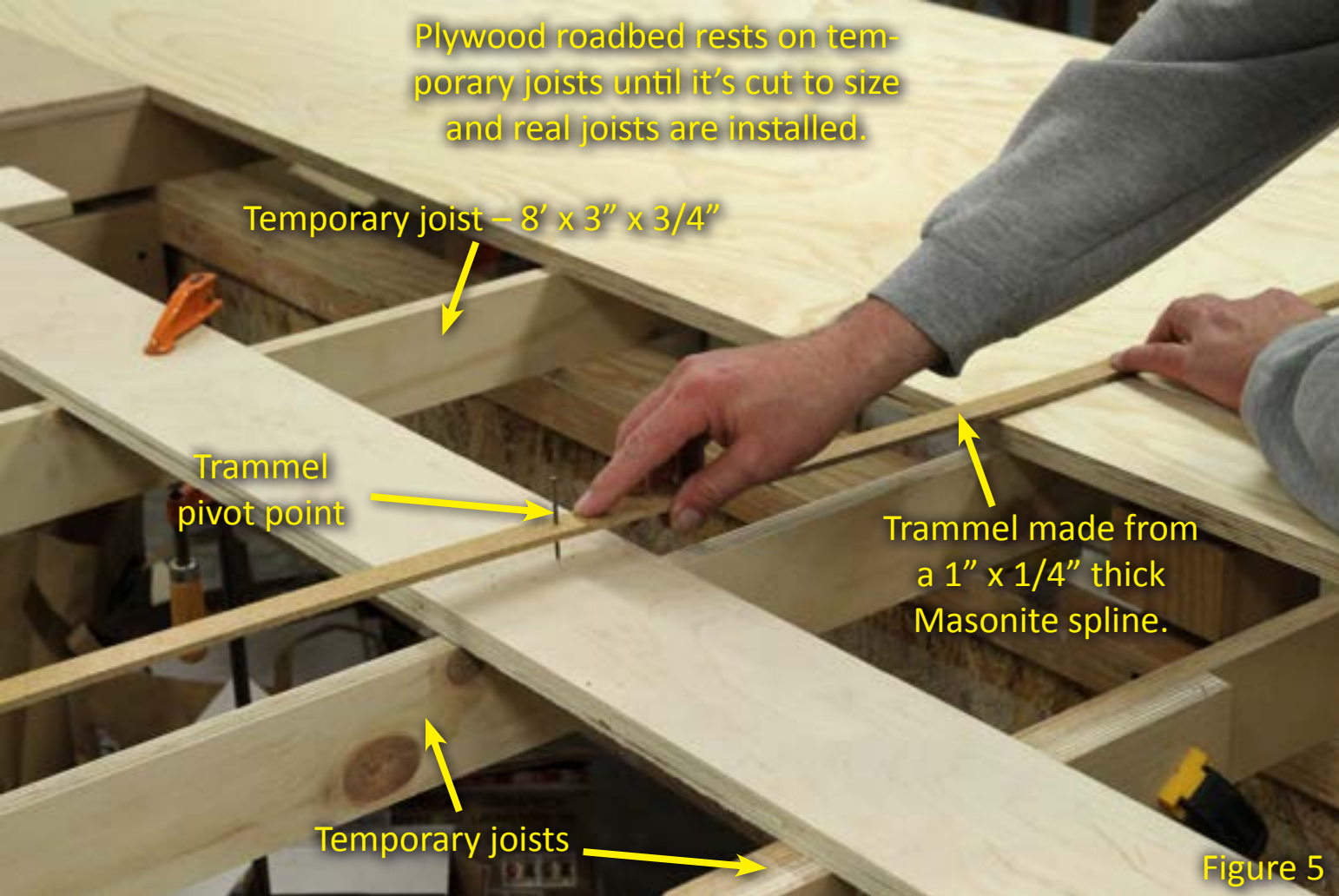


Figure 5



Figure 7



Figure 6

Figure 5: A trammel is the answer for plotting good arcs. But the center point was in an aisle. Not a problem – we rigged up a bit of temporary benchwork, drilled a hole at the center of the arc and stuck a nail through the trammel and into the hole.

Figure 6: Mike using the trammel to plot both the center of track for the blob curve and the outside edge of the blob.

Figure 7: The plywood for part of the blob supported by some temporary joists has been marked for cutting. The area to the left of the plywood will be a subterranean access area below the Bear Creek yard's roundhouse for reaching the lift-up hatch.

mostly plywood rectangles. It got a little trickier at the peninsula-end turn-back blob where the roadbed edges were curved.

An obvious answer to marking curved edges on sheets of plywood is a trammel, and that's what we decided to use. A few reasons for this are:

- Accurate curvature.
- The track on the turnback blob is supposed to be 3" inside the roadbed edge. A trammel is great for marking concentric arcs.
- We made the trammel long enough to extend across the aisles adjacent to the blob. This let us accurately plan the precise blob location relative to the adjacent benchwork.

There were problems though; the end of the blob has a lift-up hatch

in the upper deck to allow access to the far side of the turntable during operations and the center of the blob when installing scenery.

Because of this, the end of the blob needs to be "clear" underneath. That is, the center of the staging level has no joists so railroad personnel can get to the lift-up access hole (figure 8).

Guess where the center of the blob outline arc was located? That's right, it was in the middle of the area without plywood roadbed. We solved that problem by spanning the access aisle with some temporary joists to support a temporary piece of "roadbed" in which we drilled the trammel pivot pin hole. At first, all this scaffolding was clamped in place, but in the end I used to screws to hold it (so swinging the trammel didn't involve lifting

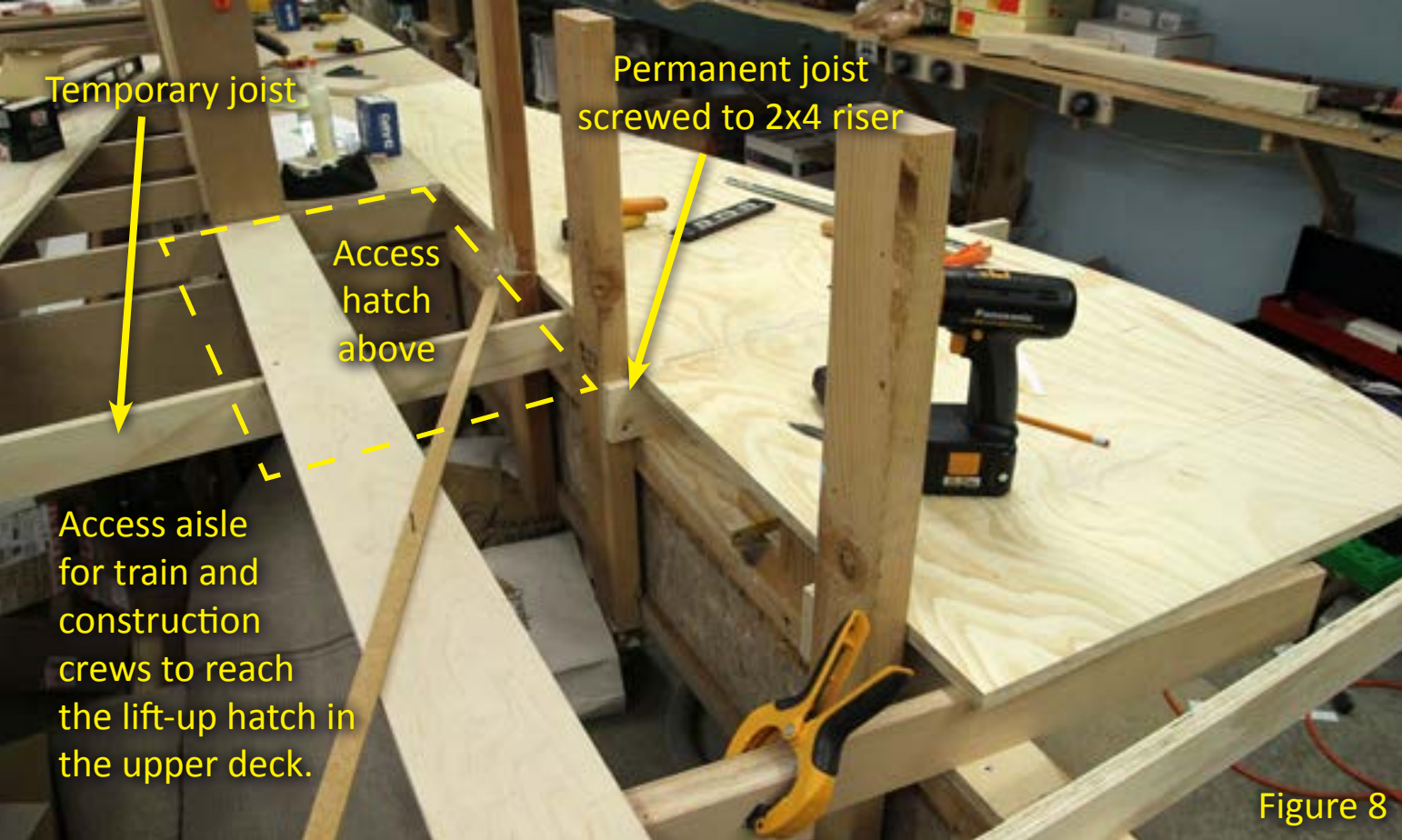


Figure 8: Some of the temporary joists supporting the trammel pivot pin have been removed and the pivot pin board is temporarily screwed in place. The 2x4 risers will support the upper deck. The joists for the upper deck need to be placed with care since an 18" turntable will reside over the access aisle along with the lift-up access hatch.

Figure 9: Visible through construction clutter is the access aisle and the roadbed for the main staging turnback blob. The curved piece in the center will eventually become a swing bridge at the mouth of the access aisle.

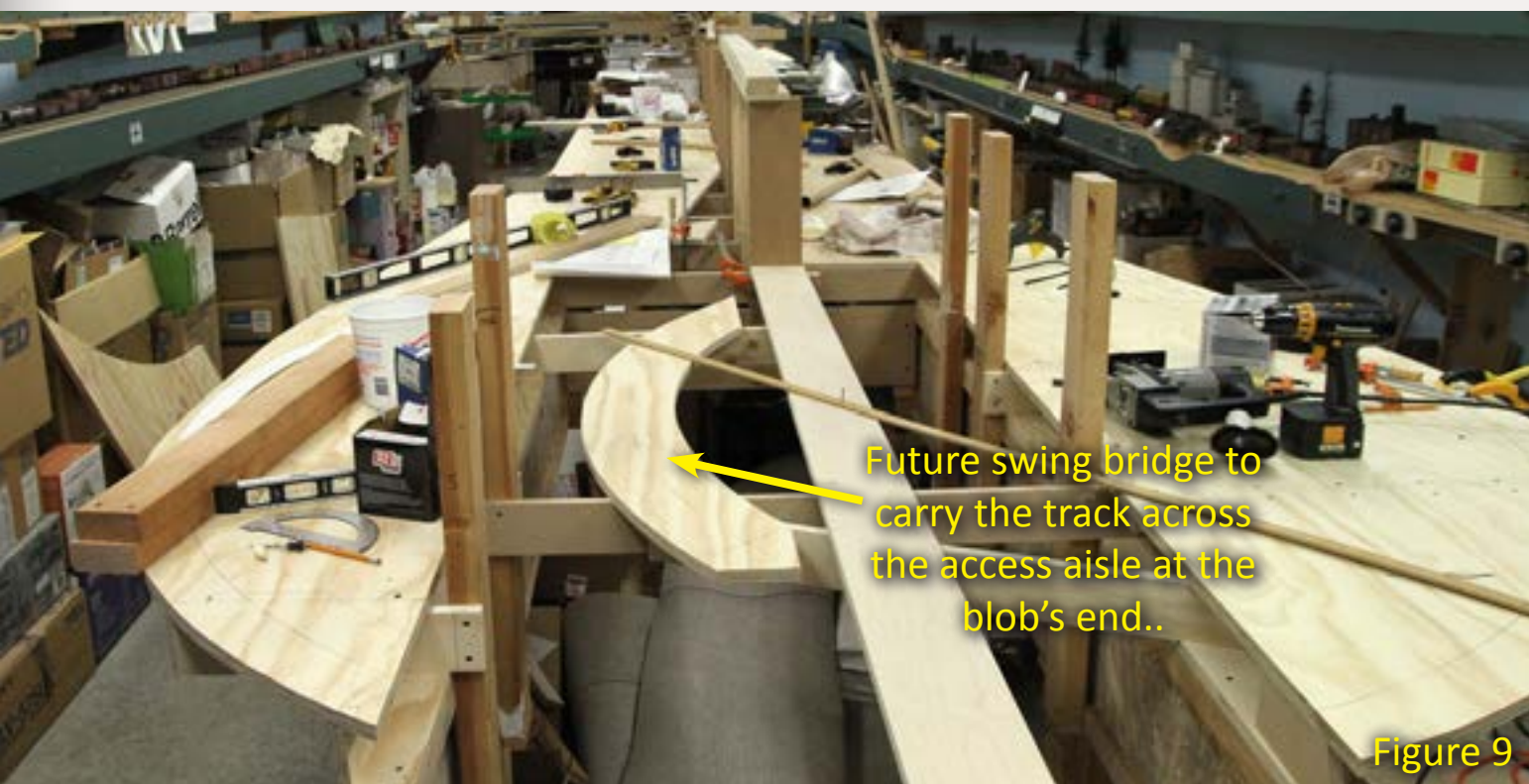


Figure 9



Figure 10a

Figure 10a: Once the plywood roadbed was cut to size, I installed permanent joists to support it. I used clamps and a level to ensure the roadbed would also be level.



Figure 10b

Figures 10b and 10c: The permanent joists are 3"x3/4" plywood, and their braces are 1"x2" poplar. Note the vertical cleats to which the braces attach at the bottom.

Be gentle when screwing close to the end of a 1x2 to avoid splitting.

it over the clamps (figure 5). The temporary joists also held the plywood roadbed in place until it was cut to size and permanent joists installed.

A bit of "adjusting" of the pivot point's location let us set the width of the aisles adjacent to the blob. When this was done, we were ready to swing some arcs.



Figure 10c

With the benchwork edge and track center line marked, my jig saw made quick work of cutting the roadbed edge. Afterward, I cut the permanent joists that hold up the blob's staging roadbed to length and installed them.

I'm using several 2x4 vertical risers to support the upper deck in this area. Each riser was screwed in place with

four 3" #8 deck screws. One end of each staging level joist in the blob area was screwed to a 2x4 riser. I used a torpedo (bubble) level to make sure these joists were level (figure 10a) before screwing the diagonal support brace to the other end (figures 10b and 10c). The braces make the joists very stiff..

Staging Configuration

Main staging on the BC&SJ is located on the lower level of the peninsula.

- Staging is split into two yards, one on either side of the peninsula. Yard 1 has eight storage tracks (plus a

thoroughfare track). Yard 2 is bigger with nine tracks [plus thoroughfare).

- I'm using #8 turnouts for compatibility with long-wheelbase brass steam locomotives.
- Staging is visible by bending over, but overhead clearance is limited.
- Main staging is configured as a balloon loop – polarity switching is required.
- The longest tracks hold up to 60 1952-era (40- and 50-foot) cars.
- Staging operates in a "clockwise" direction. Trains enter staging by

traversing "helix junction" and taking the inner (steeper) track down the helix. Trains leaving staging take the outer (less steep) helix track. Turnouts A and B (figure 11) route emerging trains to South Jackson (east end of the layout), Browning (west end of the layout), or the Toledo branch (passing through Albany).

Figure 11 reveals the loop-to-loop configuration of the BC&SJ. The visible portion of the layout is one loop. Main staging (tan background) is the other. The two reverse loops are

connected by the track and turnouts at "helix junction." Next month I'll discuss installing and wiring the tracks and turnouts in this area.

Inbound Staging Ladder

The inbound staging ladder (of yard 1) was a bit tricky to lay out. It had to bend around a curve and the turnouts needed to be as close to the aisle as possible for access. Eliminating S-curves

Figure 12: Planning the inbound throat of yard 1 using paper turnout templates.

Figure 11: BC&SJ schematic showing all locations. Note the unidirectional operation planned for main staging. Once past turnout C into the helix, trains run "counter clockwise" (refer the direction arrows in the schematic). This allows multiple trains to operate in the helix at one time – an advantage that lets me "fleet" trains in and out of staging.

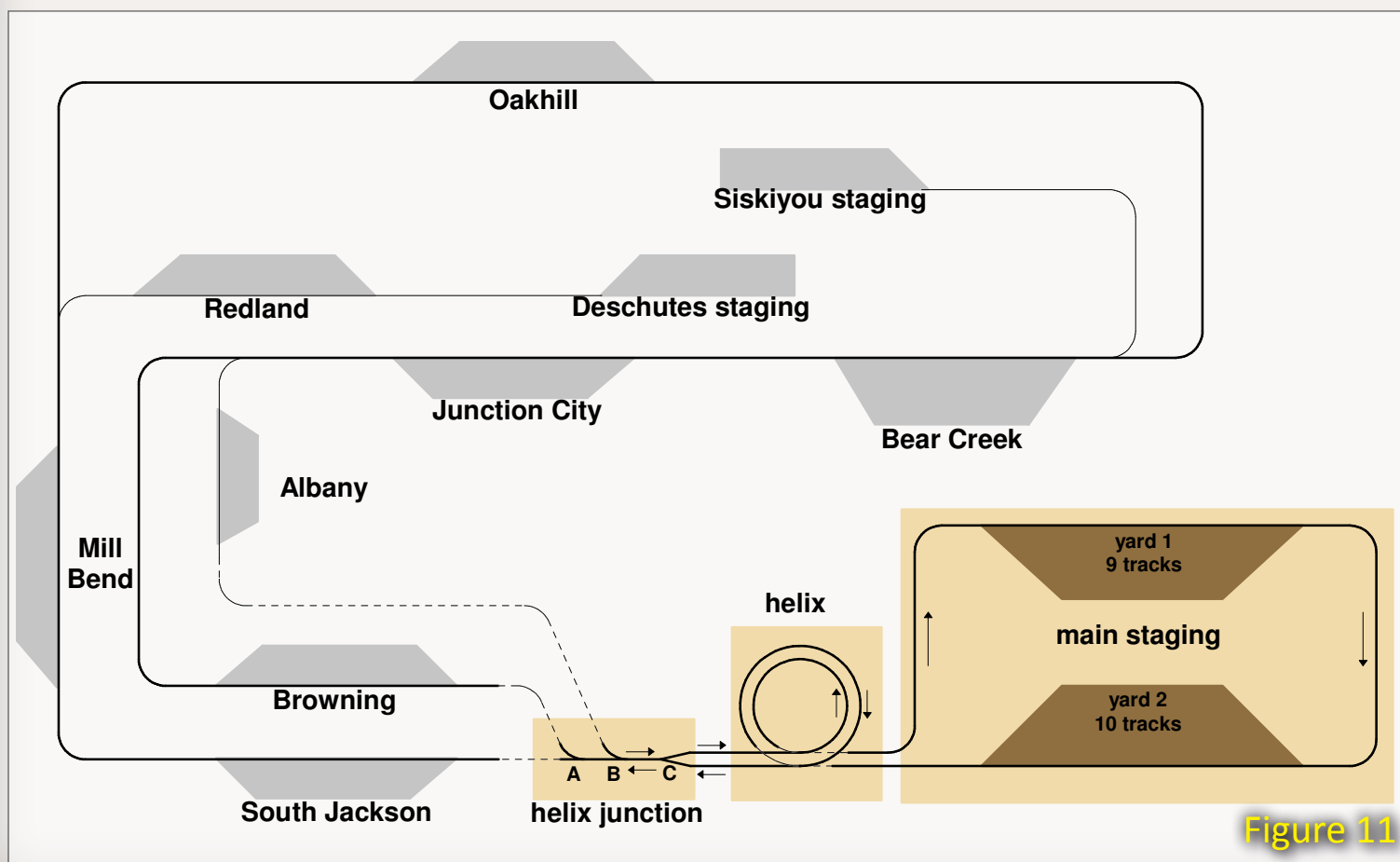


Figure 11

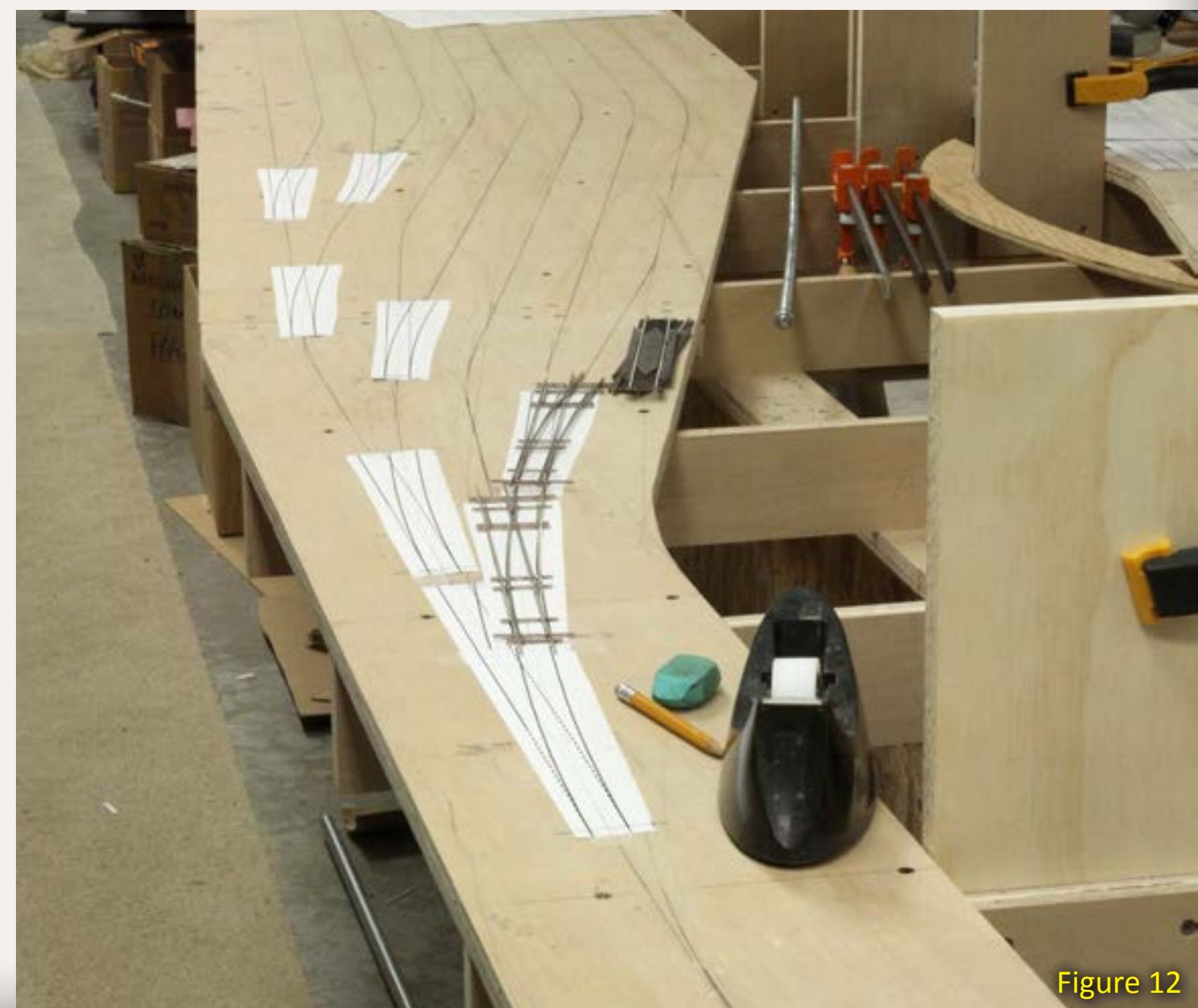


Figure 12

and maximizing the length of each staging track were other design criteria.

I planned the throats of the staging yards using 3rd Planit, but I often find that once full size benchwork and roadbed is installed, I see improved track arrangements. I printed out a number of paper turnout templates played around with them. These feature rails, track center lines, and ties, making them much easier to line up with track lines than photocopied turnouts which have no center lines.

As it turned out I was able to improve the computer-created plan with the paper templates, but Mike Talviste puzzled out an even better arrangement and that's what you see in figure 12.

Staging Lead Visibility

The inbound throat of yard 1 has poor visibility and access because portions of it are below the bottom of the

Santiam river bed (figures 14, 15, and 16). Where the river doesn't meet the edge of the fascia, I'm adding vertical extensions to the joists to increase their height, and moving the fascia upward for better visibility. Biscuits will securely join the extensions to the ends of the joists (figure 17). I'm also tapering the ends of the joists in this area to further improve staging visibility.

Staging is 36" from the floor. The roadbed above yard 1 is about 50" above the floor (except for the Santiam river bottom which is about 47"). On the other side in yard 2, the roadbed for Bear Creek yard is 53" above the floor. Allowing for a 3" fascia, I'll have 11" of visibility for yard 1 and 14" of visibility for yard 2 – this should be sufficient.

Nevertheless, bullet-proofing the turnouts and tracks in main staging and performing some serious testing is mandatory. Testing will involve backing

Figure 13: I made paper templates using 3rd Planit. I'm using a #8 [Fast Tracks](#) jig to build these turnouts and I needed to manually set the lead length (distance between points and frog) to match the jig-built turnouts. Both rails and track center lines are shown making alignment easier than using a photocopy of an actual turnout.

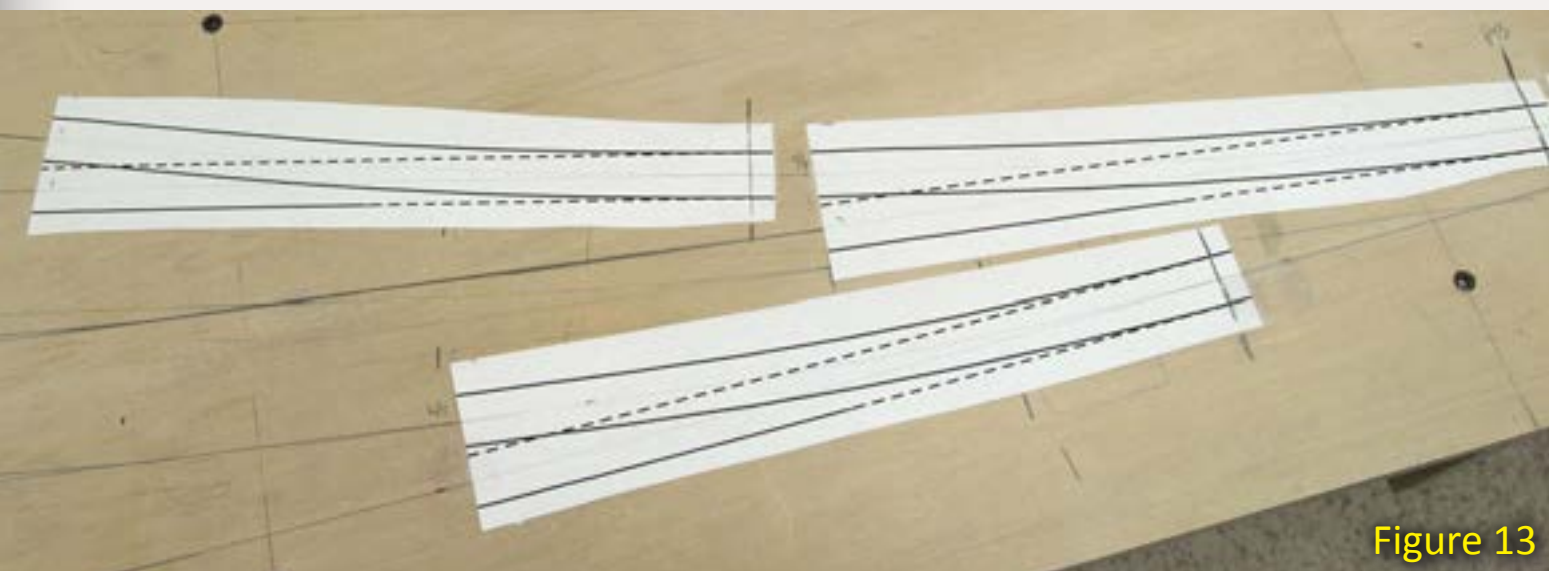


Figure 13

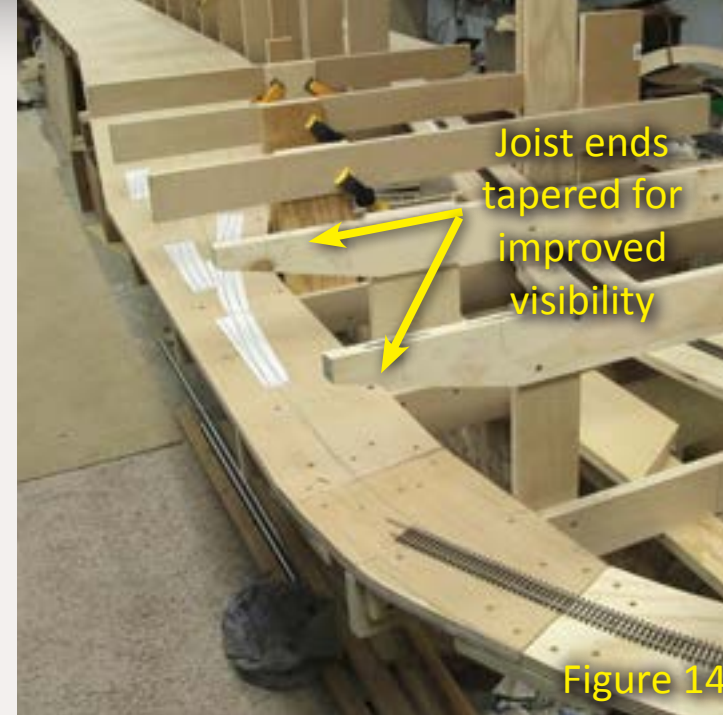


Figure 14

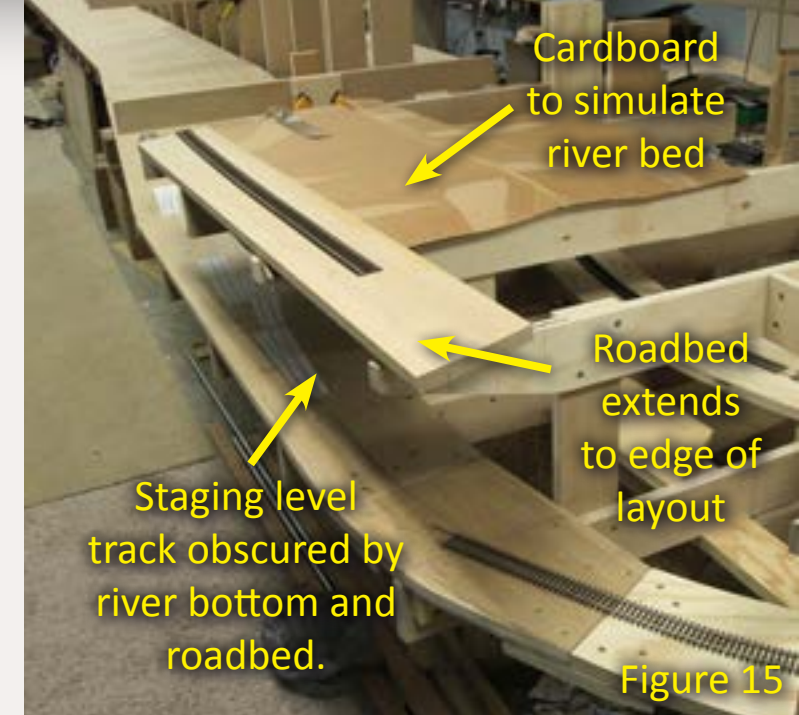


Figure 15

Figure 14: I clamped more joists in place temporarily to demonstrate the visibility issue. The first few joists have tapered ends improving visibility (the temporary joists beyond them are not tapered).

Figure 15: I mocked-up the Santiam river bed with some cardboard. This leaves the staging lead dark and hard to see. Access is poor, too.

Figure 16: Joist extensions raise the main line roadbed provide better visibility of the staging lead. Another board to show the relative position of the Toledo branch gives a hint of what the Santiam river area will look like. Joist extensions work except where the mainline crosses over the river on a bridge – the river must extend to the edge at those places.

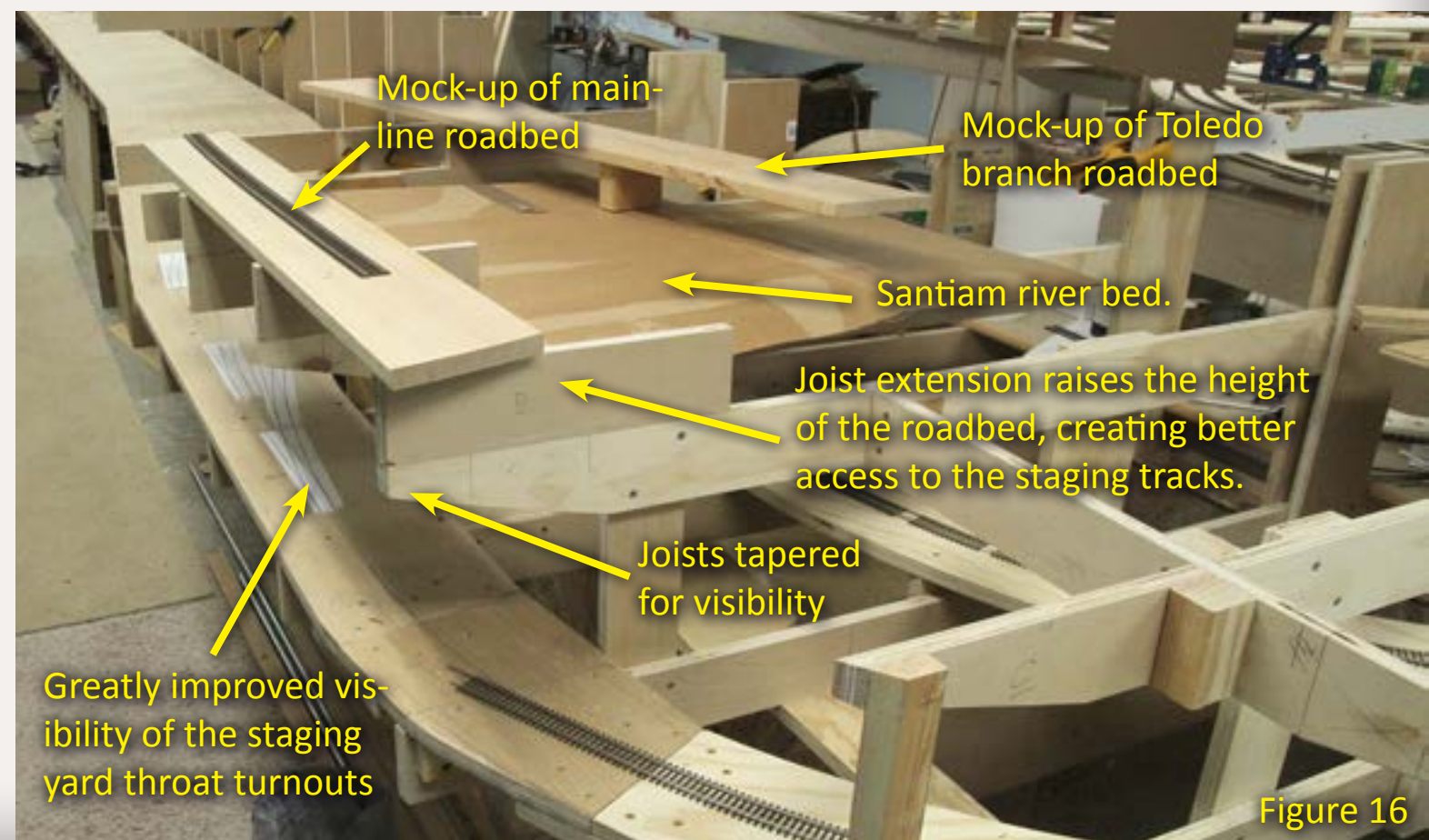


Figure 16

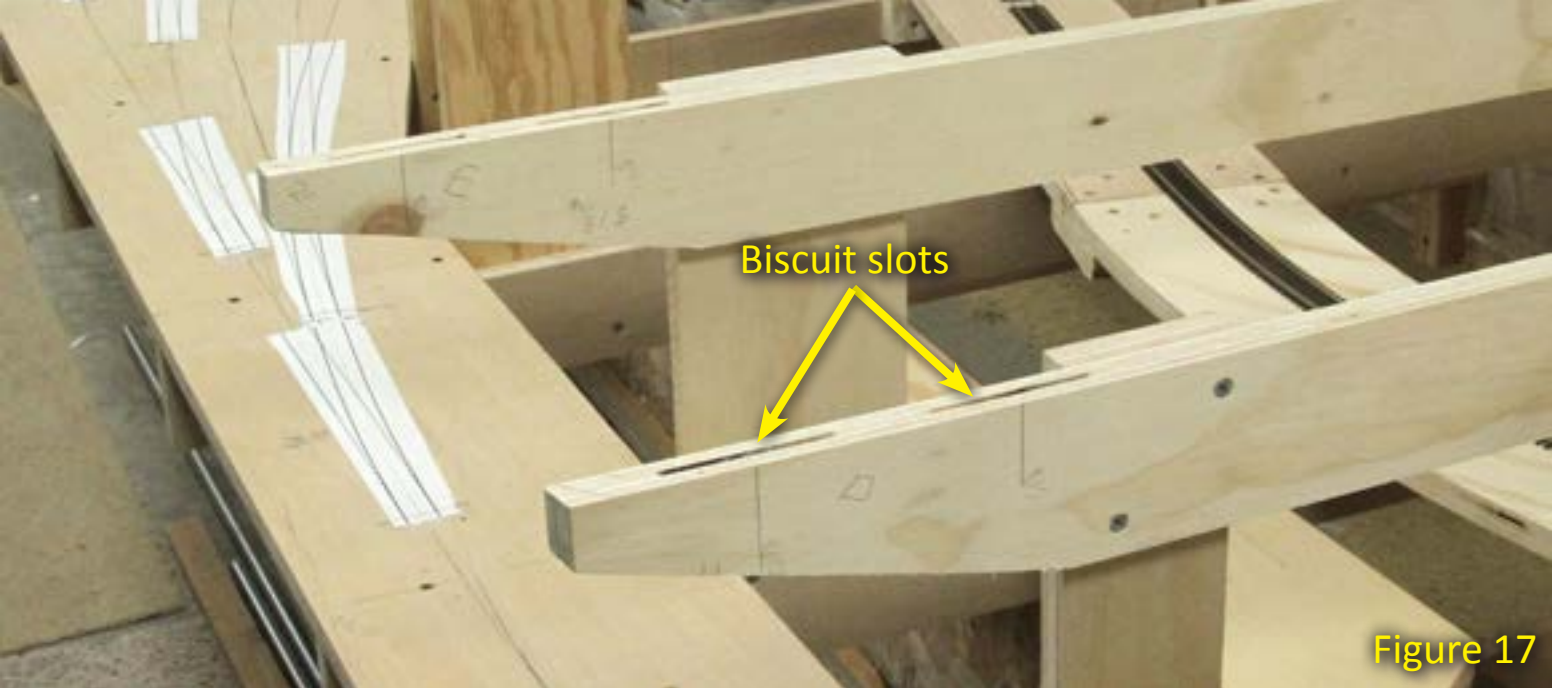


Figure 17

Figure 17: Biscuit slots pre-cut in the tops of joists for future installation of joist extensions to raise the height of the mainline roadbed. I discuss the use of wood working biscuits thoroughly in [February's Up the Creek](#).

30-car trains at high speed through the throats. If there are no derailments after several passes, that route should be good to go.

Any derailments are cause for a thorough investigation into why they happened. If the problem is related to track or turnouts, retesting is required after making repairs.

Even More Biscuit Joints

I want the joists supporting the upper deck to be cantilevered from

the peninsula spine's risers, but the joists are 3" x 3/4" x 30" plywood. A 3" joint height doesn't leave me confident weight at the joist ends won't deform the riser-to-joist joint.

Biscuits to the rescue again! The two sides of the peninsula have a 3" difference in elevation, so I'll cut the joists a little longer and biscuit join them. This will yield the desired 3" elevation difference, plus the area available for support screws is now 6". Figure 18 shows my prototype biscuit-joined joists.

Ain't building benchwork fun? Stay tuned for some trackwork and turnouts in the April MRH.

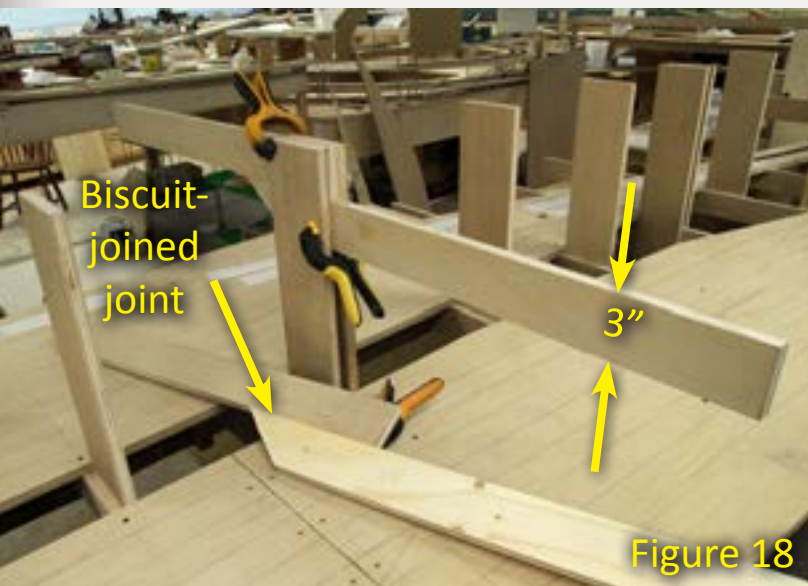


Figure 18

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Figure 18: Biscuit-joined joists for the peninsula's upper deck.

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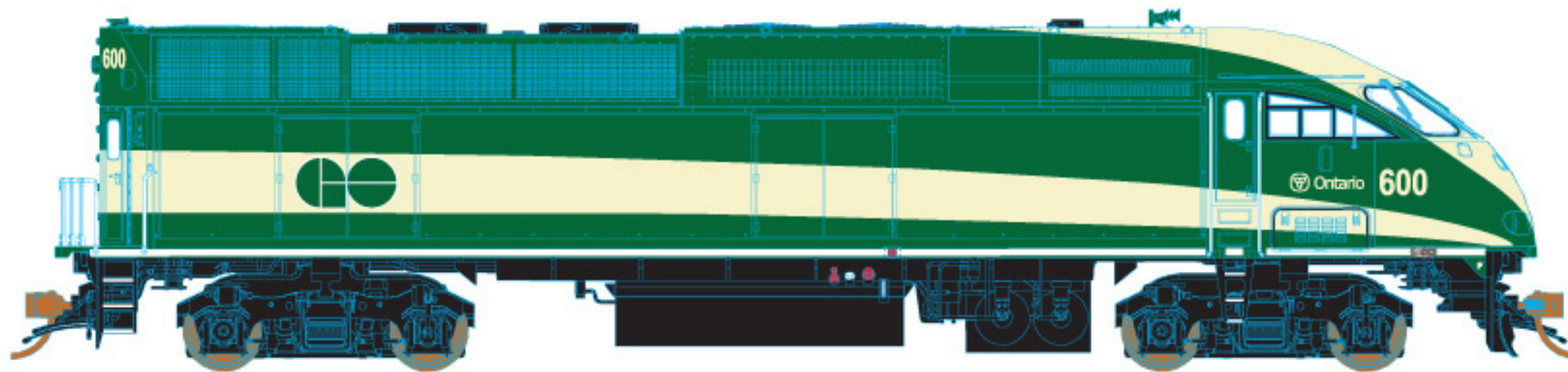
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About our prototype modeling columnist



Marty McGuirk is an avid transition-era freight car modeler and Central Vermont fan. He founded the CV Historical Society in 1989, and currently models the railroad's northern division mainline in HO scale as it looked in the 1950s.

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Adventures in Prototype Modeling

Get a head start on final scene visualization using mockups ...



Mockups are a great way to quickly see the impact a finished scene will have, and to identify any potential problems before spending a lot of time and effort building the “real” models. This month we’ll see how mockups are a great addition to your bag of model railroading tricks. The pictures show how I used three types of mockups: footprints, partially built kits, and 3-D matte board mockups in planning this and other scenes on my layout.

While I’ve done mockups for simple scenes and buildings, the planned White River Junction scene on my HO scale Central Vermont is by far the most complex mockup I’ve ever done (figure 1). It can be traced to the frustration I was having designing this section of the layout the traditional way – in two dimensions on paper. In fairness, it’s a pretty complex scene. On the prototype, White River Junction was the point where two Boston & Maine lines and two CV lines joined. This junction, while not large, included



Figure 1: After getting frustrated by the process of planning this scene on paper, the author used mockups as a planning tool to see what would, and wouldn't fit.

a set of diamonds, a wye track, and several yards.

If you want to get a feel for White River Junction, check out this 3-D map in Google Earth. Although the track isn't in the map, many of the key structures are included. The link is rather long:

maps.google.com/maps?q=White+River+Junction,+VT&hl=en&ll=43.64781,-72.317799&spn=0.000308,0.000731&hnear=White+River+Junction,+Windsor,+Vermont&t=f&z=22&vpsrc=6&ecp_ose=43.64726075,-72.317387,129.67,-28.474,75.531,0

[308,0.000731&hnear=White+River+Junction,+Windsor,+Vermont&t=f&z=22&vpsrc=6&ecp_ose=43.64726075,-72.317387,129.67,-28.474,75.531,0](https://maps.google.com/maps?q=White+River+Junction,+VT&hl=en&ll=43.64781,-72.317799&spn=0.000308,0.000731&hnear=White+River+Junction,+Windsor,+Vermont&t=f&z=22&vpsrc=6&ecp_ose=43.64726075,-72.317387,129.67,-28.474,75.531,0)

I knew it was impossible to model the facilities of both railroads in my space, so I opted to concentrate on the CV facilities – limiting the B&M to only the points where it interacted directly with the CV. That took a lot of pressure off, and I felt there was

enough room to include the key CV elements. Try as I might, I couldn't translate those elements into a scale drawing that gave me a mental picture of how the thing would actually look, so I opted to spend what seemed to be an inordinate amount of time and energy mocking up this very complex scene. What I found was the time spent (about three weeks of occasional evenings and a couple of weekend afternoons) was not wasted since it produced a buildable plan that captured the prototype. I even considered a couple of other spots (figure 2) on the layout for my White River scene before settling on its present location. Again, having the station and other mockups made it easy to try the scene in different areas.

Gathering Data

The first step was to dig out my prototype information, which in this case included Sanborn maps of White River, railroad track maps, photographs, and plans of two of the key buildings – the station (drawings were published in the January 2002, Model Railroader) and Twin State Fruit warehouse – drawings of which were published in the Central Vermont Railway Historical Society Ambassador.

I divided the prototype scene into several "signature areas" including the station/junction area, (figure 3a and 3b) a small industrial area just north of the station, the "Bridge Street Scene," a downtown area, including the buildings along Gates Street,

which included the Cross-Abbott Grocery Warehouse (figure 4a and 4b next page); the engine terminal, and CV freight yard. I also included the joint B&M-CV freight house on my list, which is located south of the station area and included some other industries.

While some rough sketches indicated the key elements should fit in the available space, if I've learned anything over the years it's that things always take more room than we first anticipate. So, since I already had the benchwork built it seemed to make more sense to forego the computer or paper and simply plan the scene out full size. It provided instant feedback in "real scale" and made it much more difficult to fudge things "just a little bit."

Figure 2: Before finalizing the location of the White River Junction scene Marty moved the mockup to a couple of possible locations. Here's one example of a location that just didn't work!

Figures 3a-3b: The obvious centerpiece of the White River Junction scene is the Colonial Revival station, inspired by the architecture of nearby Dartmouth College. The station played host to B&M trains, and CV 4-8-2s like these. It continues to serve Amtrak today. In the 1940s and 50s, the junction was controlled by a classic New England ball signal.



Figure 2



Figure 3a



Figure 3b



Figure 4a

Figure 4a: This block of stores is one of the key prototype scenes the author wanted to include. During the era modeled, the green Vermont Salvage building housed Cross-Abbott Wholesale Grocers.

Figure 4b: The Cross-Abbott warehouse mockup in place on the layout.



Figure 4b

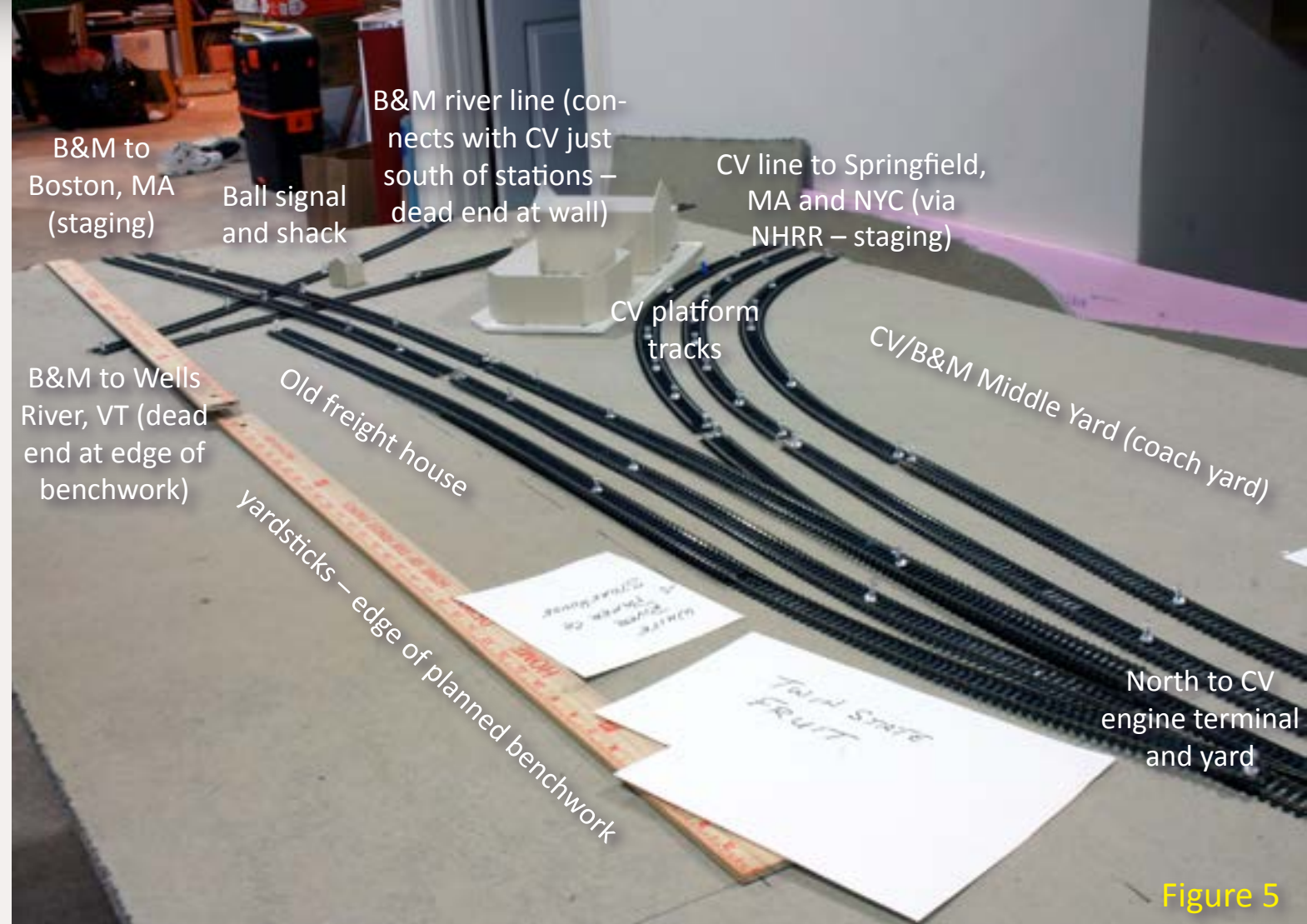


Figure 5

Figure 5: The scene started with track pinned in place and cardstock footprints to get the general arrangement correct.

Start With a Footprint

The most basic mockup is a cardstock footprint. To make one you only need to know the length and width of the prototype. The most obvious way to determine this is to measure the actual building (assuming it still exists). If you live at the other end of the country, check an online resource such as Google Earth or BingMaps and scale the building from it. You can also scale dimensions from sources such as Sanborn maps or railroad engineering department drawings, or use references like the Interstate Commerce Commission Valuation Surveys. Finally, you can scale a building from

photographs. While the latter may not be 100% accurate, I've found I can get pretty close.

Making the footprints is a simple matter of transferring the width and length of the prototype to a fairly stiff material (I use ordinary white poster board), cutting it to shape, and plopping it down on the layout (figure 5). If a full-size model won't fit (don't worry, they almost never do!) you can start the selective compression process by adjusting the footprint – simply trim the footprint until it fits the location you have in mind. Then use the “final” footprint as the starting

point for a 3-D mockup or to dimension the actual model.

If you plan to use kit structures, you can make footprints that match the kit dimensions (these are usually available on the manufacturer's web site or printed on the packaging). This approach may save money. If you don't have room for that great looking building, then you don't need to acquire it. Of course, you may find you have more space than you thought and end up needing to buy more kits!

3-D Mockups

Although two-dimensional footprint "mockups" are easy to make, the lack of volume makes it difficult to get the full impact of the finished scene. Three-dimensional mockups are the answer. Make these from cardstock, poster board, matte board, or foam-core. You can even create a mockup by temporarily taping the walls of a commercial structure kit together with blue painter's tape. I find the blue painter's tape is easy to remove



Figure 6: Sometimes mockups can be partially (or temporarily) assembled kits or measurements from kit manufacturers. The Walthers turntable footprint is available on the Walthers website, and the coaling tower is a model of the CV White River tower from Alkem Scale Models.

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and doesn't leave a residue that can interfere with painting.

Most of my 3D mockups are made from matte board, the same material used in picture framing. It can be purchased from any art supply or craft store that offers picture framing. Matte board is available in a bewildering variety of colors and textures. I used what I had on hand, but you could use matte board close to the color of the planned buildings so you would see not only the shape of the buildings in the finished scene but also get an idea of the colors. You could also print out the appropriate textures, signs, etc . . . and apply those to the mockups. I prefer the minimalist approach, reminding

myself these are planning tools and not meant to be finished models. After all, if you're spending too much time building a single "mockup" you won't be as inclined to modify it if it doesn't quite look correct.

Once I rounded up the information and material I spent the better part of a long Sunday afternoon making mockups for the key structures. I find making mockups is an ideal way to combine model railroading and football watching. The centerpiece of the White River scene is the station itself. My mockup is a full HO scale model of the prototype.

For the White River scene, I used the scale on the Sanborn maps to get

the basic dimensions and shape of the remaining buildings. The coaling tower is available as a kit from Alkem Scale Models, so I used a partially built tower (figure 6 previous page) to make sure it would fit. I also used the Walthers turntable template as a footprint mockup for the terminal scene.

I didn't bother putting roofs on the mockups. They just didn't seem necessary although I might add them to the station mockup since it will sit in place until I get around to building the real model!

Mocking Up the Scene

I started mocking up the scene by pinning good old Atlas flex track

in the approximate location of the mainline. I used Atlas code 100 flex track since it was on hand. Its "floppiness" allows it to readily assume natural easements, and the code 100 track has nail holes in the ties that make it easy to pin in place. . I also have a couple of curve templates cut to my usual curve radii (26", 30", 32" etc . . .) that let me quickly determine if my minimum radius curve will fit a particular location.

With the mainline roughly in place, I positioned the structure mockups in their approximate position and carefully studied the results. Unlike a drawn track plan, I found this approach to be a very fluid method of planning. I pushed things around until

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Figure 7: The mockup of this scene in place on the layout.

they looked “right,” checking the sight lines and general arrangement of things, and then rearranged things a little more. I could see there was one block of commercial buildings that simply was not going to fit. Frankly, I don’t think they’ll be missed in the finished scene. With the mainline and key buildings positioned it was time to add the other tracks.

Turnouts always take up more space than we plan for. My standard turnout is the Micro Engineering no. 6, but I’ll handlay other turnouts to fit. I’ll either pin the commercial pre-fab turnout in place, or for longer or curved turnouts I will print paper templates (available on either the Central Valley or Fast Tracks web sites). I also will pin two pieces of flex track, one on top of the other, to get the general flow of a curved turnout.

Streets also tend to take more space than we allow for in the planning stage. To my eye, roads that are either too narrow or don’t feature even a small shoulder scream “model railroad” and don’t look right. Strips of poster board (figure 7) cut to the appropriate widths of the streets (in this case, measured from the Sanborn maps) are a quick and easy way to verify the width, angles, and placement of roads. You can compress the width of the roads slightly, but don’t overdo it or you’ll end up with streets that look like cart paths!

I could tell in some areas the full-size HO buildings simply wouldn’t fit. The solution is selective compression. While overly compressed buildings don’t look right, you’d be surprised how much you can compress a prototype structure and still have the



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resulting scene look “right.” In my case, I opted to compress a couple of dimensions on the station building – two plain brick walls – to shorten the overall length of the building by about an inch. I simply cut them out of the mockup and reassembled it. The compression doesn’t sound like much, but it makes all the difference in the world at creating the right look around the platform areas.

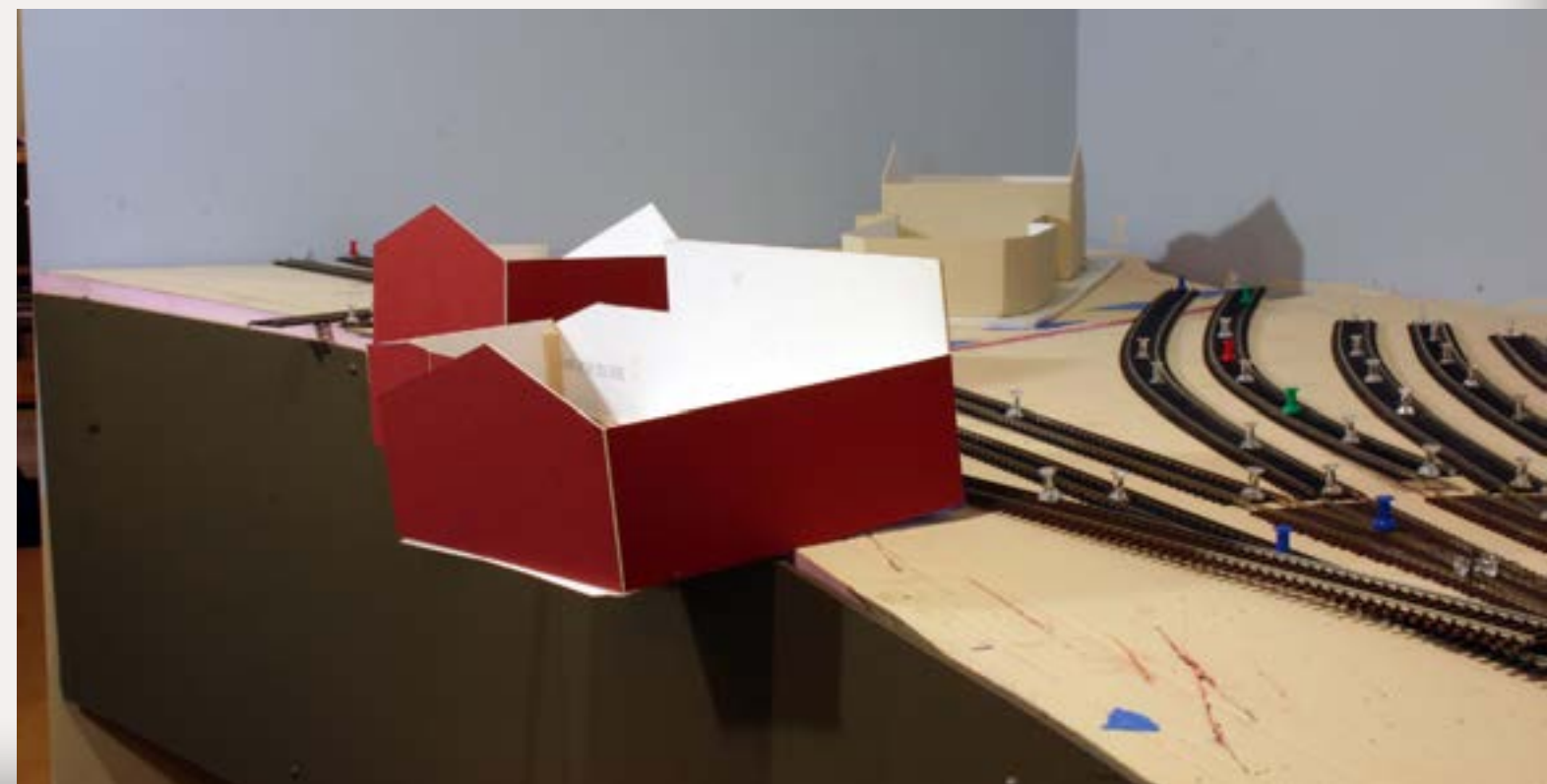
I also found the Twin State warehouse was not going to fit in the foreground (figure 8). Since this is a key signature element I wanted to include it. You

Once I’d positioned all the key elements of the buildings, tracks, and roads, I simply marked the locations of each of the major elements and started laying track.

can see in the photo how the building is hanging off in space! Luckily, the aisle is fairly wide so I built a shelf off the front of the layout for the Twin State building to rest on.

The easiest buildings to deal with were those in the background. As I positioned the footprint mock-ups I could tell full-depth models of these structures simply wouldn’t fit. Luckily, they don’t need to be full-depth buildings. I trimmed the footprint mockups until I thought it was a reasonable arrangement and then made the 3D mockups. These

Figure 8: The Twin State Fruit building hangs off the front edge of the layout. The mockups made it obvious a small shelf extension was needed to support this key element. More importantly, the mockup confirmed that the building wouldn’t interfere with access to the junction trackage in this section of the layout.



are placed at an oblique angle to the backdrop. They're not flats, and they don't run parallel to the wall – both helping disguise the fact that they're much shallower than they should be. This not only reduced the overall size of the structures, giving them a little forced perspective to create the illusion of distance, but also meant the scratchbuilt structures would blend

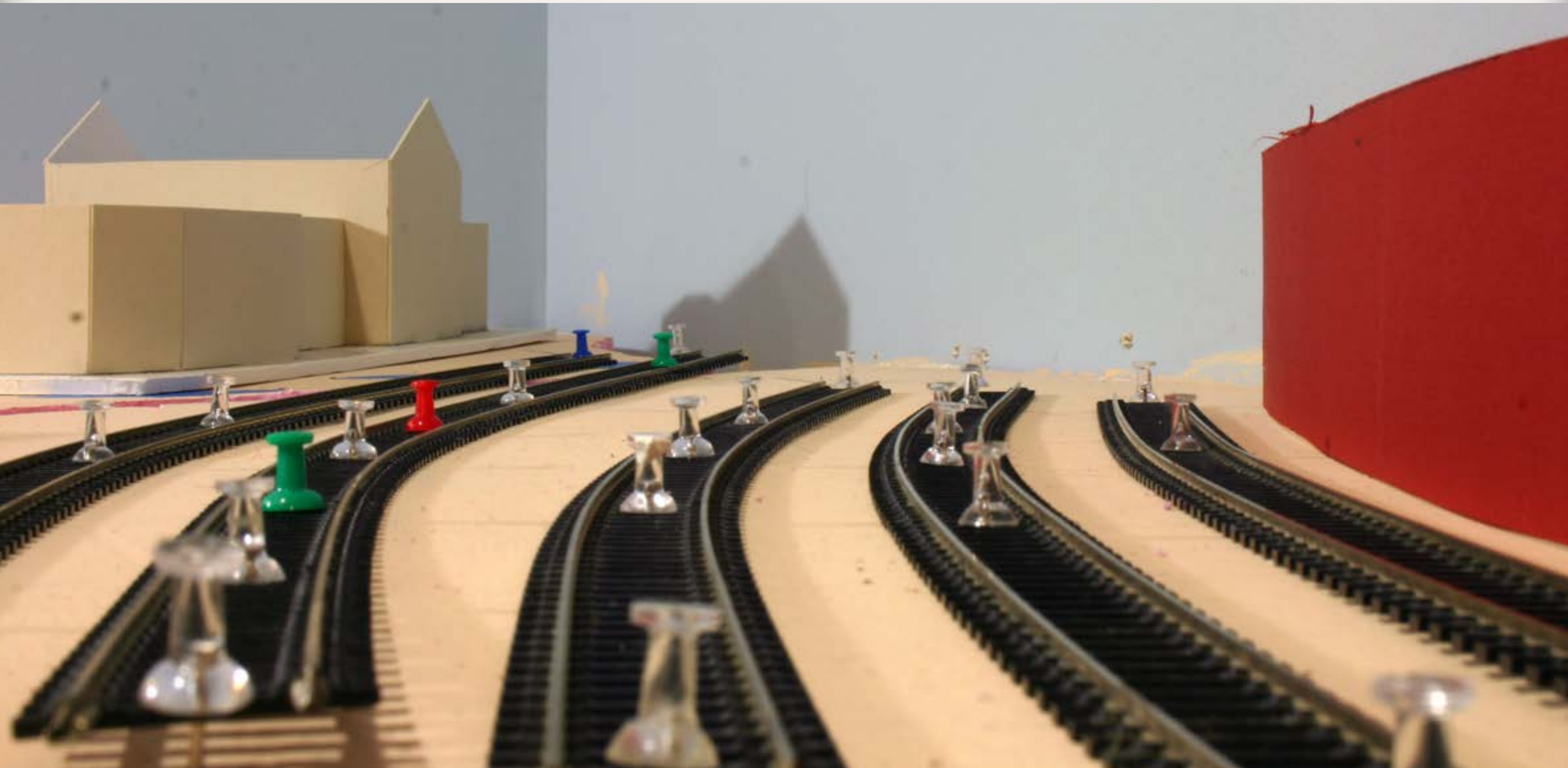
better with the commercial structure kits I plan to use as “filler” buildings. Once I'd positioned all the key elements of the buildings, tracks, and roads, I simply marked the locations of each of the major elements and started laying track.

Was it worth it? Even in the “rough mockup” stage, the scene has much of the visual impact of the prototype

scene. I'm looking forward to building it, confident in the knowledge everything fits and looks right. Well worth it for a few evenings and a few bucks worth of cardboard..



Figure 9: The author couldn't resist trying a “track level” view with the mockups in place. Now, it's time to lay the track and build the models (compare this with the prototype views in Figure 3)!



About our DCC columnist



Bruce Petrarca is a well-known expert on all things DCC.

[Click here](#) to learn more about Bruce.

Photos by author unless otherwise noted.

DCC Impulses: And now, LIGHTS – LED style!

Getting the light you want!

Now that your decoder is installed, let there be light ...

I love using LEDs to light my locos, cars and buildings! There are several reasons. Let me count the ways ...

Life: Properly installed, modern LEDs will have a life of tens of thousands of power-on hours. Just think – 20,000 power-on hours is 8 hours a day, 5 days a week, 52 weeks a year for almost a decade! Probably longer than you'll run your equipment!

Colors: Colored LEDs are a pure, single-frequency color.

“White” LEDs are now available in many different shades, ranging from almost Xenon blue-white to a very good representation of a warm white incandescent bulb.

Refer to the SMD LEDs video in the sidebar on [page 41](#). I show a technique that lets you adjust the color value of a white LED away from cool white and toward warm white. While the video focuses on SMD LEDs, the technique also works on packaged LEDs.

For headlight use, I'm partial to Richmond Controls' sunny-white and golden-white LEDs. Golden-white

devices are better for emulating incandescent lamps, but need to be recessed into the loco so the orange bodies cannot be seen.

Temperature: No more melted shells. Unlike relatively high-temperature incandescent lamps, even the 1.5 volt bulbs, neither the LEDs nor their dropping resistors get warm enough to deform plastic shells or building walls.

Power: The heat being generated by an incandescent lamp could be running a loco for you! If you have enough high-current lamps lit at once, you might need to add another DCC booster.

Size: LED sizes range from packaged devices in excess of 5 mm (1/4-inch)

in diameter down tiny (0.04 x 0.02 inch) surface mount devices (SMD). You can almost certainly fit an SMD LED in a really tight spot.

Cost: LEDs can be very cost-effective. I just purchased a bunch of SMD LEDs with an SMD resistor for each of them for a total cost per light of under 10 cents.

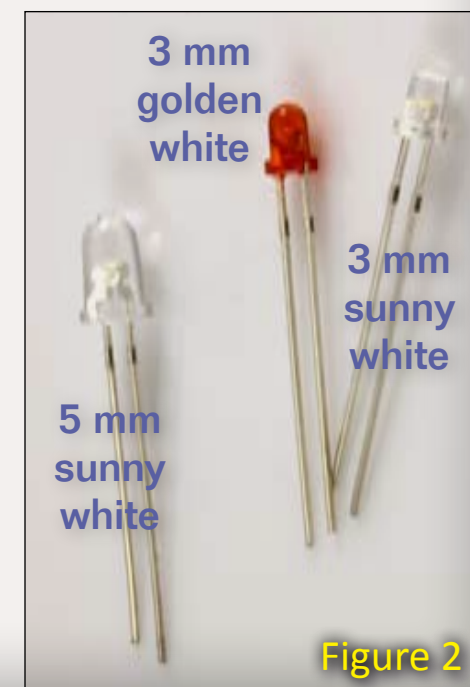
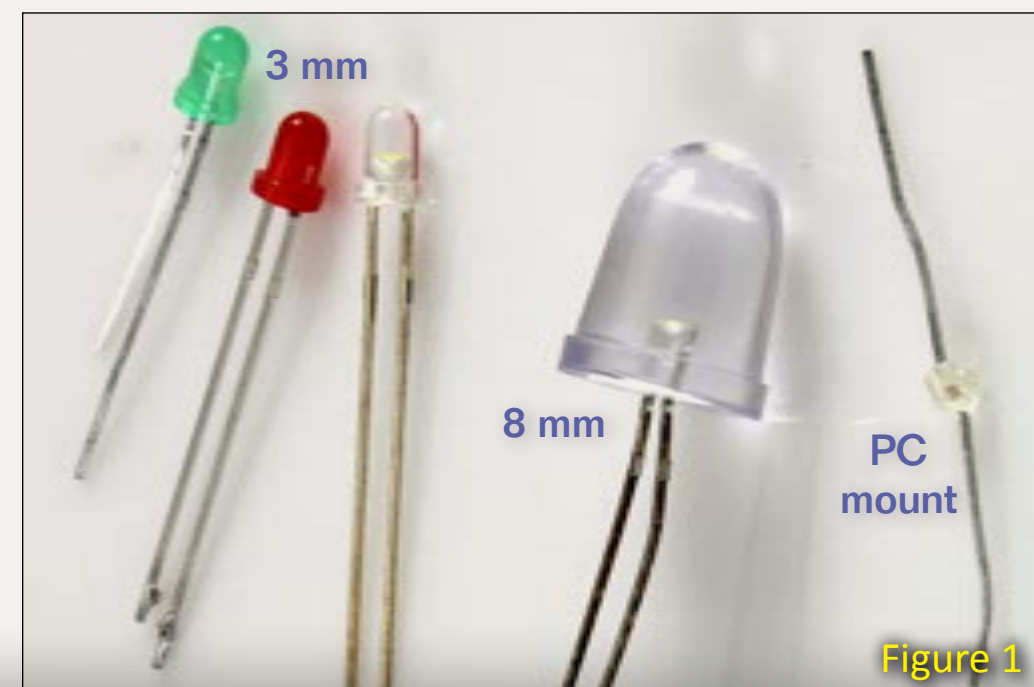
LEDs and Your Layout

Before we jump into the details, let's think about what is possible with LEDs.

- Loco lights, including head and rear lights, marker lights, cab lights, step lights, and ditch lights, are an obvious place to start.

Figure 1: Packaged LEDs come in many colors, sizes and styles.

Figure 2: Richmond Controls' LEDs – golden-white version has an orange body – shown are 5 mm sunny-white and both versions in 3 mm.



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Video 1: LED lighting effects.

- Caboose lights, including marker lights and interior lights.
- Passenger car lighting and markers.

Let your imagination run wild!

How about covered wagons with nose lights: white going forward and red in reverse? A white/red bi-color LED is indicated. Decoders can simulate a Mars light if your prototype had them.

Modern decoders allow great effects with LEDs as well as incandescent bulbs. Usually there is a CV setting to tell the decoder which is attached.

Video 1 demonstrates how changing decoder CV settings allows LEDs to

simulate lighting effects. LEDs react to changes in voltage and current differently than a light bulb. See how enabling a decoder's LED mode dramatically improves the appearance of a Mars light effect.

LED safety

LEDs are somewhat sensitive to electrostatic discharge (static electricity). Touch something metal (preferably grounded) before touching them to discharge any static charge you're carrying.

This is a DCC column, so I'm going to discuss putting LEDs on the function outputs of decoders, which require no special care to insure their safety.

If you are wiring them to the track or a power supply, there may or may not be other steps you need to take to assure their safety. More about this can be found on my website (www.mrdccu.com/curriculum/Lighting/LED.htm).

LED Anatomy

- Packaged LEDs include a small die (the actual device) packaged into an epoxy housing with external leads as shown in figure 3.
- Surface mount LEDs eliminate the epoxy housing and have the die mounted on a small ceramic holder with connection points on two sides as shown in figure 4.

Bi-Color LEDs

Observe how LEDs are built in figures 3 and 4. The die (the part that emits



Figure 3

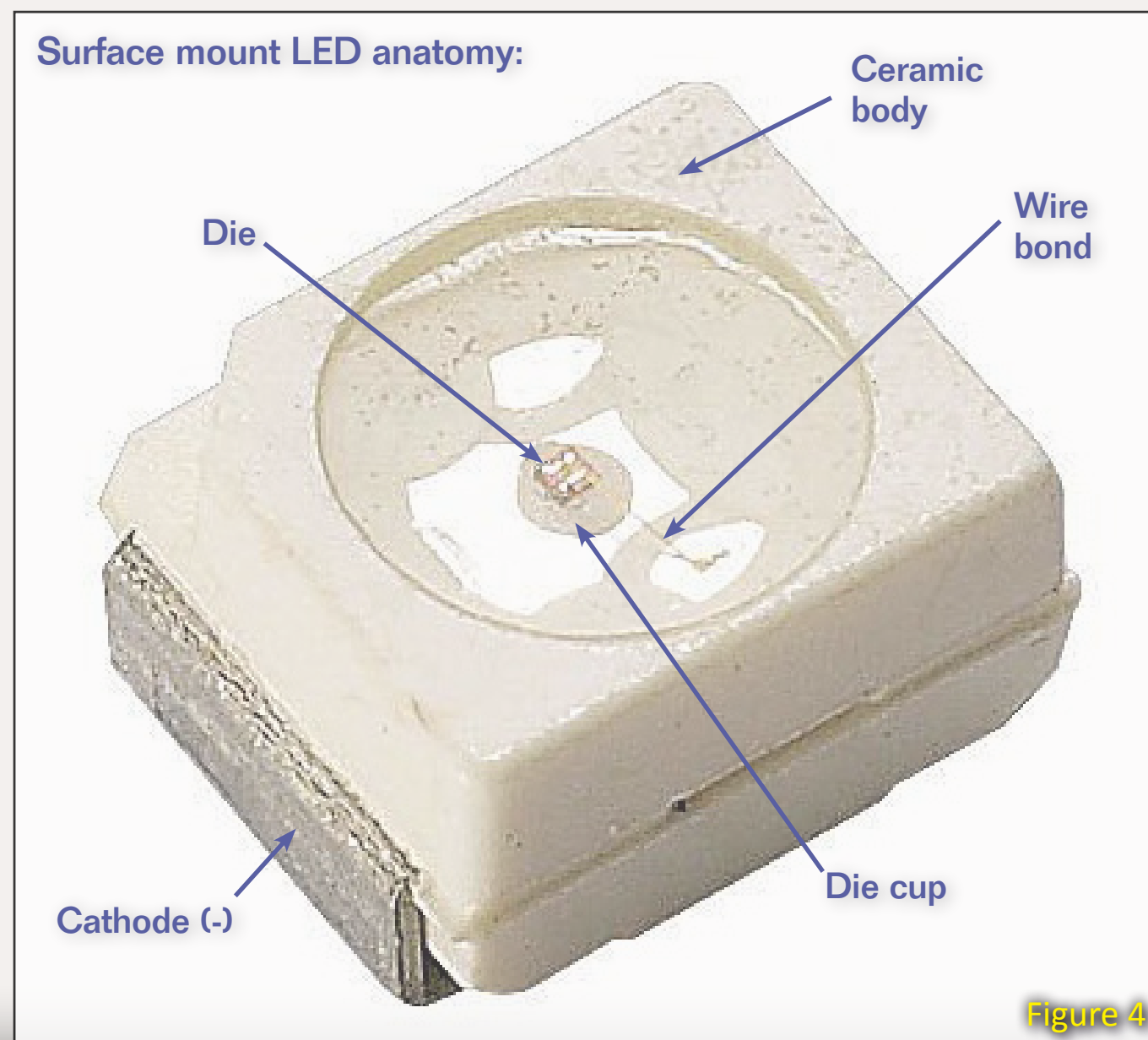


Figure 4

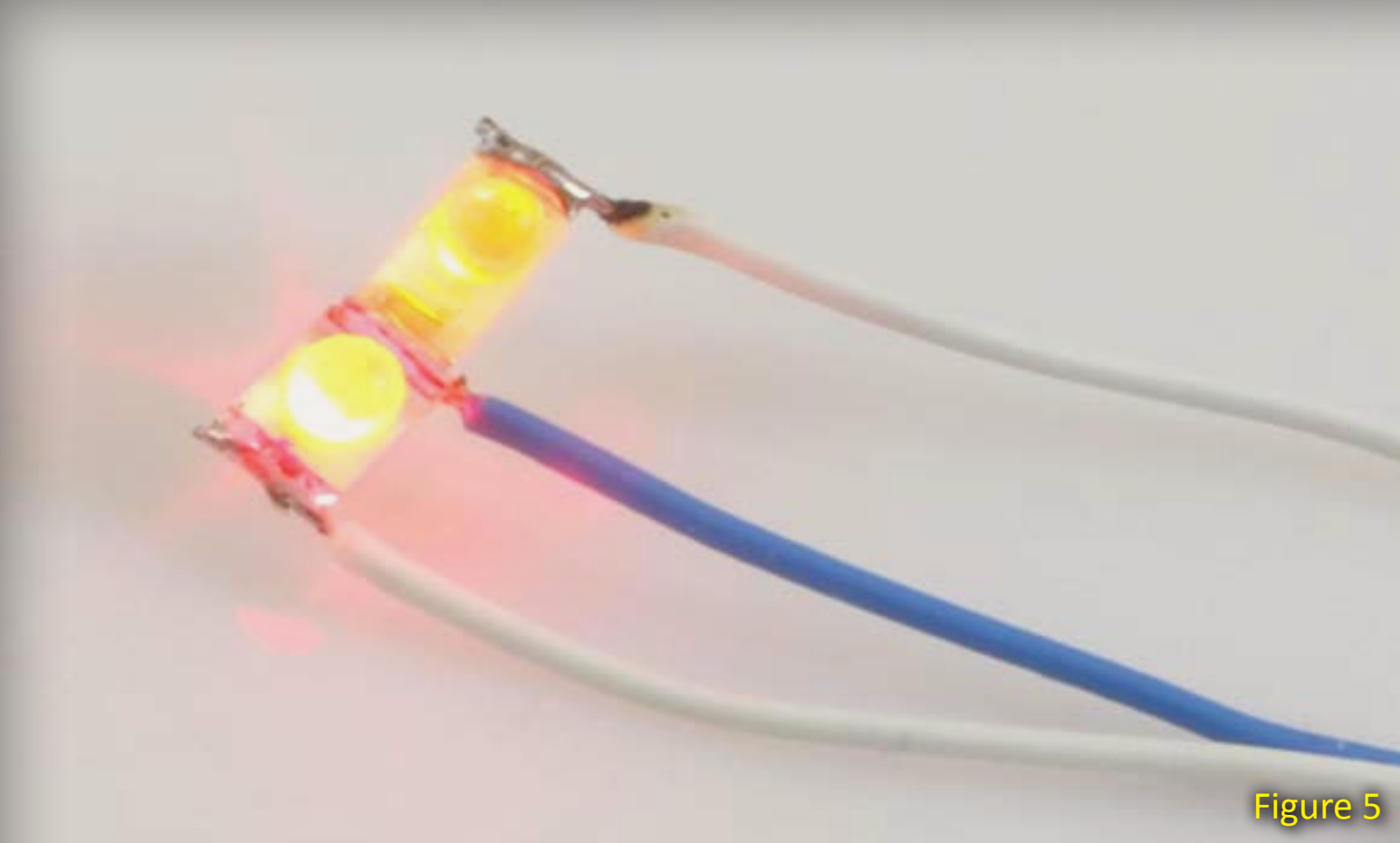


Figure 5

Figure 5: Common-anode LED made out of two SMD LEDs – lower (brighter) red and upper (dimmer) orange.

the light) sits in the (cathode) die cup. Common cathode is the simplest way to manufacture an LED with two colors. Two dies that emit different colors are placed in the same cup and connected to different anodes.

That's a problem for DCC installations because the decoder function outputs are connected to the cathode of an LED, not the anodes. To work with a decoder, a common-anode LED is required.

There are a few common anode LEDs, but they are rare. However, you can make your own by connecting the anodes of two SMD LEDs of different colors, as shown in figure 5. This is made of a red (lower) and an orange (upper) LED. Why would you want this

combination? I don't know! They were just colors that I had with similar packages in my stash! But this shows the concept.

As you can see in the photo, the two LEDs have different light levels when driven with the same (10 mA) current. Use different value resistors in series with each LED in the cathode (white) leads to compensate for this.

Polarity

You'll need to identify the polarity of your LED in order to wire it correctly.

The lead that connects to the DIE CUP is the cathode and should be connected to the negative voltage. With packaged devices or wired SMD units, this is traditionally the short wire. This

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LED Theory

Okay, let's get the boring part over. You may skip over this section for now, but I'll bet you'll be back here later to get a question answered.

1. LEDs are current-based devices. The light they generate depends on the current passing through them. They are NOT a linear device. An LED rated for 10 mA may produce 90% of its light at 5 mA. The amount of light you desire may be produced at 2 or 3 mA.

Control the current by placing a resistor in series with EVERY LED! See the body of the article on how to select resistor values.

2. LEDs are diodes. That means that current only flows through them in one direction. If you hook one up backward, it probably won't be damaged, but it isn't going to light up.

3. LEDs don't have large reverse voltage ratings. Don't use an LED as a rectifier.

4. Although the light produced by an LED depends on the current, an LED won't start conducting current and producing light until a certain voltage (called the "firing" voltage) is reached. Less voltage than that and you get no light. More voltage and they quickly go over-current and fail.

Each color has its own firing voltage ranging from about 2 volts for red to about 4 volts for ultraviolet. White LEDs usually need about 3 volts but that can vary, based on their design.

5. Don't connect LEDs in parallel. The firing voltage varies slightly between even identical devices. Placing multiple LEDs in parallel using a single current limiting resistor is a bad idea. The LED with the lowest firing voltage in the group will hog most of the current. Some LEDs with higher firing voltages may not even fire. Excess current will shorten the life of the lowest voltage LED. When it burns out (assuming it does not short in the process) the next lowest LED takes an even larger amount of current. You get the idea.

6 - LEDs emit a narrow band of wavelengths (color). Because white is a smorgasbord of colors, a single-wavelength device can never be white. Instead, the single-wavelength LED die is coated with a fluorescent material. When the LED shines on it, the coating lights up like a fluorescent lamp. The chemical makeup of the coating determines the color emitted.

The composition of the coating and the wavelength of the impinging light work together to set the color value. Since the firing voltage relates to the wavelength, white LEDs may operate anywhere from 2.8 to 4 volts.

Lots more theory is on my website (www.mrdccu.com/curriculum/Lighting/LED.htm).

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connects to the decoder function output (white wire, for example).

The other lead (usually longer) is the anode and connects to the positive voltage (blue decoder wire).

If you have an LED but can't tell which lead is the cathode or anode (often a problem with tiny SMD packages), there's hope. Connect a 2700 ohm resistor in series with a 9-volt battery or use the buzzer I mentioned in prior columns. Probe the LED with both polarities.

When the LED lights up, connect the pad or lead that is in contact with the positive side of the 9-volt battery to the blue decoder lead. The SMD LED video in the sidebar talks further about LED polarity.

Connecting LEDs

Connecting an LED with reversed polarity results in no light. Omitting a series (current limiting) resistor is likely to result in a very bright light, but only for a second or two. Either way, you put your LED at risk and may damage a decoder's function output. Do it right the first time and prevent damaged components.

The simplest way to limit the current flowing through an LED is to include a resistor in series with it. It makes no difference if the resistor is connected to the cathode or to the anode.

Folks have good reasons for putting a single resistor in the decoder's blue wire or a function wire. I've even seen

Hint for soldering tiny parts:

I refer to "tinning" in the LED wiring videos. This is a process where a bit of heat and solder are applied to a terminal or wire (or the soldering iron) to coat a surface with a thin layer of solder. A tinned surface is easy to join to another tinned surface. Just add heat.

installations where one resistor (smaller value) was placed in each wire. My preference, absent any other considerations, is to put a single resistor in the blue (positive) wire. But there is nothing magic in this, it's just my preference.

Use one resistor for each LED. Putting multiple LEDs in parallel connected through a single series resistor is not a good idea. See the LED Theory sidebar.

If you want several LEDs activated by the same function, and they all need the same current to achieve the brightness you desire, you may put them in series (until the total voltage drop gets close to the voltage output of the decoder) and calculate the resistor value with Ohm's law. This is an advanced technique for experienced installers. More about this can be found on my website (www.mrdccu.com/curriculum/Lighting/LED.htm).

What resistor to use?

The total resistance needed in series with a single LED can be calculated. However, I've created a table of total resistance (sum of all resistors in series with a single LED) vs. current flow for

A video showing how I add resistors to my standard bodied LEDs and apply shrink tubing to them.



This video shows wiring SMD LEDs and using Tamiya paint to adjust their color. Don't expect 100% success when working with these tiny parts – I always lose some physically and electrically. It's cheap insurance to buy extras.



Resistor Picking Table

Resistance	Current
750 ohms	11 mA
1000 ohms	8.5 mA
1500 ohms	6 mA
2100 ohms	4 mA
2700 ohms	3 mA
4700 ohms	2 mA

Table 1: Resistances vs current limiting, assuming a 14 volt DCC waveform.

a 4-volt LED, assuming a 14 volt DCC track voltage. Higher DCC voltage or lower LED voltage will increase the current slightly – just use one size larger resistor value from the table.

As you can see, 1000 to 1500 ohms will get you going with less than 10 mA current. With modern 10 mA rated LEDs, this resistor value will probably give enough light for your needs and keep LED operating life up in the tens of thousands of hours.

Resistors have no polarity, so it doesn't matter which lead is connected to the LED or the decoder. Power dissipation is low enough in all cases that 1/8-watt or SMD resistors are adequate.

Note that above 2100 ohms it takes significant increases in resistance to effect much change in LED current.

Some ultra-efficient LEDs are rated at 2 mA. With these LEDs, 4700 ohms would be a MINIMUM value.

Blue-box Athearn (HO)

One of my favorite LED installations is a blue-box Athearn diesel. Last month, I showed how to isolate the motor from the frame. Now for the lights. Refer to figure 6.

The LED is mounted “periscope” style above the rear power tab. The anode (long lead) connects to the track power through the tab. The cathode (short lead) connects through the dropping resistor to the yellow decoder lead. The LED leads and resistor are covered with heat-shrink tubing.

Connected this way, the LED is off for about half the time, due to the nature of the DCC waveform. You may want to use one value smaller resistor from Table 1 to restore brightness.

I used a 5 mm LED for this locomotive – it is the same price as a 3 mm, but it throws a wider beam.

I carefully adjust the LED height so that it is in line with the lens on the Athearn shell. Point it toward the rear when the truck is straight. The LED pivots a bit as the loco goes around corners, but not enough to show much light variation through the lens. Because of the distance between the LED and the lens, a golden-white LED works fine and gives good color rendition.

Atlas C-424 – sound (HO)

In figure 7, you get a look at a sound decoder installation in an Atlas C-424. The speaker takes a bit of the room normally used for the rear light.

So an LED assembly, built as shown in the LED wiring video, is taped on top of the speaker to shine through the rear lens. In this case, I used a 3 mm sunny-white LED, the customer's preference.

Atlas RS-1 – sound (HO)

Figure 8 gives you a peek at how I handled a sound installation in an Atlas RS-1.

In order to get the speaker in the rear of the loco, I needed to remove the Atlas light pipes which direct light to the end lights and the number boards. It was deemed a good tradeoff to forego the number board lights in order to have good sound in the loco.

A sunny-white 5 mm LED was glued into the shell in place of the light pipe, using the Faller Expert cement discussed in a prior column. The Faller Expert gives a nice optical surface instead of crazing the LED lens, as many styrene cements do.

The number boards could be illuminated by gluing SMD LEDs to them. Wire each front LED in series with an appropriate resistor and connect both resistors to a function output. Connect the rear LEDs to a different function output.

The loco used in the LED lighting effects video was done similarly to the one in figure 8.

Figure 6: Golden-white LED in an Athearn blue-box locomotive.

Figure 7: Atlas C-424 sound installation.



Figure 6



Figure 7



Figure 8

Figure 8: 5 mm LED as part of an Atlas RS-1 sound installation.

Figure 9: Kato RS-2 light pipe replacement.

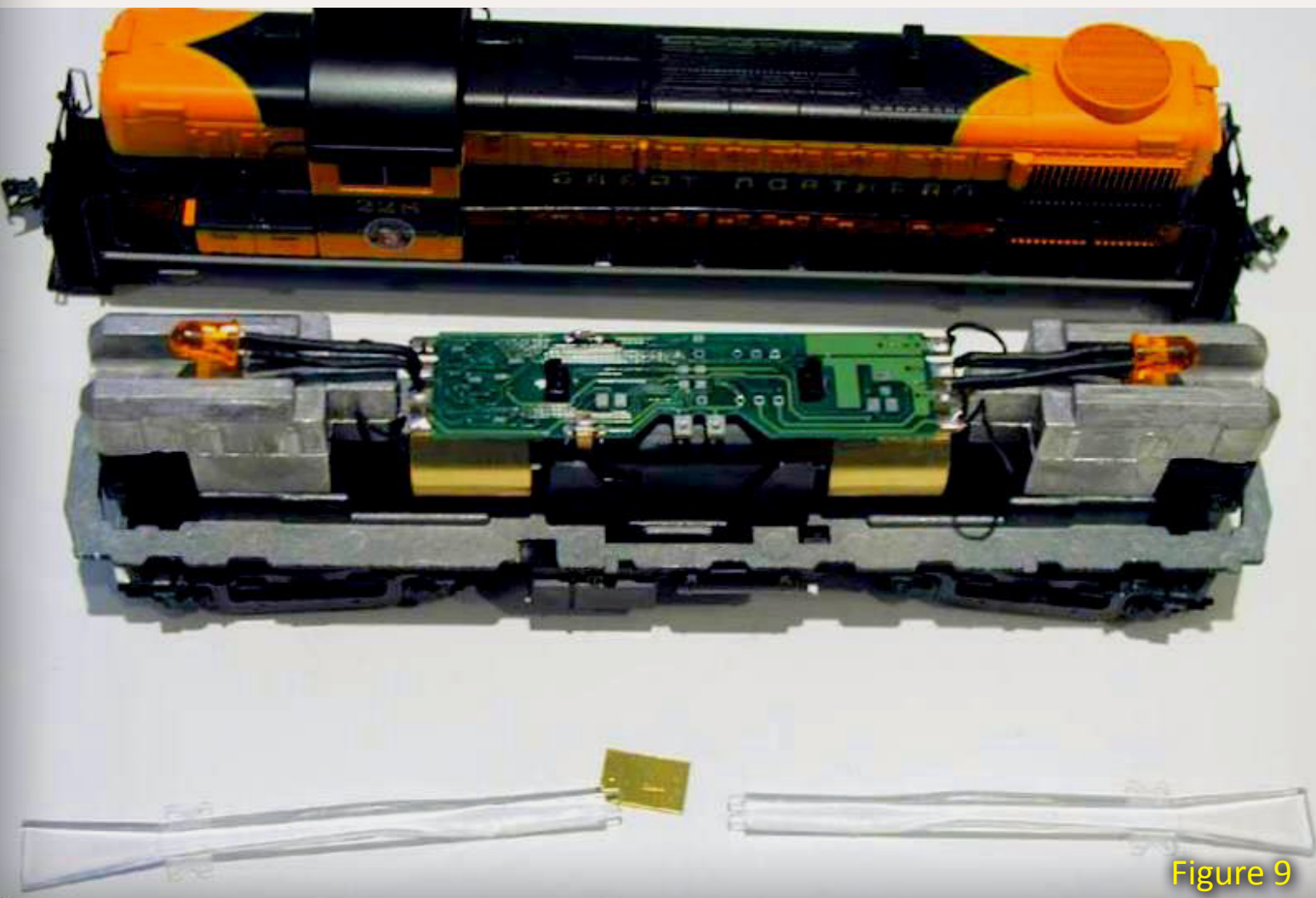


Figure 9

Early Kato diesel (HO)

The early Kato diesels had a gray light board with a bulb in the middle of the loco and light pipes to each end.

Here's an easy way to install directional lighting in them.

Remove the light pipes from the shell. If they are needed for lenses, cut them short and cover the end with Faller Expert cement to give an optical finish.

Install an Atlas light board style decoder. Now for the LEDs.

If you use a decoder like the TCS A4X or A6X, that have 1000-ohm resistors built-in, you can hook the LED to the correct terminals on the board. Observe polarity when connecting the LEDs and cover the leads with heat shrink tubing.

For decoders with track-voltage light outputs, (the majority of decoders fall into this category), follow the directions in the sidebar video to prepare an LED with a resistor. Stop before cutting the resistor or LED lead or installing shrink tubing. Position the LED where you want it to be in the final installation and then cut the LED lead to length. Cover it with shrink tubing and solder it to the decoder circuit board. Then cut the resistor lead to length, insulate it with heat shrink tubing and solder it in place.

Figure 9 shows the resulting installation in an RS-2, using golden-white LEDs.

Many LEDs in a shell

Earlier we talked about putting lots of LEDs in your locos. SP fans will want to take notice here – SP never seemed to meet a light it didn't like!

How do you keep the fuss to a minimum when you are operating lots of LEDs in the shell?

Steve Gill of Ulrich Models has come to your rescue. He offers a board for well under \$10 that can connect up to eight LEDs through resistors to the function outputs from your decoder. As you can see in figure 10, there are pads to connect to up to 8 functions and the blue wire at the top (inputs). The bottom

Figure 10: Ulrich Models' LED resistor boards.

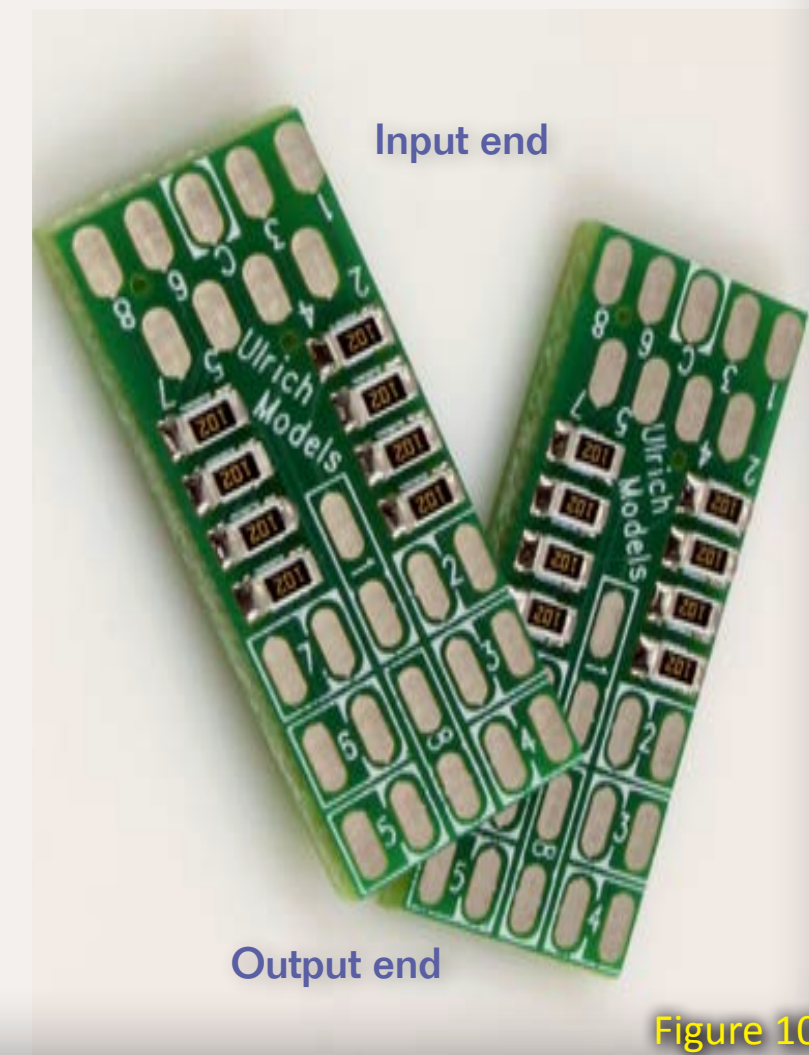


Figure 10

(outputs) connect to the LEDs. A single function can be connected to multiple inputs if you want several LEDs to be activated at once. Each LED will have its own series resistor.

The boards are available unpopulated, or populated with resistors of your choosing, for slightly more money.

See Steve's website (www.ulrich-models.biz/servlet/the-597/LED-Lighting-Resistor-Board/Detail) for more details and an installation photo.

Light pipes

What about the situation where you need to illuminate a light pipe with an LED? Figure 11 shows a light pipe for dual headlights with marker lights on each side of the loco. To illuminate all of these, a sunny-white LED is glued to the light pipe with Faller Expert cement.

Start by cutting the light pipe to the desired length.

Using a cutoff wheel in a Dremel tool, flatten the round nose of the LED. Don't

Figure 11: A LED glued to a light pipe with Faller Expert cement.

take off so much material that you get close to the die or wires inside the LED. Also flatten the end of the light pipe.

Cement them together with Faller Expert cement. Polishing the surfaces isn't required – the Faller cement creates an optical interface between the LED and light pipe.

After it dries, install it in your loco shell.

Summary

Okay, we've covered a lot of territory here, with a lot more on my website. You may need to go over this column several times, if this is new to you. If you are an old hand, perhaps you have seen something here or in the videos will that give you some new ideas or insight.

Let me know what you think of the videos – click on the [READER FEEDBACK](#) link and leave a message. Don't forget to register your vote for this column. Happy modeling!

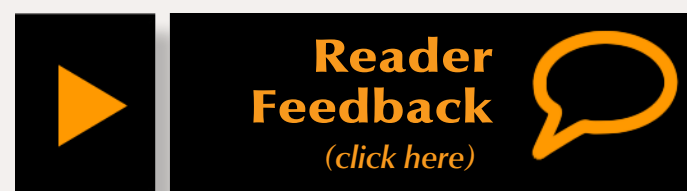


Figure 11

Delrin to Styrene to Metal OH MY!



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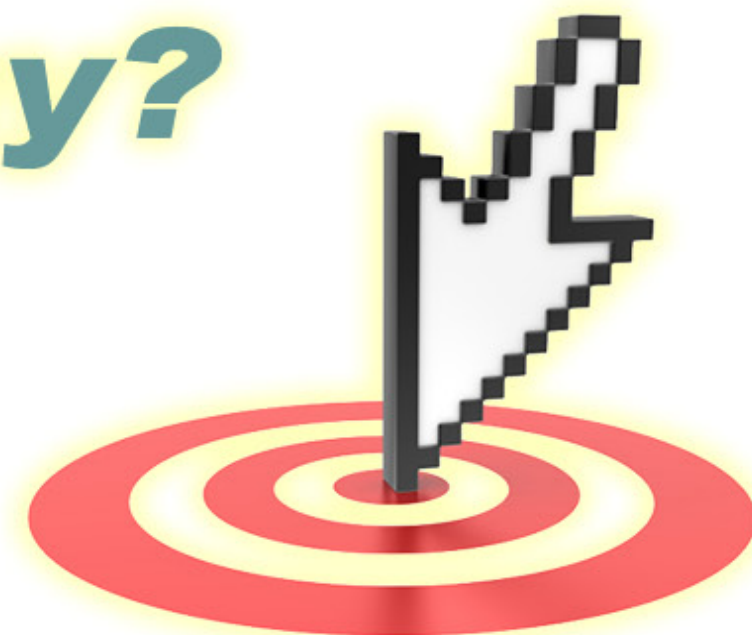
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About our N-scale columnist



John Drye is our N scale editor and columnist.

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COMME-N-TARY: Layout design concepts

Modeling in the hobby's most eNgaging scale



Layout design ideas to fit N scale size spaces ...

The size of N scale equipment and the small radius curves allow N scale modelers to fit a lot of railroad into a relatively small space. This space is often a bedroom or rec room with access along a wall. Unlike basements or attics, where access is from a center-of-the-room stairwell, side access poses some layout design challenges. This column will suggest some ways to address those challenges.

Layout Configurations

The ideal layout space includes an entrance in the center of the room. A center entrance lets the layout run around the walls of the room without having to span a doorway (figure 1). Peninsulas may extend from the walls

Figure 1: An entrance in the center of the layout room provides maximum flexibility in layout design. A continuous run is possible without duck unders or turnbacks.

to create a longer mainline run. In my opinion, benefits of a continuous run include:

- extended test-running of equipment
- easier re-staging of trains during an operating session
- helps to keep loads and empties moving in a consistent direction without having to load and unload cars – important for coal-hauling railroads like the Pennsylvania.
- Skip the continuous run and use a point-to-point design.
- A duck under across the entry door to create an around-the walls continuous run.
- Loop tracks back in a dogbone fashion, keeping the return trackage hidden from view.
- Leave the dogbone return tracks

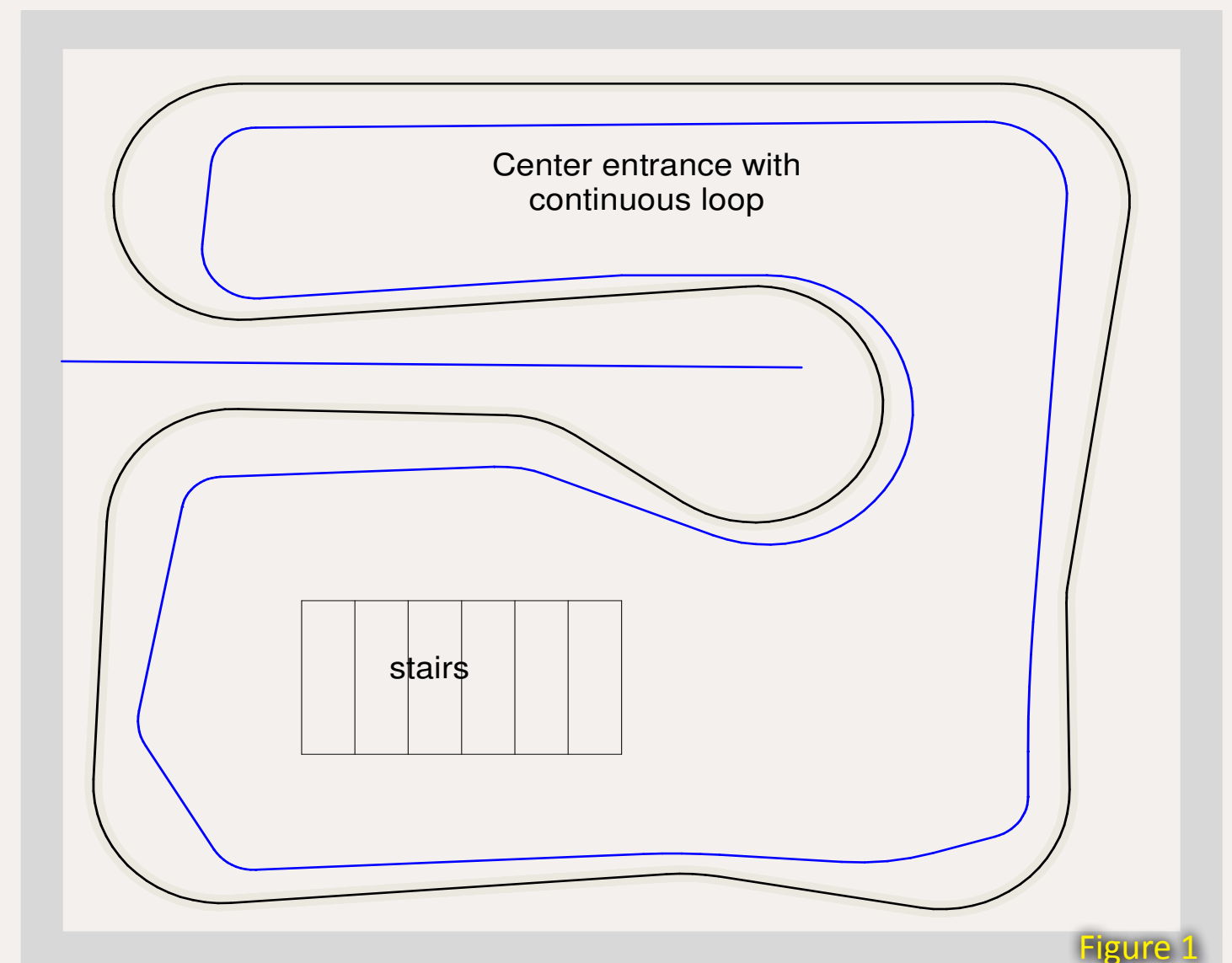


Figure 1

visible and let the mainline makes multiple passes through the layout.

Point-to-point layouts are easy to build and accurately mimic real railroads (which don't usually run trains in circles). They often focus on switching operations – great for small spaces. Trains and locomotives must be turned once they reach the end of the layout. There is (usually) no provision for continuous running (figure 2).

Duck unders require the bottom of a layout to be at least 50" from the floor. As your age (and stiffness) increases (and your friends', too), the challenge of

negotiating a duck under will increase. Putting handrails along the sides of the duck under mitigates the difficulty of ducking. Crew rest their forearms on the rails to support themselves and slide through.

Lift out or swinging roadbed sections over a duck under allow folks easy entry and exit from the center operating pit. Making a reliable removable section is not trivial. The layout room can change dimensions as the seasons change or the house settles, requiring extra bracing to keep the (re)movable piece fitting well. Nevertheless, lift

out or swinging layout sections can be made to work reliably.

If you have your heart set on a continuous run, a duck under, possibly with a removable layout section, may be what you need (figure 3).

A layout can be designed with a "hidden" return connection for continuous running. A means of monitoring the progress of hidden trains must be provided. Hidden trains don't provide much operational interest so avoid this when possible. Some people include staging tracks along the hidden return

route. If you do this, good access to those tracks is mandatory (figure 4).

Sincerity

Sincerity is a term credited to John Armstrong, the late dean of track planners. It refers to a layout where the mainline passes through each scene only once – prototype railroads never (well, almost never) have a mainline that doubles back on itself to pass through the same area twice. Because of this, a sincere layout may feel more realistic.

However, when mainline length is the most important design criteria, and multiple decks aren't feasible, model railroaders resort to twice-around track plans or folding track back on itself.

In a twice-around design, the mainline may visit each town twice. Separating the two loops vertically, even by less than an inch, helps operators keep them separate in their minds.

Direction Changes

It's easiest for a visiting operator to keep track of which way they are heading if left and right, when facing the layout, are always the same compass direction.

For example, on a "north facing" layout, left is always railroad west while right is railroad east. A "south facing" layout is the opposite with left being railroad east. Because we're used to reading maps with north "up", a

Figure 2: With an entrance at the side of the room, one option is to run a point-to-point design around the walls in order to avoid duck unders and turnback trackage.

Figure 3: An alternative approach for a layout with a side entrance is to provide a duck under, where operators dip under the tracks to access the layout. This works best with 50" or higher layouts. Some owners provide a rolling stool to help folks under the tracks.

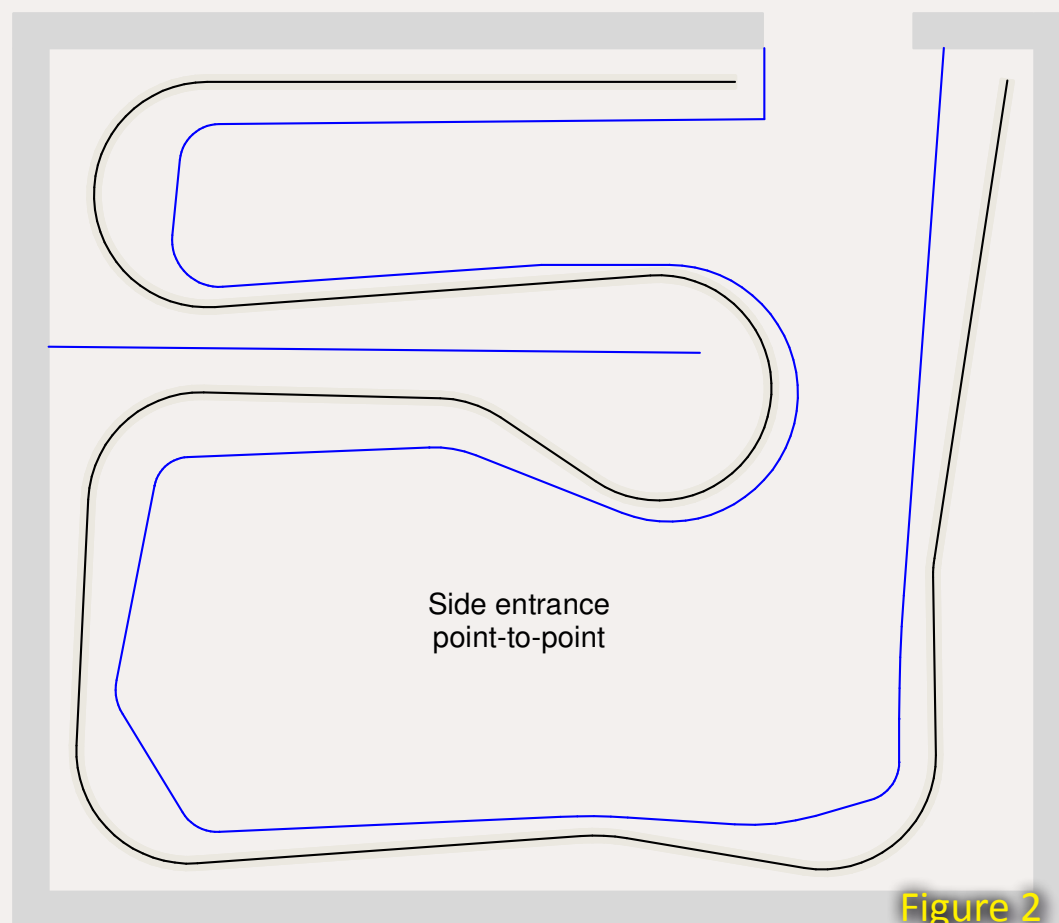


Figure 2

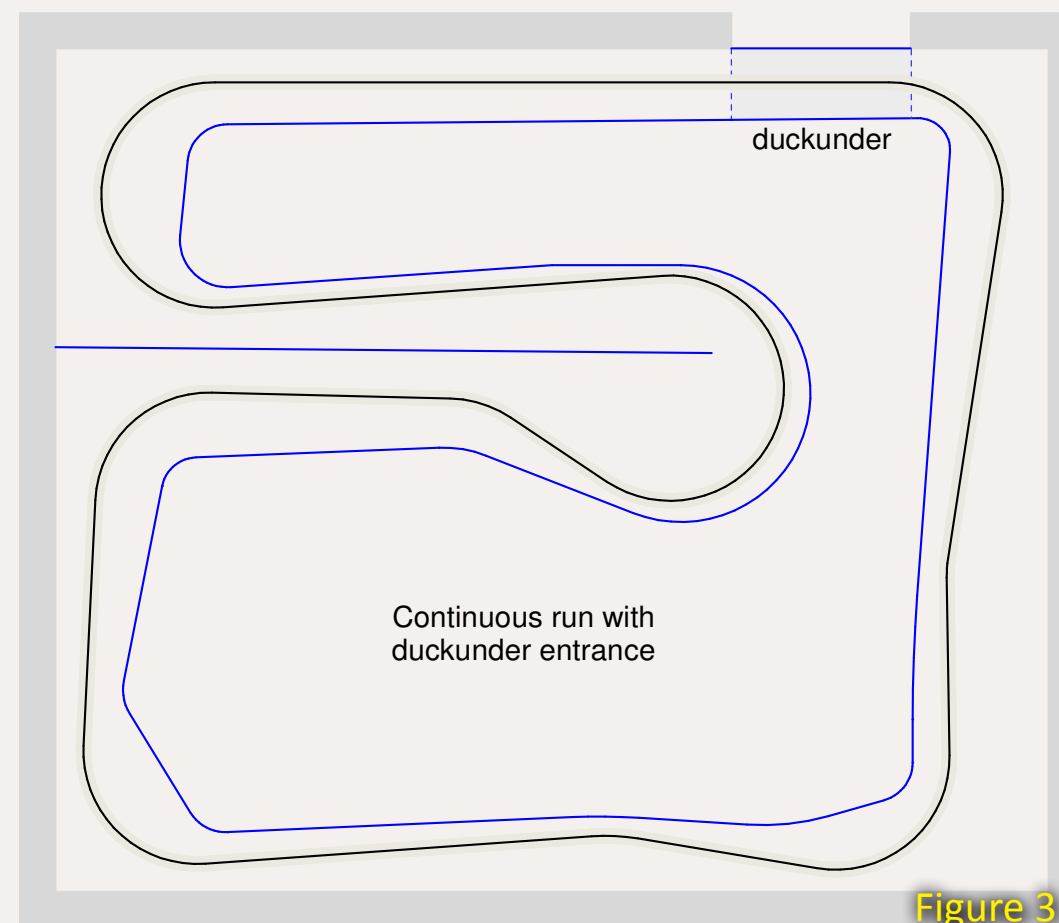


Figure 3

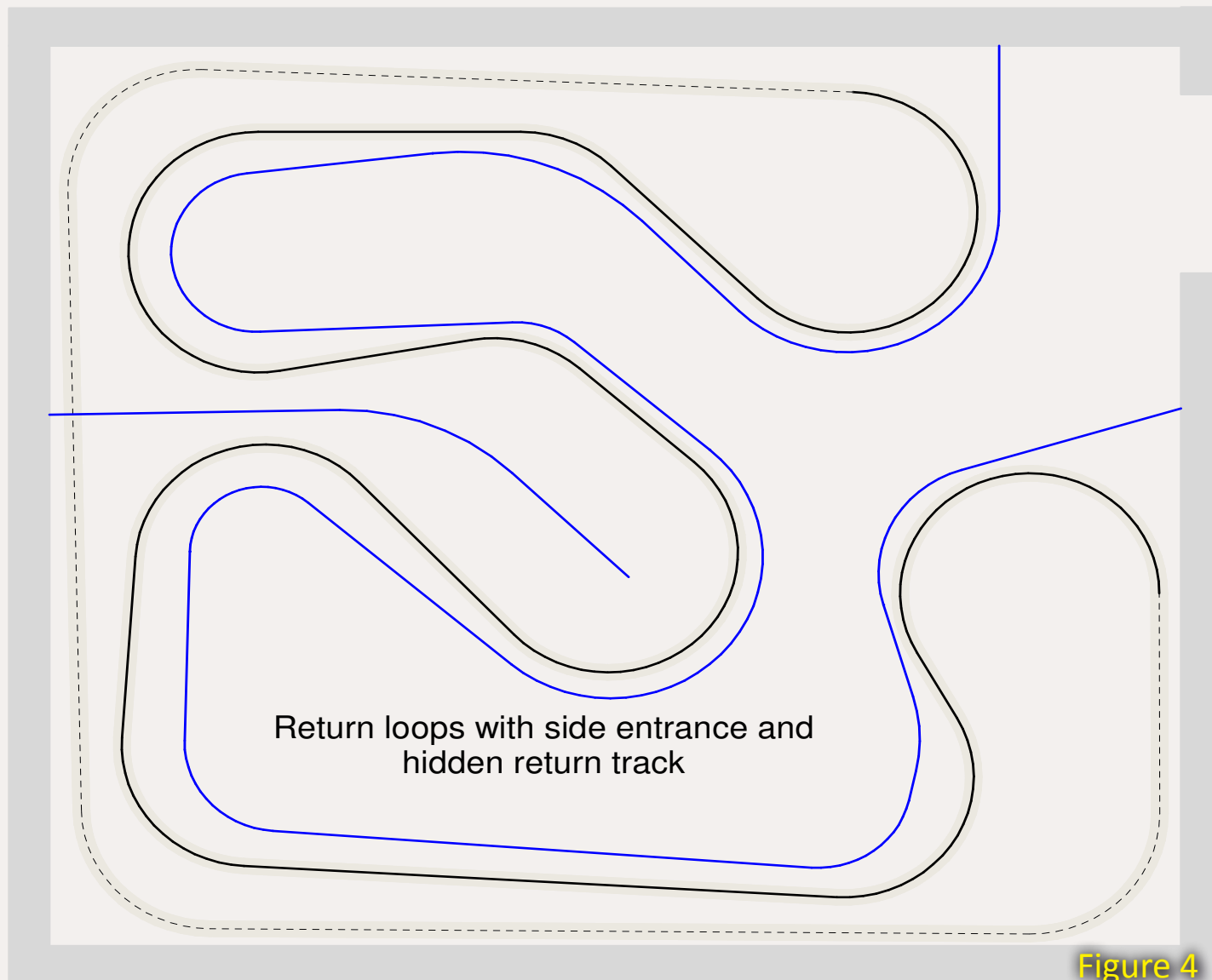


Figure 4

Figure 4: The hidden “return” track provides a continuous connection between ends. Care must be taken to provide access to all hidden track in the event of a derailment, collision, or required maintenance.

north facing layout feels natural to the crews.

The biggest cause of “wrong way” tracks (other than in so-called spaghetti bowl designs) are multi-deck layouts where one deck is “north facing” while another is “south facing.”

If your track plan calls for lots of track “going the wrong way”, you may be able to hide the wrong-way trackage behind a low hill, woods or other terrain obstruction to separate the two

sections of track that contain trains traveling in opposite directions. Be sure to leave a few gaps in the scenery so the operators can observe the progress of their trains. In N Scale, the obstruction needs only to be an inch or so tall. A low ridge topped by a line of trees is perfect.

You might also place the return track immediately adjacent to the right-way main line and scenic the area as if it were double track. We are used to seeing trains head in opposite

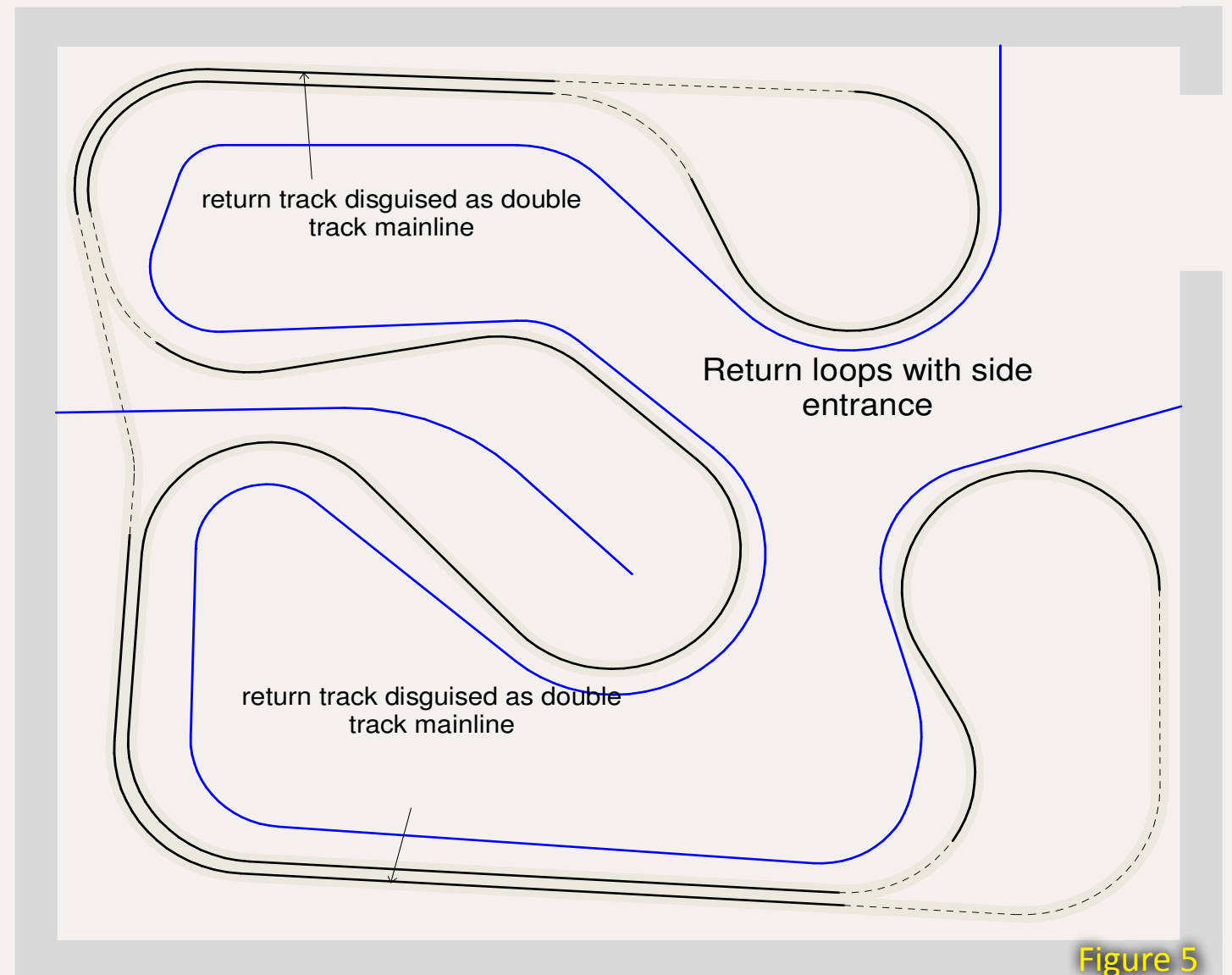


Figure 5


Figure 5: The hidden “return” track has been “daylighted” in two places and disguised as the opposite direction track of a section of double track mainline. A crossover in these locations will create a reversing loop.

directions. Except for open top cars, such trains seem natural. Some railroads even sent coal loads in both directions, providing justification for wrong-way black diamonds.

My Pennsy Layout

As it turns out, sincerity triumphed on my current Horseshoe Curve layout. I was also able to keep direction consistency – left is always west and right is always east when facing the layout, but I had to make some

other compromises. The continuous run I wanted required a duck under / lift out section – luckily, my layout heights of 50” and higher made this a bit more practical. I also had to punch a hole through a wall and locate staging in an adjacent room to accommodate the four-track mainline.

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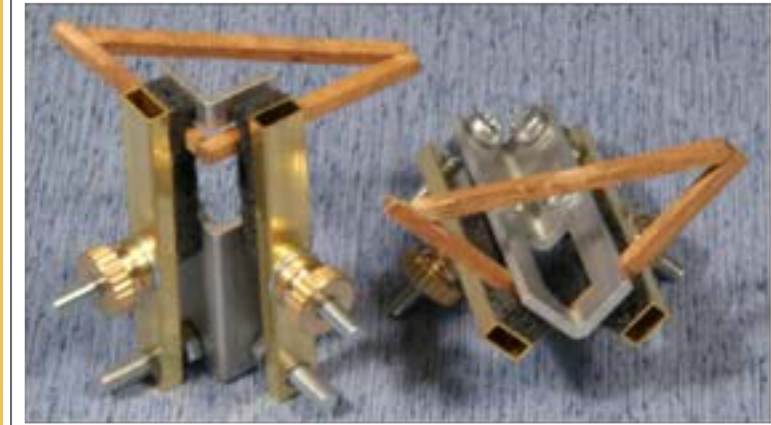


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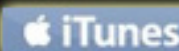
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Build an **AUDIBLE** Short Detector for Track Wiring

– by Kevin Rowbotham



Figure 1



It is much too easy to accidentally connect track feeders incorrectly. From underneath the layout, north rail and south rail, inside and outside rails are hard to keep straight. Throw in a couple of twists and turns and before long, knowing “which rail is up” becomes a serious challenge.

Neglecting to test the layout after adding each feeder wire can lead to mystery shorts – which of the two dozen feeders you just installed is the culprit? Troubleshooting such prob-

lems can easily test your debugging skills, not to mention your patience!

In a recent MRH Blog post, (model-railroad-hobbyist.com/node/6511) an MRH subscriber needed help finding the cause of a short in his DCC layout. The short had appeared at some point while he was wiring feeders between the tracks and the DCC power bus. I was going to be doing a lot of wiring in the near future, so I followed the discussion closely looking for some good tips to avoid the same sort of trouble.

There was lots of good advice, but what follows was, in my opinion, the most useful tip of all.

Figure 1: Kevin built this short detector in one afternoon using parts from his electronics scrap box.

Figure 2: The parts I need. A: 12 volt beeper/buzzer. B: Battery contact clip for a standard 9 volt battery. C: Two mini test clips. D: 2-conductor 18 gauge wire, and a 9 volt battery to power the tester.

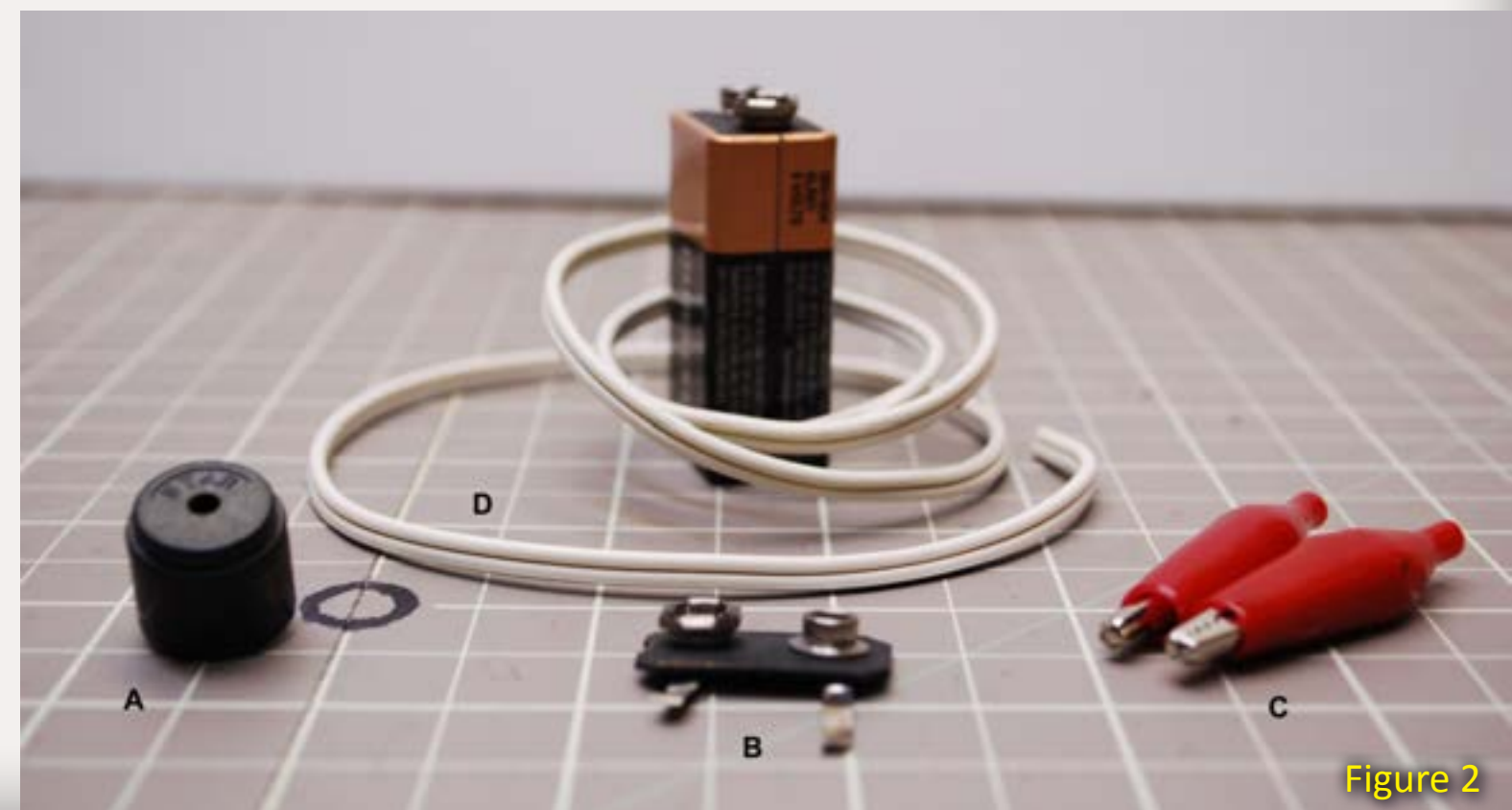


Figure 2

“I’ve heard of people connecting a audible continuity checker to the rails. The second you connect up something wrong, the continuity checker buzzes, alerting you immediately that the connection you’re about to make is a problem. Most often, the solution will be more rail gaps somewhere.

If you don’t test often while doing wiring, the mystery shorts that frequently result could be anywhere - just as you have found.”

- Joe Fugate

Sage advice. I decided to build my own Audible Track-Wiring Short Detector without delay.

The parts needed for the short detector were already in my parts drawer (figure 2). Check the Bill of Materials for a complete parts list. The one piece I was missing was a 9 volt battery snap without wires. I got one by disassembling a dead 9 volt battery and rescuing its contact board (figure 2 – item B, figure 5).

Bill of Materials

- 2 9 volt battery – one can be dead
- 1 12” length of 2-conductor, 18 gauge speaker wire

Part numbers from All Electronics www.allelectronics.com

- 1 1-12 VDC piezoelectric beeper, #SBX-40
- 2 Insulated mini alligator test clips, #ALG-36

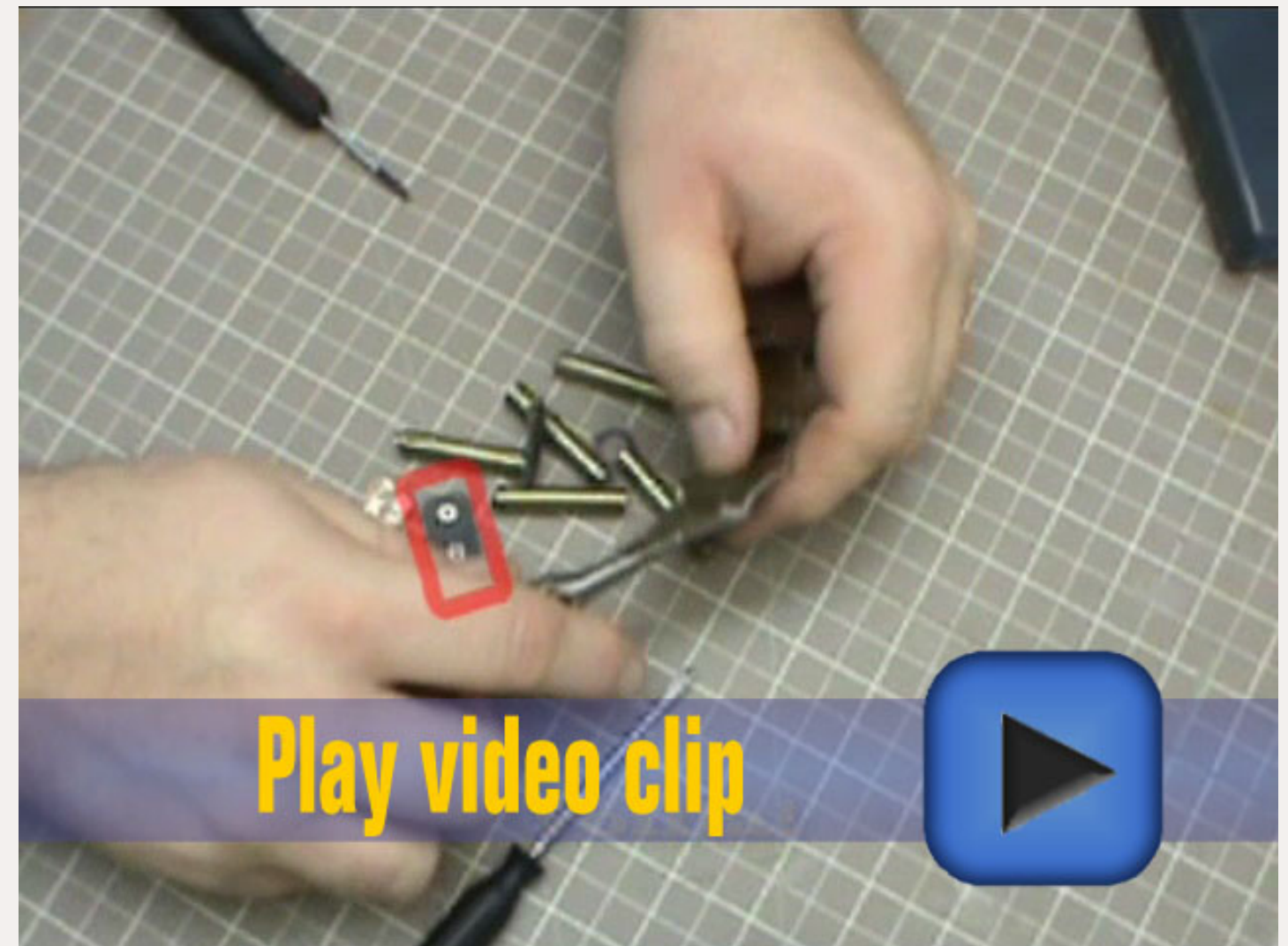
Watch the video for a better idea of how I performed a caesarean section of the battery to remove the board.

I used a small flat-blade screwdriver to pry the side seam of the battery casing open and needle nose pliers to open it up. There is nothing dangerous inside, but be careful not to cut yourself on the sharp edges. Inside you’ll find six tiny, 1.5 volt, AAAA cells. If you’re dissecting a dead battery, recycle these, if not, you can save them for some other use.

Once the case is open, you may have to cut some heavy foil strips to remove the contact board, (figure 3). This depends on the battery brand and type.

Refer to figures 5 and 6. I solder one wire from the 2-conductor speaker wire, to the negative contact board terminal. I solder the other conductor from the pair to the buzzer’s negative contact pin. I am careful not to apply too much heat because the buzzer is somewhat heat sensitive.

Then I solder the buzzer’s positive contact pin to the positive contact on



Video 1: Dissecting a 9 volt battery to extract the contact board.

Figure 3: A battery contact board extracted from a 9 volt battery.

the battery board. Finally, I slip the plastic alligator clip covers over the free ends of the wires and solder the bare ends of the two wires to the individual clips (figure 7). Slip the insulating covers down over the test clips to complete the wiring.

I use electricians tape to be sure there is no chance for the negative buzzer pin to short to the negative contact (figure 8). I used hot melt glue to fill the voids between the buzzer and contact board, making the assembly into a single unit



Figure 3

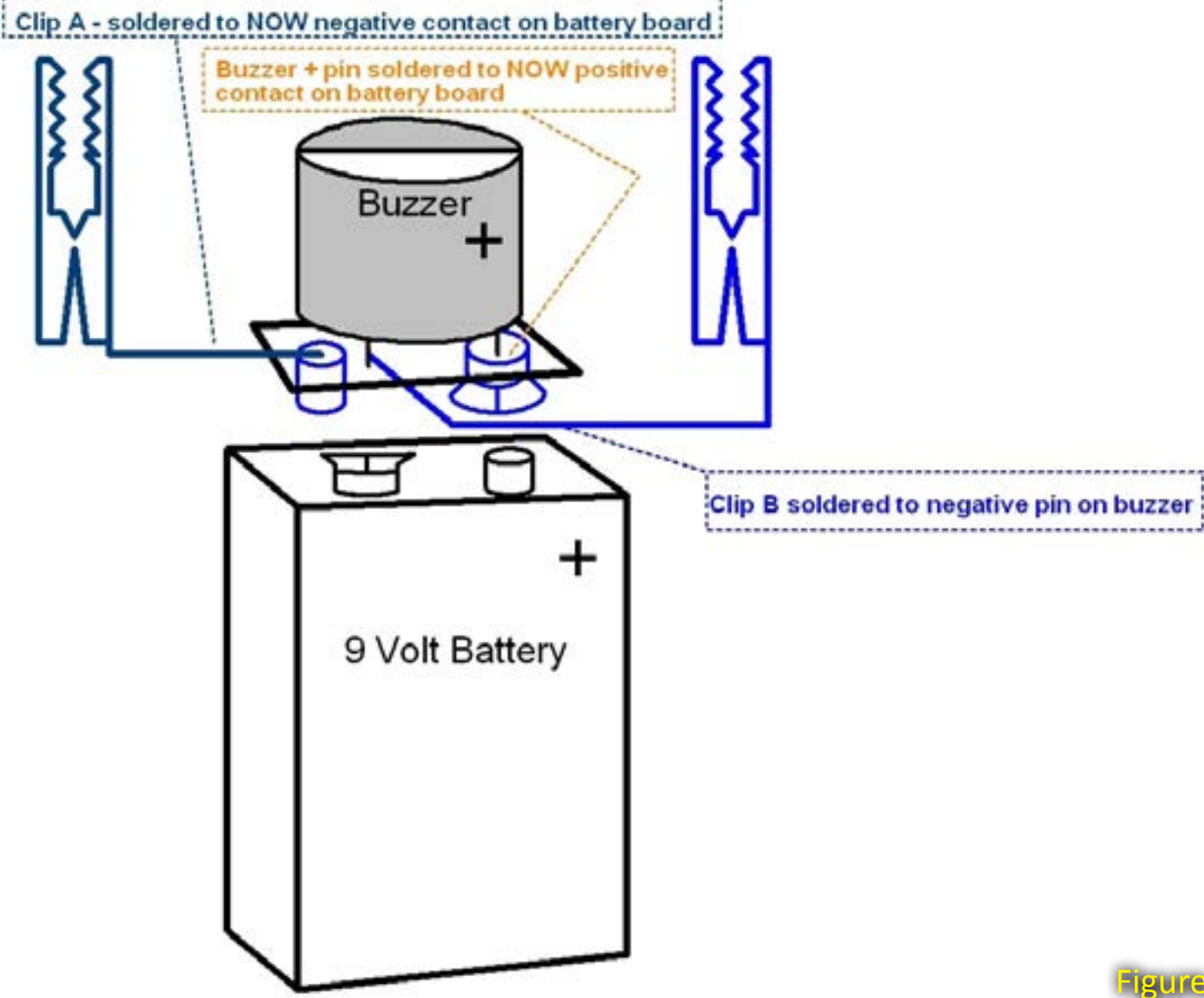


Figure 4

(figure 7). Watch out for too much heat around the buzzer! Apply the hot glue gradually, one side at a time and let it cool before adding more.

Once the glue sets, it's time to test it. Snap the detector onto the 9 volt battery, keeping the test clips from touching – you should not hear anything. If you do, double check your wiring. If that worked, touch the test clips together and the buzzer should sound.

If not, there is either a wiring problem, the battery is dead, or you cooked the buzzer with too much heat.

A couple of safety rules:

- Be SURE your DCC command station or booster are NOT connected to the track before hooking up the short detector.
- Be SURE to DISCONNECT the short detector before reconnecting the DCC system.

Figure 4: Note the three solder connections in the wiring diagram.

Figure 5: Following these steps makes assembling the project a simple matter. Take care with the polarity when the contact board is snapped to the battery to make sure the polarity is correct for the piezoelectric buzzer.

Figure 6: Once the soldering is done, wrap a piece of insulating tape over the exposed negative contact to reduce the possibility of a short. Better safe than sorry.

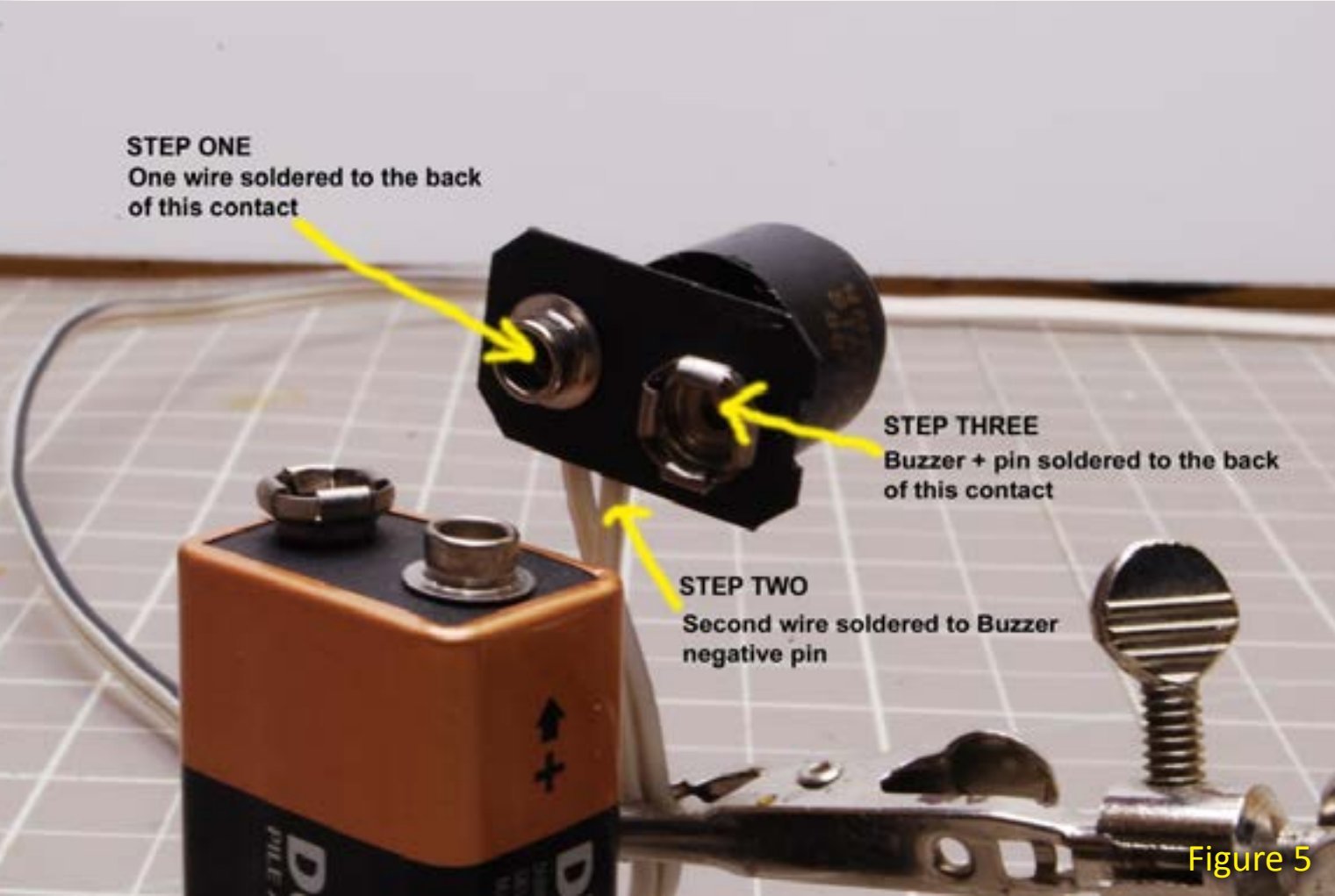


Figure 5

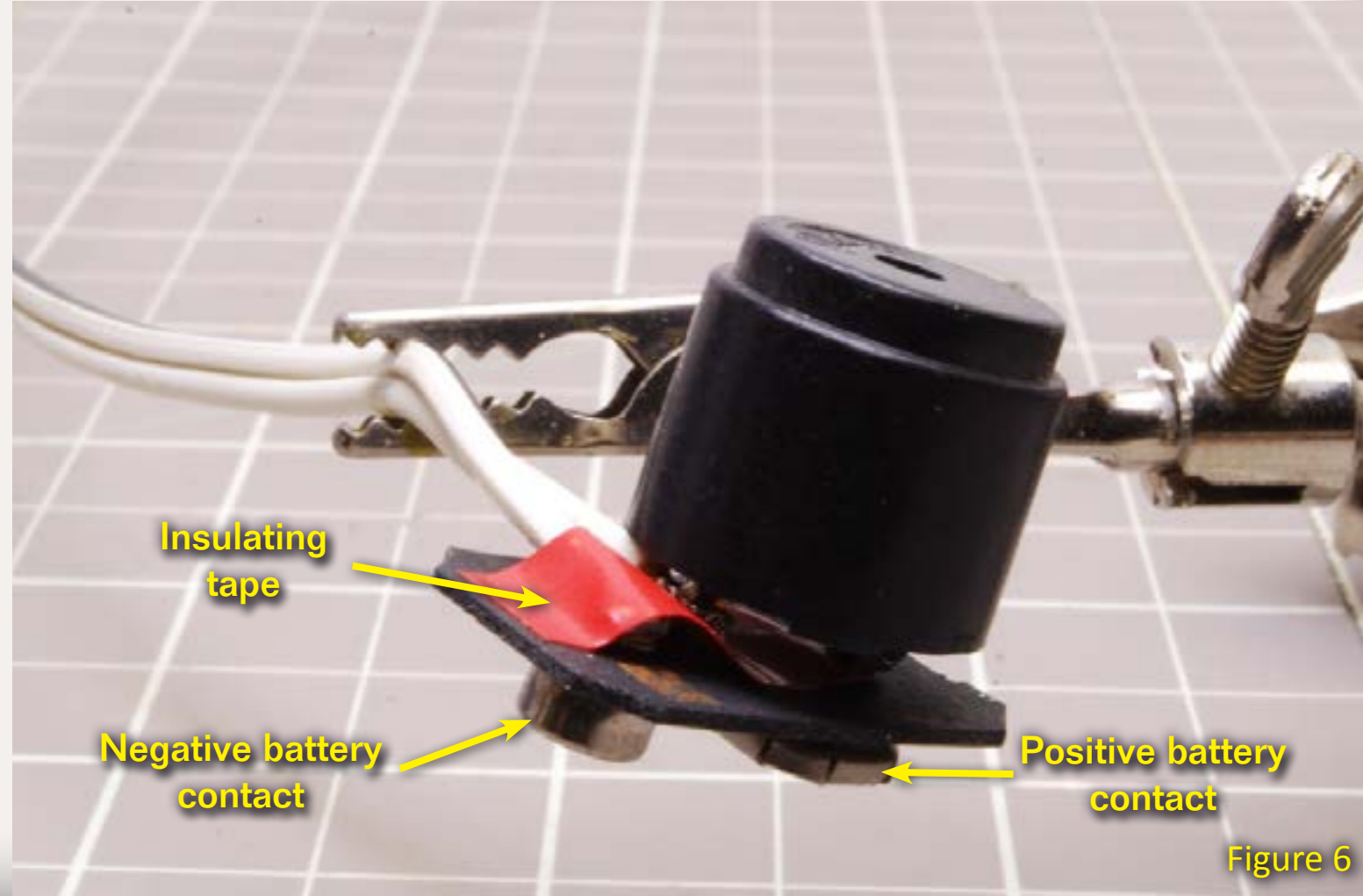


Figure 6

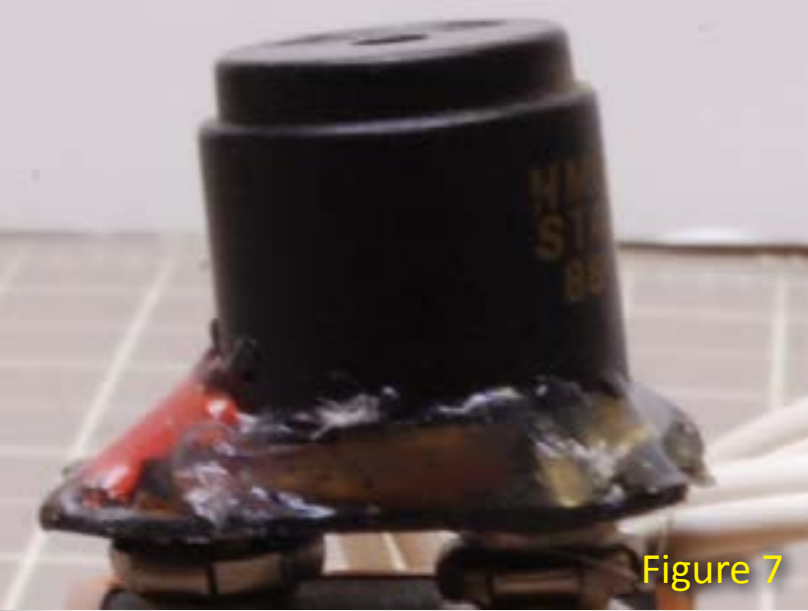


Figure 7

Figure 7: Hot melt glue works well, to fill the gap and hold the parts firmly together. I take my time with the glue, allowing cooling before filling more of the gap.

Video 2: Testing the tester.

To use the detector, attach the test clips to the section of track where you are working – one clip to each rail or buss wire (figure 8). If your rail gaps and feeders have been correctly installed you should hear blessed silence – no shorts! However, if you erred somewhere in your wiring, your ears should be ringing.

Now I can add multiple feeders without fear I'm creating a mystery short. My noisy friend will let me know when I go astray.

 **Reader Feedback**
(click here) 



Play video clip



Kevin Rowbotham grew up on the Canadian prairies, listening to the sound of CN freights and yard switchers working on wintery Saskatchewan nights. He loved trains at an early age; reading train stories, rail fanning, and after Christmas 1975, HO railroading with a set found under the tree.

He already had a keen interest in electricity and electronics. Model railroading provided another outlet for the interest. Not long after Christmas, a sheet of plywood was purchased, track was laid, wires were strung, and a model railroader was born. The rest is history.

Kevin still lives on the plains of Saskatchewan with his wife Arla, and their two sons, Noah and Ethan. His other interests include: his family, reading, photography, video editing, music, electronics, and old Chevy trucks.

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Installing a Semaphore Signal on My Donner Summit Layout Using a Servo Drive

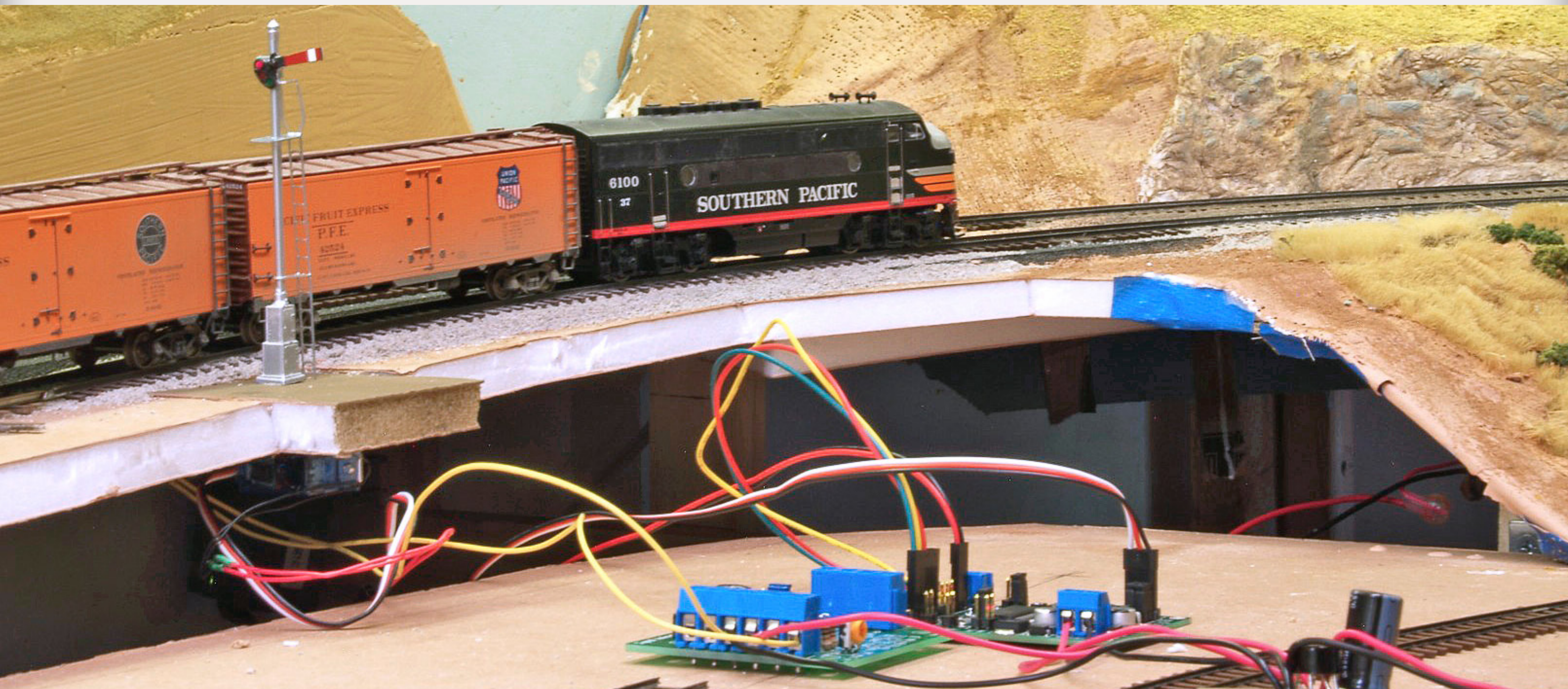
– by **Duncan McRee**
Photos by the author

Combining an R/C aircraft servo with a little electronics to bring a semaphore to life ...

Watching a semaphore change aspect as a train goes past is always fun and a detail I've been wanting to install on my Donner Summit layout. In this article I will describe how I placed a working semaphore at the town of Colfax using a servo as the

drive mechanism. The electronics were no problem as I am the owner of Tam Valley Depot, so I have a nice board for driving a semaphore - the Dual 3-Way II. Among its many semaphore offerings, Tomar makes a nice lower quadrant semaphore which I thought would work well.

One nice feature of using the Dual 3-Way to motorize a semaphore, is that it takes advantage of the unique



nature of a servo to simulate the blade bounce at the end of their movement, that is often seen on prototype semaphores. All that was left was signal logic. Since I am not planning to have a full blown signal system on the Donner Summit, I used a Signal Animator board from Logic Rail Technology. This board uses a photocell to detect a passing train and turns the signal from permissive to stop. After the train passes it waits for a delay of about 10 seconds to release the signal. This simulates most of what happens on a real railroad as a train passes a semaphore and, as an animation for my layout, works very nicely. If you have a real signal system on your layout, it should be possible to adapt it to use the Tam Valley Depot Dual 3-way to drive a servo. In this case, the Logic Rail Technology Signal Animator board would not be used.

Note: In spite of my installing a semaphore I am NOT a signaling system expert and have very little interest in such systems. I am the wrong person to contact regarding signal logic. And I have NO opinion on what the best signaling system is, at all. On the other hand if you have a question about using servos for model railroading, please email me at dmcree@tamvalleyrr.com.



Figure 1: An eastbound freight heading out of Colfax has tripped the semaphore from permissive to stop as it heads out of town.

STEP 1: Semaphore Installation

I am going to show you how I installed the semaphore on a piece of left-over 1/2" gatorboard at my bench. Later I will install it on the layout by cutting a slot in the roadbed. This is a lot easier in many cases than installing in place, trying to align things while upside down and reaching in to cramped access. Since I have staging under this section of the layout I am not sure I could have successfully installed it in place in any case!

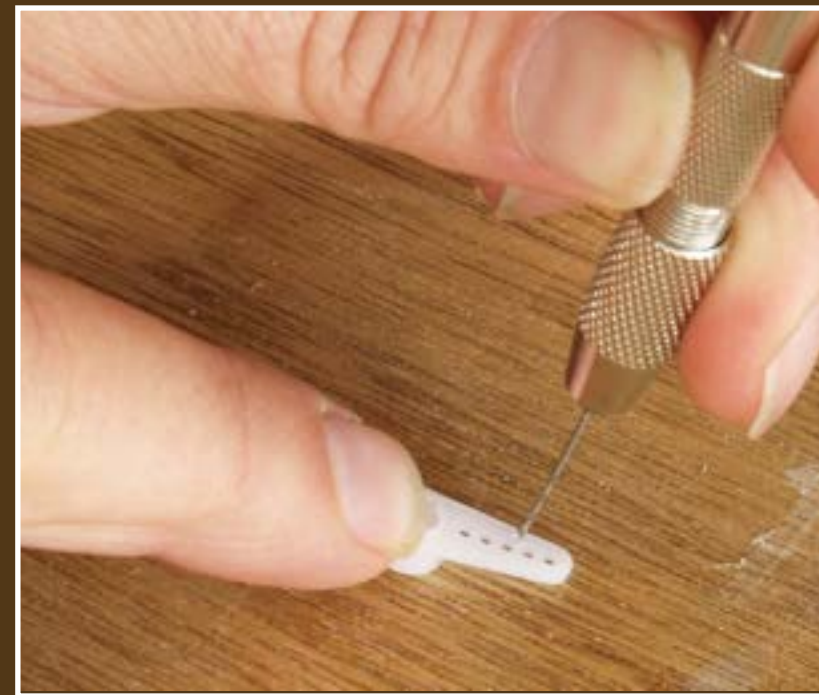


Figure 2: The first step was to drill a small hole in the servo arm. The Tomar signal has a fine wire and the holes on the servo arm as they come leave too much slop. Drilling a hole to fit was the simplest solution.

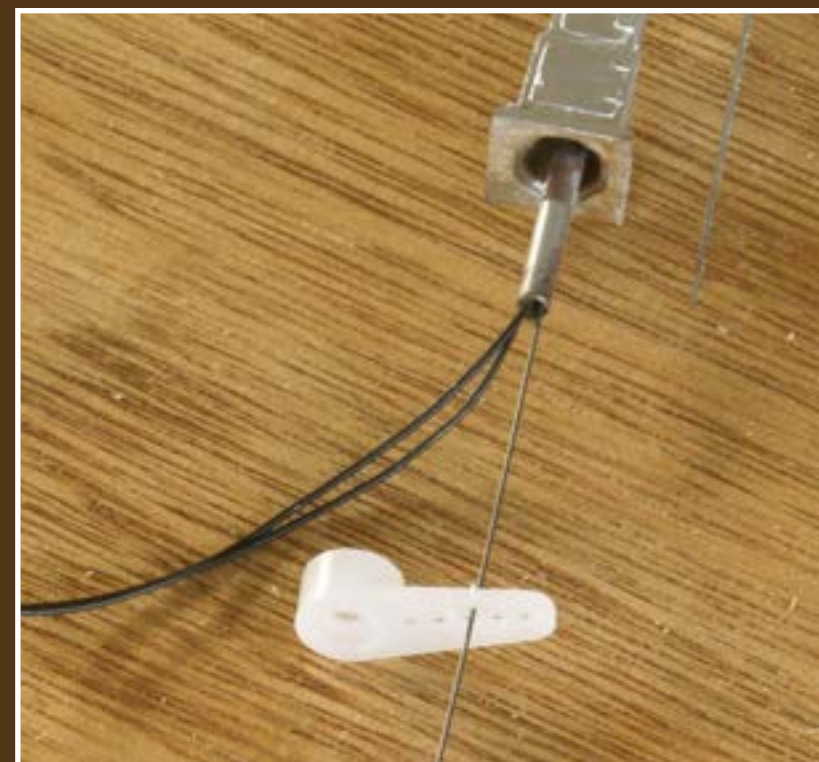


Figure 3: I checked the fit by sliding it over the wire.

STEP 1: Semaphore Installation *Continued ...*

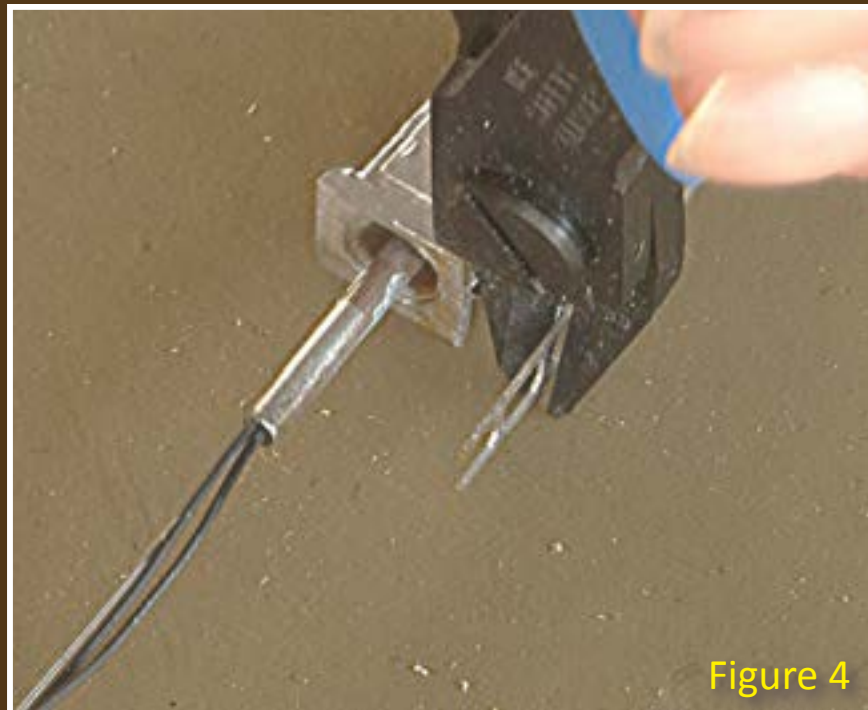


Figure 4

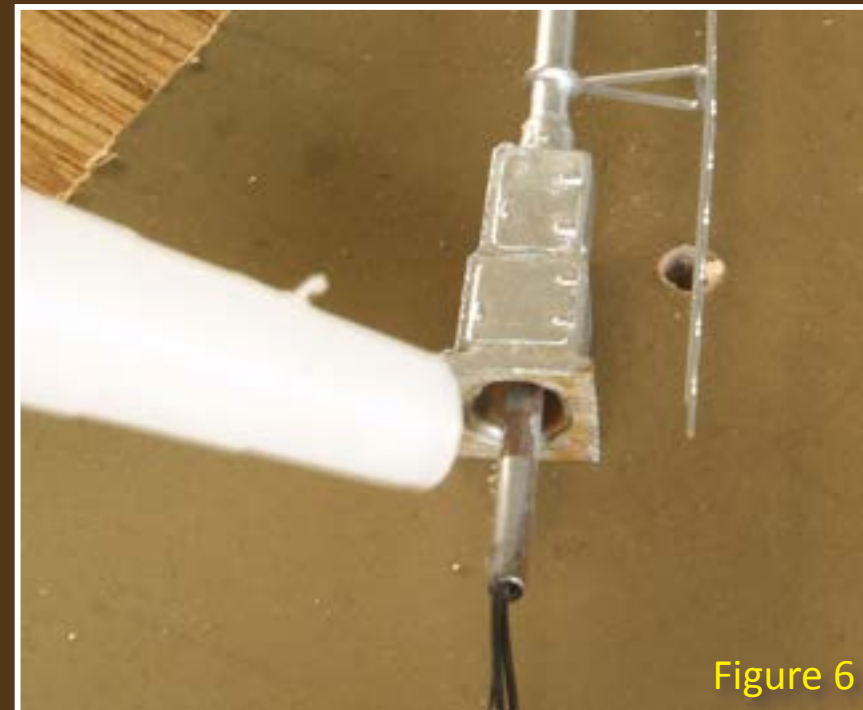


Figure 6

Figure 4: The ladder was longer than I needed, so I carefully trimmed it off with a pair of sharp nippers. Some may want to install the semaphore raised up on a concrete block and in this case the extra ladder length is desired.

Figure 5: A 1/8" hole is needed for the semaphore. Drill the hole as vertically as you can. However, it is possible to adjust the semaphore later as it is made of soft brass that can be adjusted with gentle pressure. I cleaned the hole with a sharp knife to prevent burrs from catching the wires you need to feed down the hole.

Figure 6: I used a small dab of silicone glue to hold the semaphore in place being careful not to get any on the moving parts. Do not use a runny glue such as CA that will slide down the tube and stick the wire to the tube. The trick to getting the electrical wires through the hole is to twist the stripped ends together before feeding them down the hole.

Figure 7: I put the tube into the hole and checked the straightness of the pole at this point and made adjustments as needed by pushing on the base. After the glue has dried, test the installation by carefully moving the actuating wire up and down.



Figure 5



Figure 7

STEP 2: Servo Installation

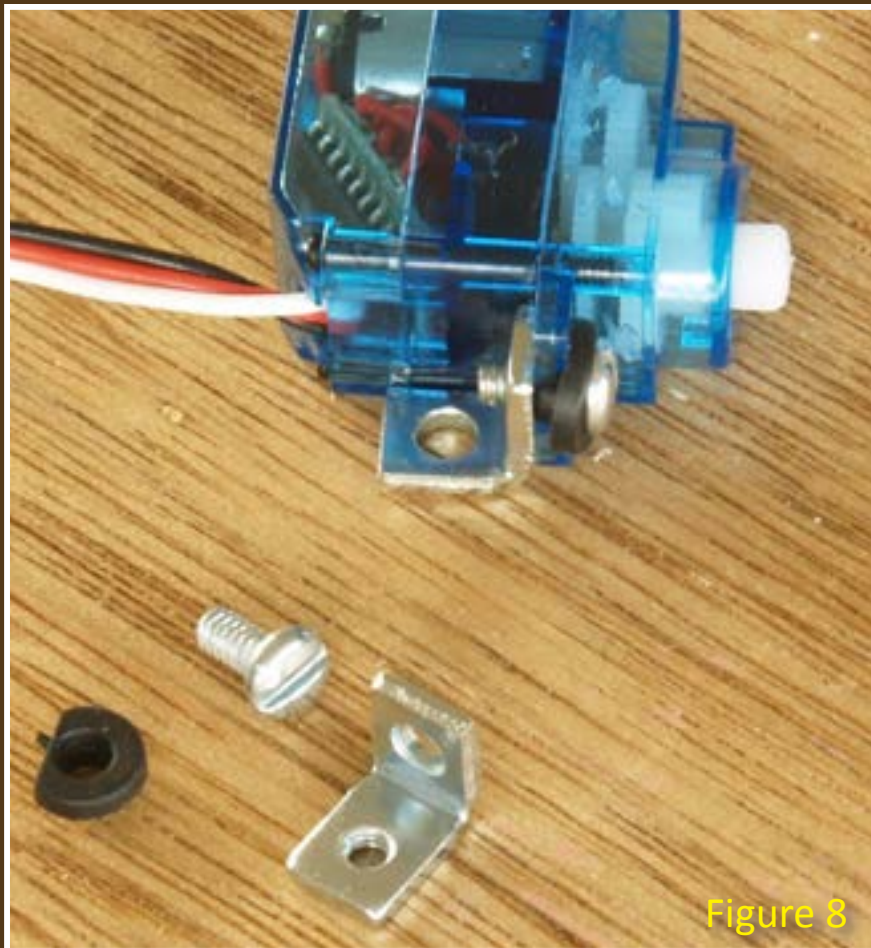


Figure 8

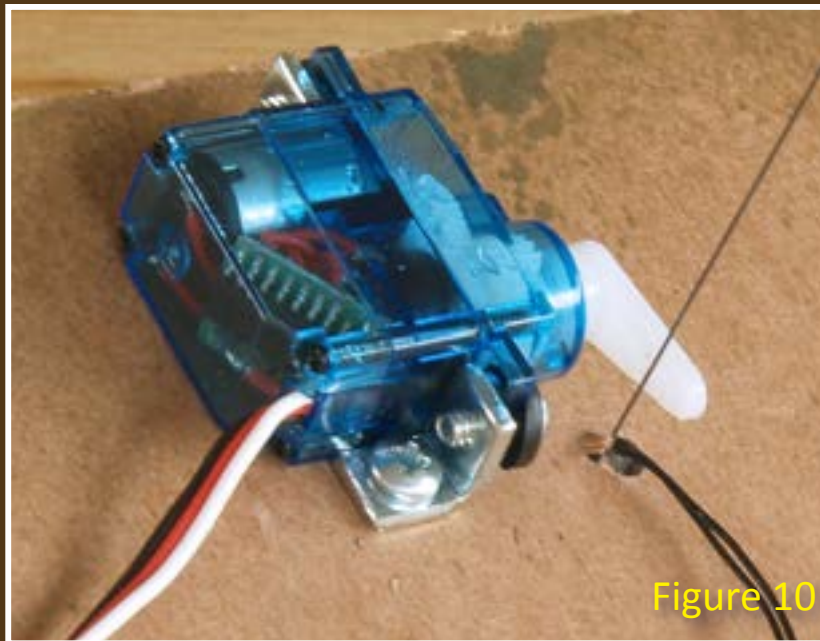


Figure 10

Figure 8: To mount the servo I used pre-threaded L-brackets available from Tam Valley Depot. You could also use small blocks of wood. The hard rubber black washer came with the servo. Some brands of servo don't use them.

Figure 9: I marked the holes for mounting the servo. I mounted the servo such that the small hole I drilled in the servo arm was in line with the wire as pictured. I also thought about where the track was going to be in the final installation and put the servo on the side away from the track.

Figure 10: Here is a photo of the servo mounted in position. The servo arm is on to facilitate alignment but not yet attached with its screw.

Figure 11: I bent the wire over the top of the servo arm to make a 90-degree bend. This required two hands but I left one (hand) out of the photo so you could see the bend.

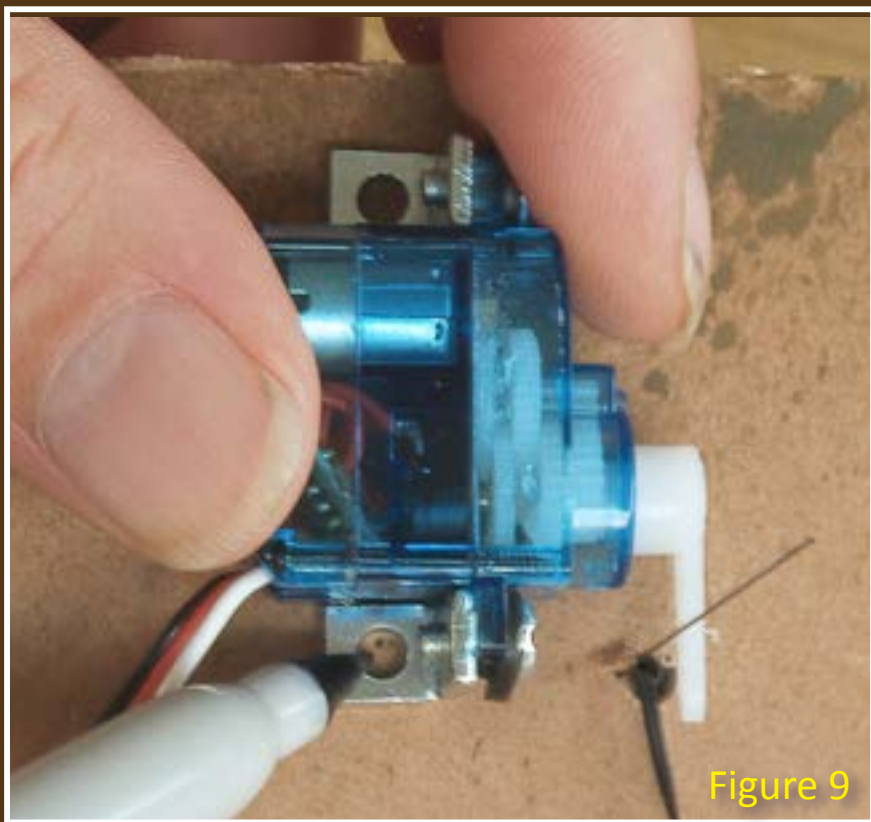


Figure 9

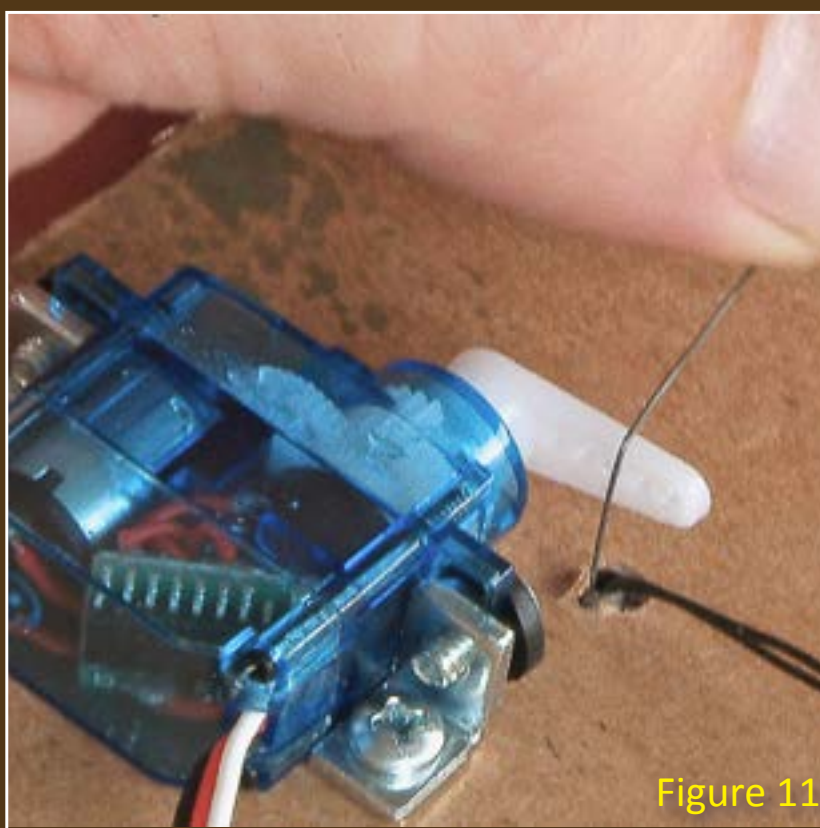


Figure 11



Duncan McCree, a native Californian, lives in San Diego and has been a model railroader most of his life. He is shown here with his latest

layout, the Tam Valley, an HO scale proto-freelanced Southern Pacific.

Duncan also likes to design and build model railroad electronics and founded [Tam Valley Depot](#) to sell his creations.

STEP 2: Servo Installation *Continued ...*

Figure 12

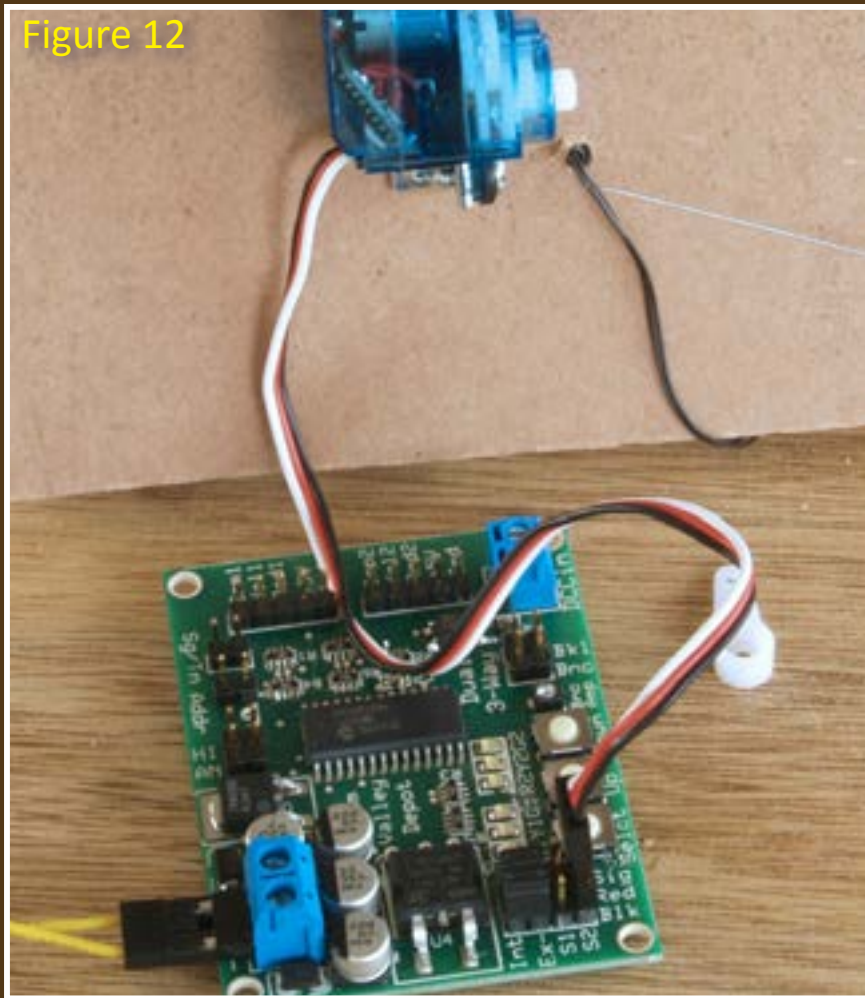


Figure 14

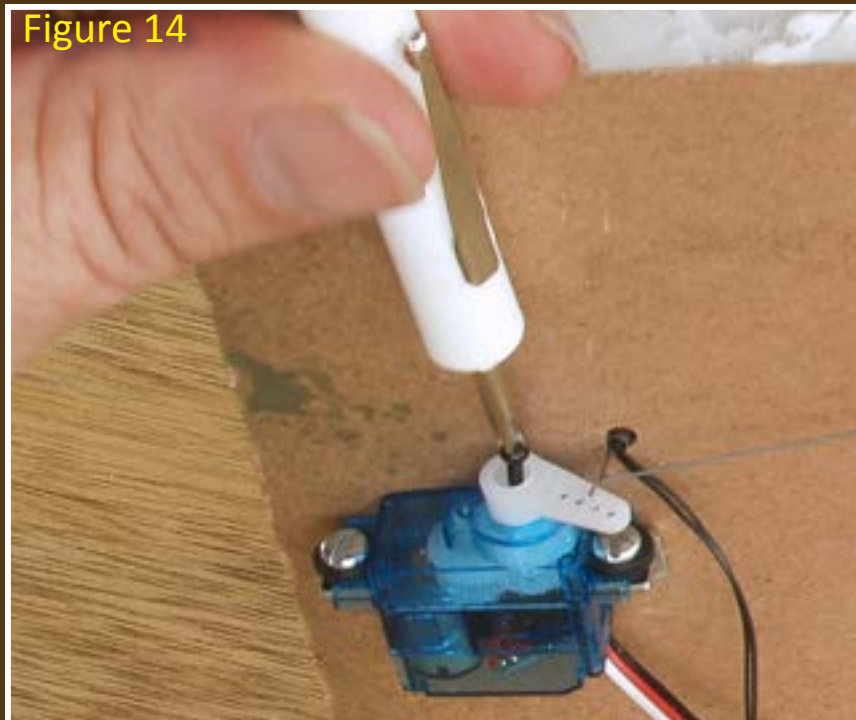


Figure 12: At this point I needed to power up the servo to center it. If the servo arm is put on randomly it may pull the semaphore out of its hole or bend the wire. All the next steps were done with the servo connected to the driver board (Dual 3-way in my case) and with the servo powered up.

Figure 13: I slid the servo arm over the wire and then put in another 90-degree bend on the opposite side of the first bend so the wire cannot slip. This is called a Z-bend in servo jargon and is more reliable than using a set-screw arrangement as it cannot loosen over time. The bend should not be so tight so the servo arm can't move easily.

Figure 15

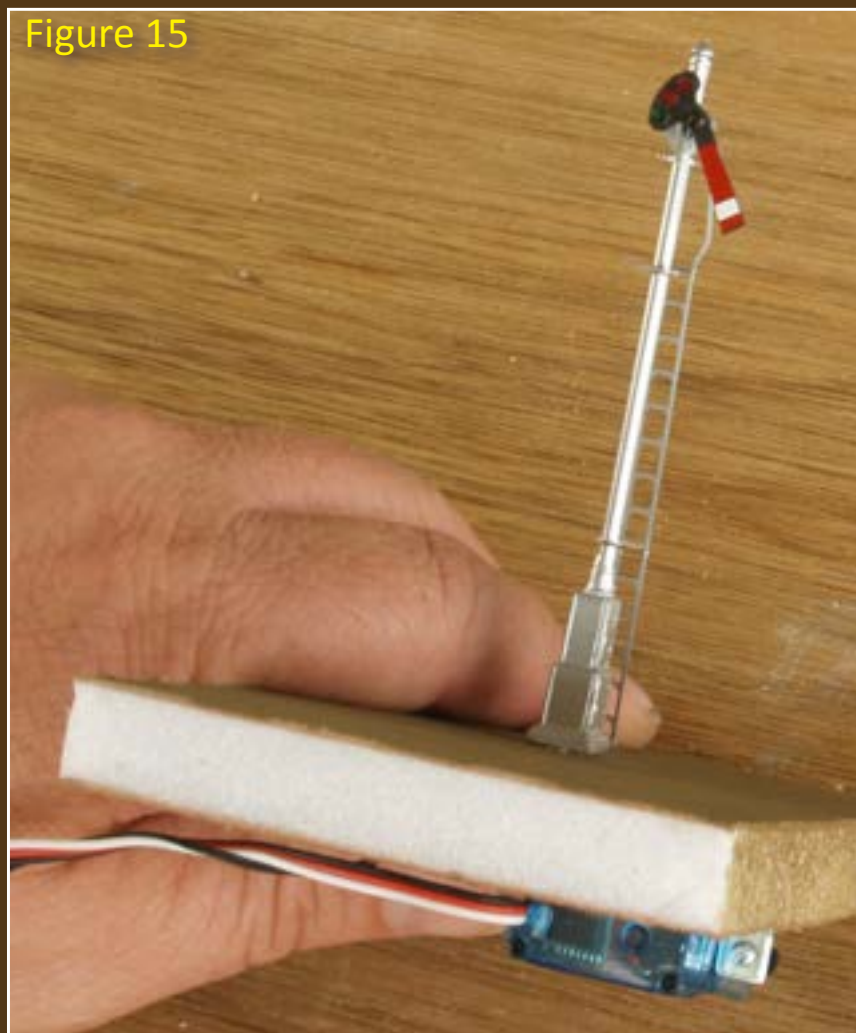


Figure 14: I put on the screw that holds the servo arm in place. Be sure to do this over your workbench and be prepared to catch the slippery little screw as it bolts for the floor never to be seen again...

Figure 15: The mounted servo and semaphore assembly now looked like this photo. At this point I was ready want to align the Dual 3-Way according to the instructions that come with it. This is hard to describe in words so I made a short video of the alignment procedure which you will see on the next page (figure 16).

Figure 13



STEP 2: Servo Installation *Continued ...*



Figure 16: Video of the alignment procedure of the Dual 3-Way servo.

Figures 17a - 17c: In these photos, the board has been aligned to each of the three semaphore blade positions. Notice how little the servo arm needs to travel to fully move the blade.

Figures 18: I installed the semaphore on the layout on the outskirts of the town of Colfax. My subroadbed is built from Gatorfoam so it was relatively easy to cut a slot in the existing subroadbed. I carefully cut the piece of Gatorfoam I installed the semaphore on down to match. I then glued it in place. The next step was to install the control circuitry.



Figure 17a



Figure 17b



Figure 17c



Figure 18

STEP 3: Signal Control Board Installation



Figure 19

Figure 19: I am going to use this Signal Animator board from Logic Rail Technology to control the board. The board has three outputs, Y, R, G that go low when they are active, which is ideal for the Dual 3-Way I am using to control the servo.

Note, it is important to use a common power supply when combining two boards like this so that they share a common ground. Otherwise you will get interesting, if not magic-smoke releasing, results.

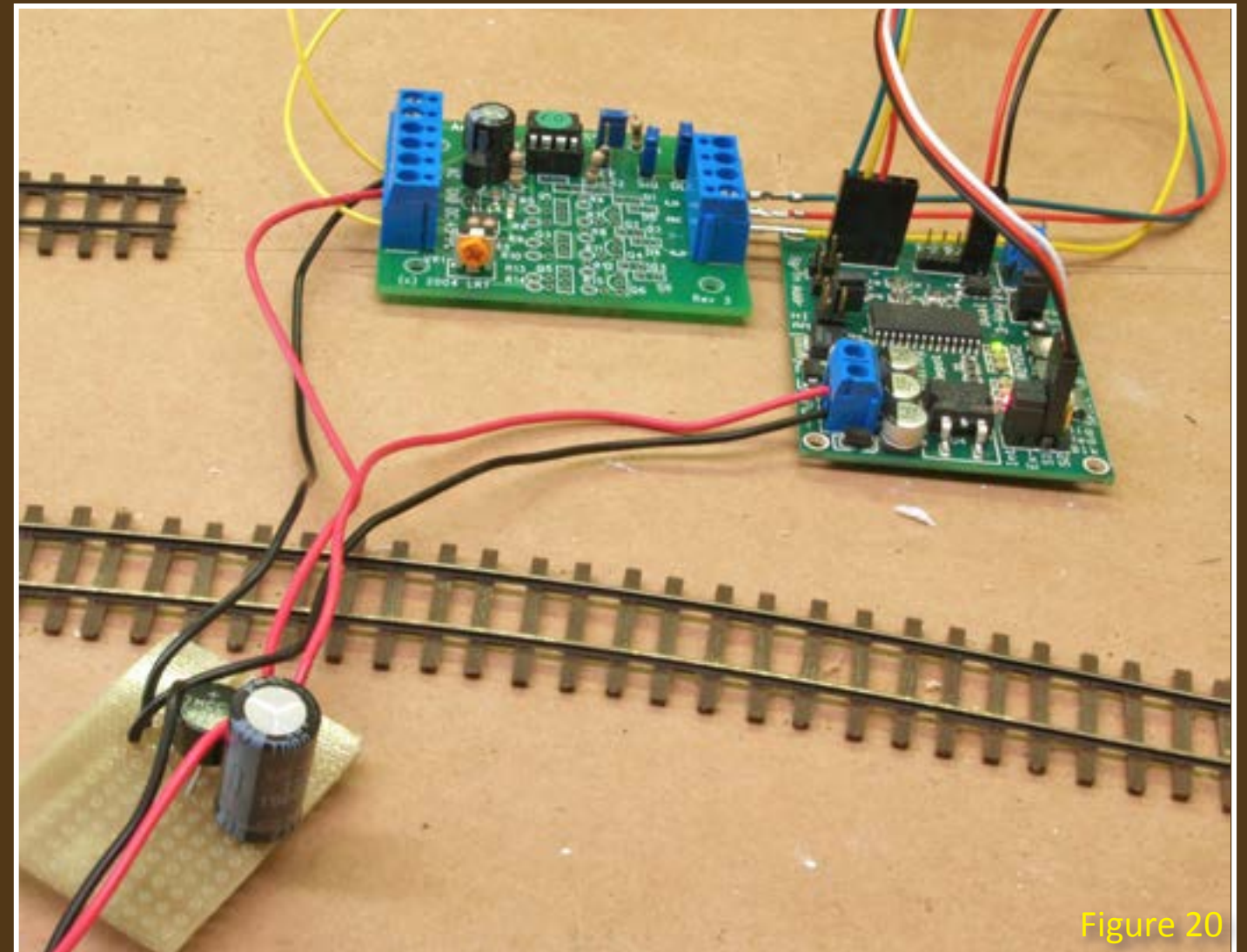


Figure 20

Figure 20: I've installed the boards temporarily above the layout so I could troubleshoot more easily. When everything was working I moved the electronics below the layout. I built a small DC power supply to connect both boards to my AC accessory bus. It's just a bridge rectifier and a capacitor. However, any DC power supply that puts out at least 500 mA would have worked.

The two boards are connected by 3 wires between the R,G,Y inputs. The yellow wires on the left lead to the photocell used by the Signal Animator to detect the train.

STEP 3: Signal Control Board Installation *Continued ...*



Figure 21

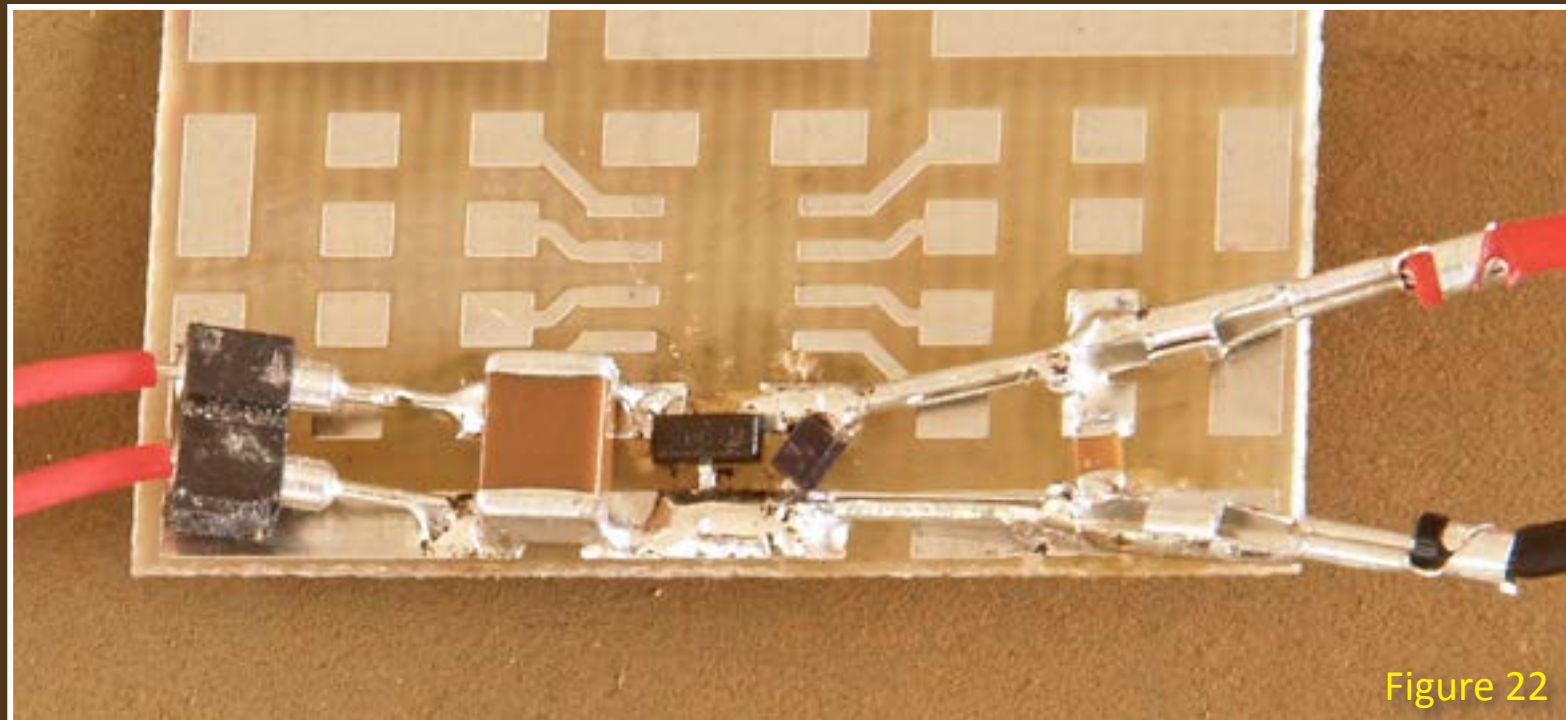
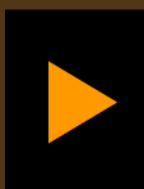


Figure 22



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Figure 21: I drilled a 1/8" hole between 2 ties opposite the semaphore. After soldering the leads onto the photocell, I gently pushed it down in to the hole. The photocell is the small red-brown dot in the center of the picture and is hardly noticeable.

Figure 22: I made a small board (out of hand-soldered SMD parts) with a 1.5V regulator on it for driving the tiny light-bulb on the semaphore. I connected this to the 5V output on the Dual 3-Way. Past experience has shown this light-bulb is easy to burn out and very hard to replace. Tomar provides a resistor with the unit but no information on what voltage it is designed for! I have so far discovered that 5V is too low to light the bulb with this resistor and 12V is too high as the light-bulb burns out in a couple of seconds. One solution that is easy and safe to use is a 1.5V battery to drive the bulb. A D-cell should drive it for a long time. If people are interested in the 1.5V regulator solution, I could be persuaded to make a small PC board and sell it through Tam Valley Depot. Please send me an [email](#).

Figure 23: Finally, I ran a train over the photocell and everything worked nicely. I made a short video of the action available [here](#).



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Weathering a Scrap Metal Service Gondola



– by **Thomas Klimoski**
Photos by the author

Modeling the effects of heavy use and abuse on gondolas only takes a few simple steps ...



Some of the hardest working freight cars on any railroad are the gondolas. They rarely stay new looking for very long given the daily abuse they take. Gondolas used for scrap metal service lead the pack when it comes to abuse. Metal is dropped into them from loading machines and overhead conveyer

units. Dings, dents, and scratches are expected when used in this type of service. The interior paint is quickly worn off from this abuse resulting in a rusty surface. Paint fades and fails quickly leading to rust spots on the car exterior. Scrap yards are notoriously dirty and the dust and grime

accumulates on the car which also fades the paint.

I wanted to model a gondola that was used in scrap metal service and reflected years of use and abuse. I used several techniques to achieve the results I desired. While many of these techniques are not new, I think

that each one adds to the overall effect of a heavily used piece of railroad equipment. I took some reference photos and referred to them to get ideas on how to weather a gondola used in scrap metal service. In the attached photo you can see the rusting and weathering on a prototype scrap metal gondola along the CSX Downtown Spur in Miami.

While it may seem outrageous to distress a beautiful new model, it adds to the realism of a model railroad by operating cars that reflect years of hard service. Follow along as I outline the steps and techniques I used to weather an Exact Rail Thrall 3564 cu. ft. gondola.



Figure 1: Several gondolas await loading on a siding in Miami outside of a scrap metal processing facility. These gondolas have seen many years of service and their rusted and battered condition can be modeled easily.

STEP 1: Distressing the Gondola



Figure 2: New Exactrail Thrall 3564 cu. Ft. gondola.

In the first photo you can see the new out of the box gondola. The factory paint is perfect and it looks too nice to have seen any service in a scrap yard.



Figure 3: Carefully use a soldering iron to warp and bend the inside walls and top rails.

To start my weathering project I used a soldering iron to deform the sides and top rail of the gondola. The top rails take a lot of abuse so I concentrated on trying to bend and deform them realistically. I made several light passes and kept the tip moving to prevent burning a hole in the plastic. This step requires patience and can make a mess of a model very quickly if not done cautiously. I stayed away from heating the plastic behind any lettering which will cause the lettering to deform. The light spots in the photo are areas where the paint has been removed by the soldering iron. These spots will be covered over in a later step.

STEP 2: The Base Coat



Figure 4: Several light passes with an airbrush add overall weathering on the exterior.

Once I finished with the soldering iron, I airbrushed on a thinned mix of Railroad Tie Brown and Roof Brown oil based paints to give the car an overall weathered appearance. I thinned the paint mixture 50% with mineral spirits. Be sure to use adequate ventilation and respiration protection when using solvent based paint. The trucks were removed and the couplers were covered to prevent getting paint on them. I sprayed the bottom of the car and then used a slightly heavier application of paint along the bottom of the sides and ends where more of the dirt would naturally accumulate.

STEP 3: Painting the Trucks and Wheels



Figure 5: Acrylic paints can be easily blended and applied with a small paint brush to the trucks and wheels.

Acrylic paints were used to hand paint the trucks and wheels. I blended Burnt Umber and Burnt Sienna in varying amounts to achieve the correct color. I placed the truck on the handle of a paint brush to be able to rotate it without touching the areas while I painted. The wheels were brush painted with a darker blend of the paints listed above by using a little more Burnt Umber. While I had the paint available I dry brushed the couplers with the same paint mixture.

STEP 4: Painting the Interior



Figure 6

Sophisticated Finishes has a product ideal for making rusted surfaces like those found on the interior of gondolas. The Rust Antiquing Set is available at Michaels Craft Stores and contains an iron metallic surface paint and a rust antiquing solution (figure 6).

I first applied the iron metallic surface paint to the inside of the gondola. I made sure to get paint into all the corners and along the top edge of the gondola. The instructions indicate to allow the iron metallic surface to dry overnight before applying the rusting solution (figure 7).

Figures 6 and 7: This Rust Antiquing Set creates a realistic rusted surface on plastic models. Use a paint brush to apply the iron metallic paint.



Figure 7

STEP 5: Rusting the Interior



Figure 8: The rusting solution is a clear fluid that is applied to the dry iron metallic paint to start the rusting process.

After the iron metallic paint dried overnight I applied the first coat of the rust antiquing solution. Several light coats of solution were required to achieve the results I wanted. I allowed each coat to thoroughly dry before applying the next coat. The best results are achieved by allowing the rusting solution to work overnight and then applying additional coats if you want a more rusted surface.

STEP 6: Adding Exterior Rust Spots

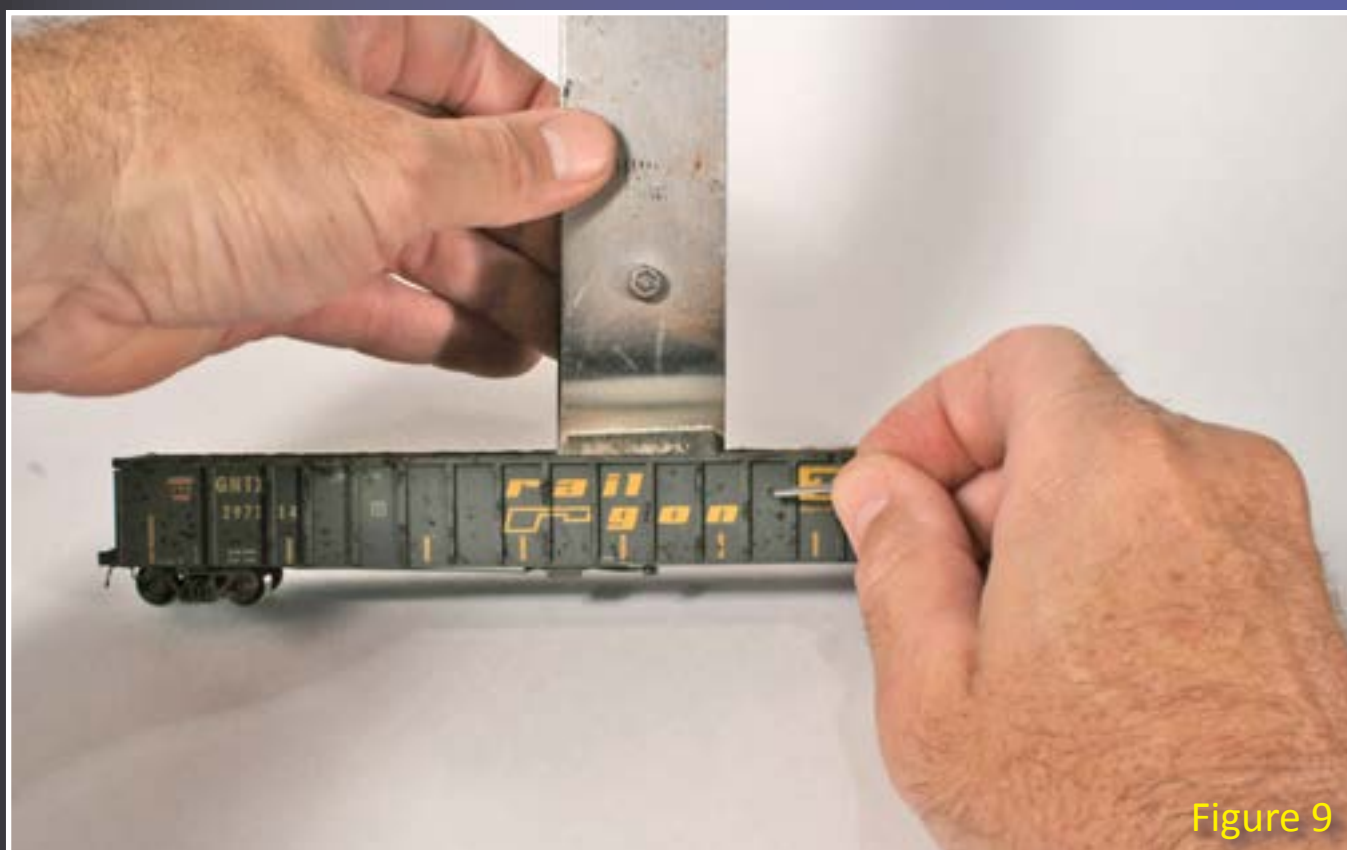


Figure 9

Once the rusting solution was dry, I used Burnt Umber artist oil based paint to make the rust spots on the exterior. A finish nail worked well to apply small dots of paint on the panels and along the ribs. Apply the paint in various areas of heavy use and where rust would naturally form (figure 8).

After I was finished applying the paint spots, I used turpenoid to blend the paint in and pulled it down the sides to make rust streaks. It takes practice to get it just right. The oil allows a long working time so if you make a mistake just wipe it off and try again (figure 9).

Figure 9: The point of a finish nail is the perfect applicator to apply the artist oil paint.

Figure 10: Lightly wet the paint brush with turpenoid, then touch the oil paint and make a slight downward stroke.



Figure 10

List of Materials

- Sophisticated Finishes Rust Antiquing Set
- Winsor & Newton Winton oil colour 3 Burnt Umber
- Folk Art Artist Pigment 462 Burnt Umber acrylic paint
- Folk Art Artist Pigment 943 Burnt Sienna acrylic paint
- Floquil solvent based paint Roof Brown F110070
- Floquil solvent based paint Railroad Tie Brown F110014
- Bragdon weathering powder
- Turpenoid
- Mineral Spirits
- Testors Dullcote



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STEP 7: Final Steps



Figure 11: Apply weathering powder to give the model a final coat of dirt and grime.

Once I had everything painted and allowed it to dry overnight I sprayed the model with Dullcote. Once the Dullcote dried I used Bragdon weathering powder to blend everything together and give the model an overall weathered appearance. A second coat of dull coat was applied to lock everything in place.

STEP 8: Making a Scrap Metal Load



Figure 12: Left over parts in a scrap box and other materials make a unique and realistic scrap load.

While I was waiting for the paint on the interior of the gondola to dry, I made a scrap metal load from some left over parts in my spare parts bin. I cut out a strip of plastic to fit the size of the gondola and added strip wood to raise it to the proper height in the gondola. I coated it with white glue and then added various scrap pieces to the top. I also used small cut up pieces of aluminum gutter flashing and scraps of simulated metal siding made of plastic. Once the pieces were where I wanted them I used diluted white glue to hold everything down. After the glue dried, I painted the load with the same rust antiqing set I used on the interior of the gondola. I touched up a few areas with acrylic paint and now have a very unique scrap metal load for my gondola.



Now my gondola looks like it has seen several years of use and is ready for another trip to the metal processing plant.



Thomas Klimoski and his wife, Diane, recently moved to the Northeast Georgia Mountains. Thomas is a retired City of Miami Fire Department Captain. Thomas's HO scale CSX Hawksridge Division, a free-lanced modern era layout, was dismantled for the move and he is currently designing his next layout. Thomas is a member of the Tri-State Model Railroad Club located in the historic Mineral Bluff Georgia Depot. Thomas and Diane currently volunteer on the Blue Ridge Scenic Railway in Blue Ridge, Georgia. His other interests include photography, kayaking, and golf.



Click on the image to spin the model a full 360 degrees! See it from all sides.

Operating on the Willoughby Line

A tale of two sessions - preparation, action, and aftermath ...

- by Guy Cantwell



Figure 1

Figure 1: Number 24 pulls the Mather stock train into Hetch-Hetchy Junction early in Saturday's session.

After five years of construction The Willoughby Line was ready to start hosting some operating sessions. Since it appeared there would be some work in getting the layout ready to operate, I decided to double down and host two sessions back-to-back: one Friday night and another Saturday morning. What follows is a quick chronicle of my experiences preparing the layout and hosting these sessions.

The first job was to send out the invites and make sure I had crews

available. Because my layout room is small, I can only handle four operators plus myself as the roving dispatcher and mayhem manager. I ended up with four on Saturday but only two on Friday (due to a cancellation). With fewer operators than planned on Friday, I had to adjust the session to run fewer trains.

The next order of business was the physical condition of the layout and rolling stock. Nothing tests the

reliability of a layout like an operating session. As an extra incentive, members of this group regularly operate on Dave Adams' On3 Durlin Branch (featured in the [April 2011 MRH](#)) and are used to technically flawless operation. This set the bar pretty high for my Willoughby Line.

Cleaning the Track

I was already in the doghouse after a recent round robin meeting was

plagued with constant stalls from dirty track. I vowed to make sure I wouldn't repeat that experience!

Some new scenery had left the track electrically impassible in a few places. Track cleaning cars helped but didn't remove it all. Eventually I resorted to a Brite Boy to scrape gunk from a few stubborn spots.

Elsewhere there was enough dirt that I elected to use what I call my "nuclear" track cleaning train. This



Figure 2



Figure 3



Figure 4

Figure 2: Cleaning up after major scenery work often requires elbow grease and extreme methods. Track may look fine but still be coated with glue. A Brite Boy makes quick work of glue residue.

Figure 3: A caboose gets a wheel cleaning. A Q-tip soaked in alcohol is used to dissolve gunk on the wheel treads and wipe it away while being careful not to damage details or leave fingerprints.

Figure 4: I believe Wahl clipper oil helps cut down on arcing between the wheels and track. I dab a tiny amount of oil on the track in a few places, then run trains to spread a thin film around the layout.

Figure 5: The layout's only diesel makes its way through Mountain King pulling the Nuclear Cleaning Train. The acetone-filled CMX car is followed by a Masonite slider car. Acetone is nasty, but cleans things very well.

train (figure 5) consists of a loco, an acetone-filled CMX car (be sure to ventilate the room when using this option), followed by a boxcar equipped with a masonite pad slider.

I run this train around the mainline a few times and into each siding at least once. Running it forward seems to work best – the acetone dissolves the crud and the masonite slider wipes off what's left. The CMX car gets a fresh pad every time I clean the track.

Once I've run the "nuclear" train, I dab the track in a few places with Wahl Clipper Oil (figure 4). The film of oil greatly improves electrical pickup which helps promote smooth running.

I resisted using Wahl oil for years while my train buddies extolled its virtues. I was particularly skeptical about putting a film of anything on the track. When I finally tried it, I saw remarkable improvement in pick up reliability, especially with small wheelbase brass steam locomotives. I tested it in a place where such an engine stuttered at slow speed. After applying the oil the stutters disappeared and I became a convert.

1440 Best Friends

There was one more cleaning issue to deal with. I'd been putting off cleaning the wheels on my rolling stock for quite some time. Many of you may have experienced the joy of cleaning track thoroughly only to have it become dirty again after a train rolls around a couple of times. I'd been in denial regarding all



Figure 5



Figure 6

Figure 6: A few of the cars that I serviced sit in Willoughby Yard. Many of these cars had not had a wheel cleaning or coupler check in nearly a decade. Continuing problems with dirty track, even after thorough track cleaning, led management to clean wheels – all 1440 of them! The effort paid off – track has stayed much cleaner since wheels were cleaned.

those wheel sets but now it was time. I have about 180 cars, with eight wheels per car. That's 1440 wheels!

While I was doing the wheels, I also checked coupler height – a surprising number required adjustment.

Sticky Switch Machines

There were a few sticky Switchmaster stall motors that needed resistor recalibration. This problem is one that has plagued the railroad from the earlier days of construction.

I originally used a non-regulated power supply for the Switchmasters and

empirically selected dropping resistors for them (I tried resistors until they seemed to run about right). Over the years, as more loads were added to those power supplies, the voltage dropped. A number of the original switch machine resistors, selected using the higher (less loaded) voltage were now too high and some switch motors weren't throwing reliably.

I replaced the old power supply with a regulated one – voltage remains constant regardless of the load. I also started a dropping resistor replacement program. Now seemed like a good time to get all remaining



Figure 7

Figure 7: It seemed prudent to add stop blocks anywhere a train might drive off the layout. Management used drywall screws to temporarily eliminate this possibility. Better looking Lexan shields will replace these when I have more time.

Figure 8: I built several shelves into the fascia providing off-the-layout-surface storage for various items. The inset shelves don't occupy any of the at-a-premium aisle space.

Figure 9: I cut a view slot in the fascia covering the helix. Operators like seeing the trains they're running and this makes it possible as they progress through the helix. The aesthetics of the slot are debatable but the improved helix visibility is wonderful.



Figure 8



Figure 9



Figure 10

Figure 10: These side dump gons are some of management's favorite rolling stock – they look great! However, due to lack of proper weight they derail like mad when backed through turnouts. Reliability rules the day as they are relegated to the RIP track to sit out the sessions along with several other great looking but operationally sketchy cars.

resistors changed over and verify my turnouts would all throw reliably when commanded to do so.

Let 'er RIP

Next there was a reliability assessment for rolling stock. Some of the cars look great but run poorly. Some of my coolest looking cars were sent to the RIP track to sit out the session. Several great looking but poorly running locos were put away as well.

While I wasn't too happy about pulling some of these cars, a car that is known to have frequent derailments

has no place in an op session. Plus, by pulling them I gave myself an extra incentive to get them fixed and back in service.

The Ops Plan

The operating plan, developed in the days before the layout plan was complete, needed a lot of refining. I was also going to need to print out schedules, car forwarding instructions, and lots of other attendant paperwork.

I designed the original operation plan around a set of specific trains that I wanted to run. Since I knew what I



Figure 11

Figure 11: Car cards laid out on a scenicked layout are a no-no. None of my operators did this but I couldn't blame them if they had – the layout has no card sorting space. Management is looking into clear Lexan shelves.

Figure 12: Each train has a folder with car cards in a pocket and train instructions on the left. The folder can be put in a crew man's hip pocket or fits in a fascia slot while running trains.

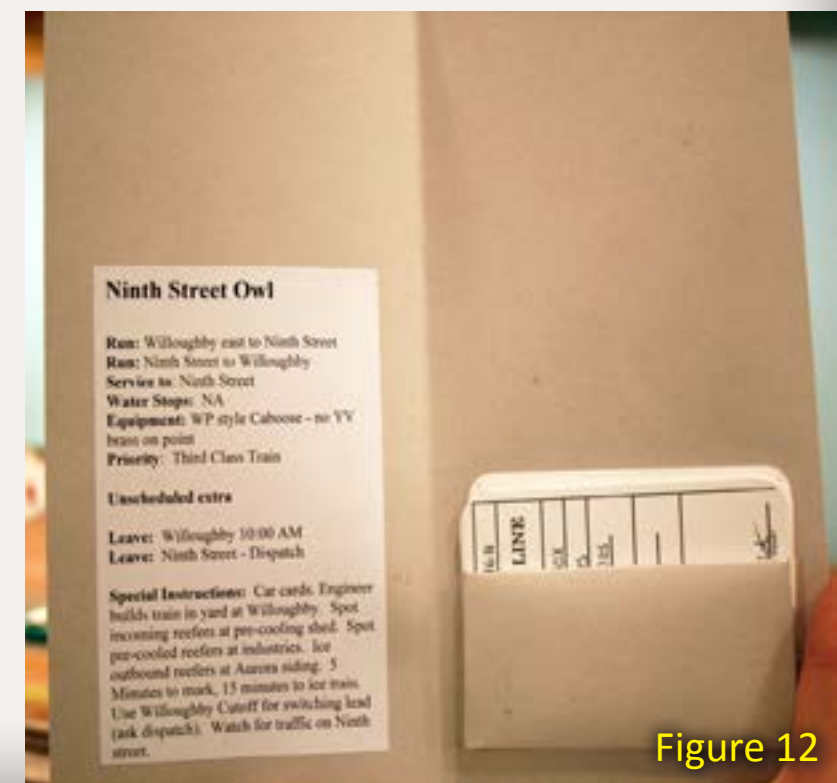


Figure 12

wanted running, the next question was figuring out when would they run?

I wanted TT & TO operations, but I soon realized I didn't have enough information to create detailed schedules. For example I needed to know how long the trains would take to complete their run – simple for a through train, but difficult to determine without running experience for trains with meets or work along the line.

I decided to include only a few trains on the timetable and run most trains as extras. That allowed me to skip an awful lot of timing calculations to determine meets and when all those trains could leave each station.

I guessed at the times the few regular (non extra) trains would leave their stations and left the rest to the discretion of the dispatcher.

Car Forwarding

The Willoughby Line uses a card system that calls out car movements, car type, and location but doesn't specify individual car numbers. This way I don't need to worry about duplicate numbers or cars that are so heavily weathered the crews can't read their numbers (who me?).

I drew up a list of locations on my layout and the number of car spots at those locations. Then I created a master list of car card moves.

From these lists I created set out and pick up cards for each location that a

specific train would visit. While working on each train, I was careful to keep its overall length to 10 or fewer cars on both outbound and return trips. Each train also gets a list of crew instructions.

To help keep everything together I made train folders (figure 12) to hold the car cards and the instructions. The folders are a blessing when trying to use too few hands to juggle throttles, pencil, car cards, train instructions, etc. The train folders are small enough to go in a hip pocket or into a slot in the fascia.

Counting Sheep

Yes, I was having trouble sleeping by this time, but those aren't the sheep I'm talking about.

I tallied up the total number of set outs for trains originating in the yard and the total number of cars to be picked up from each location. This gave me the total operating roster for these sessions. I set out all the cars needed along the line and made sure that the yard had the correct number and types of cars needed as well. I left a couple of extra cars in the yard and then removed all of the extras so as not to overcrowd the small yard.

Instead of a yard crew, road engineers running out of the main yard are responsible for hostling their own locos and building their consists according to cards in their packet.

Minimum Operational Standards

1. Derailment free track – While it is impossible to completely eliminate derailments, you want be close on this one or operators will get frustrated.
2. Clean track – No stutters or stalls at slow speed! This one can be tricky at times. Figure out a cleaning system that works for you and learn how to get the track “stall free” clean.
3. Reliable rolling stock – Locos must run well without jerkiness, stalling, derailments etc. Cars must roll smoothly with no derailments. Couplers must work well and be adjusted to the correct height. Pull any problem cars off the layout for the session.
4. Make a plan – A full blown timetable or dispatcher situation isn't required, but you do want an idea of what trains will run where, what they will do and when they will run (running trains in sequence works well if you don't like clocks).
5. Stage the plan – Make sure you allow enough time before the session to stage the layout for the trains that you plan to run.
6. Creature comfort – Seems obvious, but stuff all over the place, a dirty floor, etc., makes the space less desirable to be in and run trains.
7. Light – Make sure that operators can see the layout and what they are doing. Replace those burned out bulbs and consider adding lights to dark areas of the layout. (Or you could give miner helmets with carbide lamps to the crews).
8. Right attitude – During the session stuff breaks and things will go awry for no apparent reason. No session ever goes exactly as planned. Layout owners and hosts generally tend to interpret all the little mishaps as a bigger deal than visiting operators will see them. If you meet the minimums on this list, your operators will have a good time regardless of how much you may sweat. So... Relax and roll with it.

The Op Sessions

After a pizza dinner and lots of train talk, the Friday session ran pretty smoothly with a reduced number of trains running due to the smaller crew size. Saturday's session with a larger crew session ran more trains and was also pretty smooth. Both sessions lasted longer than three hours and everyone appeared to have a good time.

All the preparation work paid off and the layout performed pretty well (for first-time op sessions) with the exception of three switch points that broke loose from their PC tie throw bars and one switch motor that consistently refused to move without help. I had to re-solder the points on the fly (figure 13) and I replaced a resistor between sessions to fix the switch motor. A brass loco died (loose drive line connection) and a dangling wire harness on a



Figure 13



Figure 14



Figure 15

Figure 13: Under pressure, layout owner Guy Cantwell uses his soldering chops to keep the session from grinding to halt when switch points came unsoldered from a throw bar. This scenario was repeated during the Saturday session as well. Management is now investigating stronger, low-temp silver solder.

Figure 14: Narrow Gauge & Short Line Gazette columnist Jim Vail meets the log train in Arvin after a long run down the hill from Hetch-Hetchy Junction.

Figure 15: Steve Anderson enjoys a light moment running the log train up the hill to Groveland while Jim Vail (behind) watches the progress of his cab forward in the helix slot (figure 9).

Spectrum steamer needed to be fixed en route. Switching the Groveland area turned out to be quite a puzzle, something that I hadn't expected. Happily, stalls on dirty track and derailments were non-issues.

Keeping Track

I kept a log for each session recording train arrival and departure times, what went wrong or right, and any

suggestions. When the dust settled, I sent a follow-up e-mail to session attendees soliciting their feedback.

Lessons Learned

After reviewing the session logs and e-mail feedback, I learned a few things to apply to my next session.

Two sessions back to back weren't as hectic as I thought they might be and

I might double down again. Re-staging the layout didn't turn out to take too long (possibly because of the smaller number of trains that ran in the first session). Glitches during the sessions seemed to fall into two categories: "well duh" and "I'll have to fix that".

"Well duh" Moments included:

- The DCC address didn't match the number painted on a locomotive).

- Forgetting which train was parked where in hidden staging (even though it was written down correctly).
- Several cars that I thought might be problems but I ran anyway. Surprise! They actually were problems.
- A classic – the distracted dispatcher set up a couple of cornfield meets. Fortunately, neither of these incidents resulted in a wreck.

In the "I'll Have to Fix That" category several maintenance issues were identified and put on the fix-it list:

- A turnout needs a new throw bar.
- Stronger solder for switch points.

- More switch motor resistor replacements (sigh).
- Coupler pin adjustments
- A few cars that need replacement wheel sets.

Schedule

The card system operated pretty well but the schedule will need a lot more work to run smoothly. There are more trains on the schedule than can currently run, given the crew size. Hopefully by tweaking the order of

Operations Checklist

- I. Supplies
 - Extra batteries for wireless throttles
 - Donuts, coffee and soft drinks for morning sessions
 - Coupler picks
 - Generate necessary paperwork
- II. Layout Prep
 - Fix turnouts/trackwork
 - Name any unidentified locations
 - Clean all Track
 - Check rolling stock
 - Clean train room
 - Check and replace throttle batteries
 - Reset fast clock
- III. Set the stage
 - Sort and prepare car cards
 - Count cars needed at each location
 - Stage the layout
 - Post train schedule
 - Make up orientation document
- IV. Running the Session
 - Pre-session orientation
 - Bid for trains (who will run what?)
 - Keep a log during the session

the schedule, I can make things run more efficiently and run a couple more trains in a session. This time the fast clock ended up mainly as a timer to tell us when trains should run. As we continue to operate, the clock will become more important as I am able to run more trains on a schedule.

Operators mentioned the need for places to sort car cards without laying them on the layout and the need for mockup buildings in certain areas with no scenery to make it easier to “see” the industries being switched.

Wrap Up

The sessions were lots of fun and left me lots of ideas for next time. The biggest joy for me was to see the years of work put into designing and building the layout pay off with a smooth running layout that is fun to operate with my friends. Hosting sessions is also a major incentive to fix the things on your repair list that have been put off for a while now.

Just Do It

I would suggest to those who are thinking of hosting an operating session to go ahead and do it! I find that most train guys who are into operations are pretty excited to run on a layout anywhere. If you meet the minimum standards, they will have a good time and they might even want to come back!



Figure 16

Figure 16: Mike Schwab carefully eases his locomotive onto the Groveland turntable. A thumb-wheel is used to turn the bridge and alignment is done visually. Care must be taken not to put a locomotive on the ground as it leaves the turntable bridge. Management reported no incidents at the Groveland turntable during the two sessions.

Figure 18: Gary Schrader and Rod Jensen discuss how to switch Groveland, which turned out to be more of a puzzle than management anticipated. Operators reported that they enjoyed the challenge and no consensus has been reached on if changes to the track plan are necessary or desirable.



Figure 17



Figure 18

Figure 18: Mike Schwab switches the Stock Special in Willoughby. The special is one of several through freights that originate and terminate off-layout (in staging). Mike is swapping stock car blocks in Willoughby yard.

Figure 19: Dave Adams and Jim Vail switch the yard at Willoughby. Operators on the Willoughby Line build their own trains in the yard as there is no crew on duty.



Figure 19



Guy Cantwell has been involved in the local music scene in the San Francisco Bay Area for the last 25 years as an educator, performer, arranger and composer. He also maintains a private teaching studio, providing guitar instruction in a variety of styles from classical to jazz and rock. He and his wife Nancy live in the Santa Cruz area.

Guy's layout was featured in the [June 2011 MRH](#) and was one of many layouts open for the 2011 NMRA National Convention in Sacramento, California.

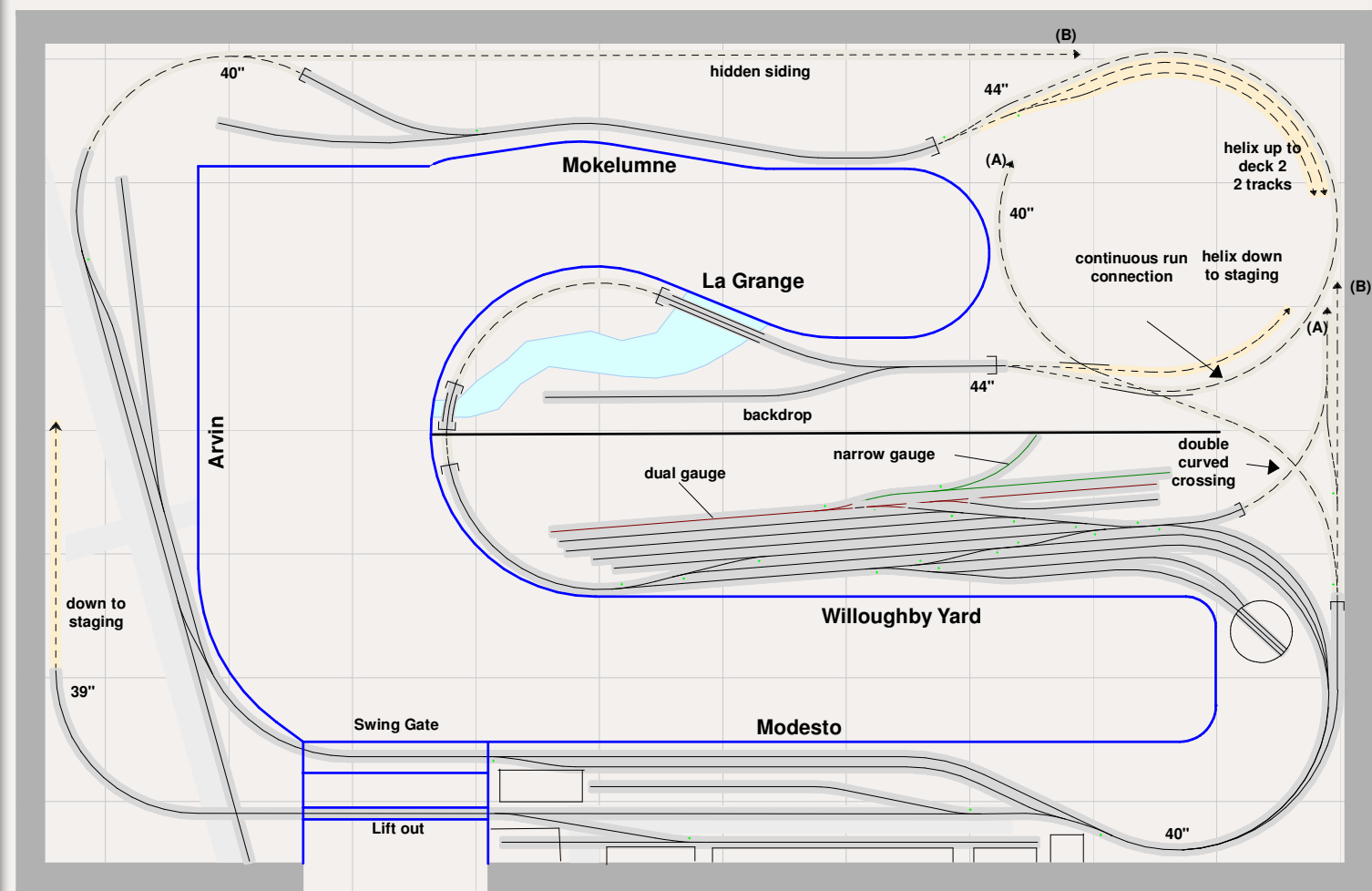
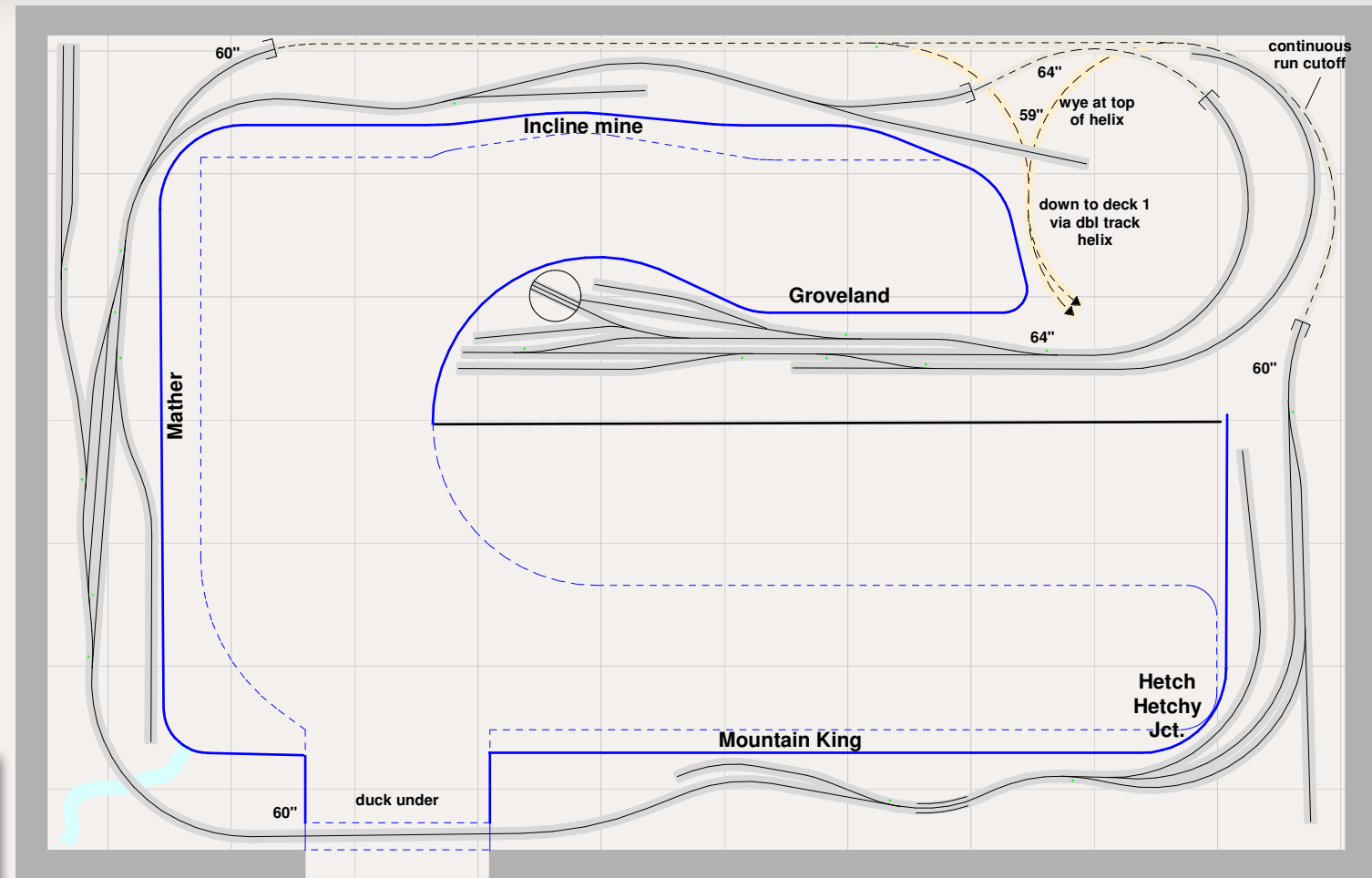


Figure 20: The upper and lower decks of the Willoughby Line. The bottom deck staging area is not shown.

Simple Car Cards on the Willoughby Lines

The card system I use specifies only car type and the current move. I first encountered this idea when operating on Jim Vail's layout. Jim published an article on the system in the April 1991 Railroad Model Craftsman, "A commodity-based card operation system".

With this scheme you don't have to read car numbers and you don't have to restage the layout after each session. The system works better where traffic originates from and returns to a central yard. Items needed include a set of cards, car card holders on the fascia at each town with pick ups and set outs, and a central card holder in the yard area where trains originate.

Basically, traffic is routed by moves to specific sets of cars at specific locations. The type of car, where it is going and where it will return are all specified. The specific car numbers are not. Each move is governed by two cards: One is a set out card, the other is a pick up card. They are usually classified something like this:

Card number 101A (set out)

Turn: Mather – town where the car is going

Move: Set out

Car: Three reefers

Load: Empty

Origin: Willoughby Yard – where car comes from

Destination: NSF Fruit shed – specific industry in Mather

Card number 101B (Pick up)

Turn: Mather – where to spot the car

Move: Pick up

Car: Three reefers

Load: Fruit

Origin: NSF Fruit shed

Destination: Willoughby Yard

When a train is made up, a series of set out and pick up cards are dealt to the train depending on the particular "turn" (field on the cards). The crew builds a train based on the set out cards from cars available in the yard. The train departs the yard with its cards on a small clipboard or in a stack. As the train arrives in Mather (See above), if it has card 101A, it will leave three reefers at NSF and put the card in the Mather pocket. On a return trip if the train has 101B, it will pick up the cars and take the set out card from the pocket, leaving the pick up card in its place.

Depending on the operations desired and the size of the fleet there can be many cards in the deck. There is no restaging because the cars go in a continuous circle between the yard/place of origin and the industry destination. There will be cars and cards at industries all the time. If the crews do the job right, the system stays in balance. It also makes for a random or not so random flow of cars depending on how the deck is dealt and how many of a certain move are in the

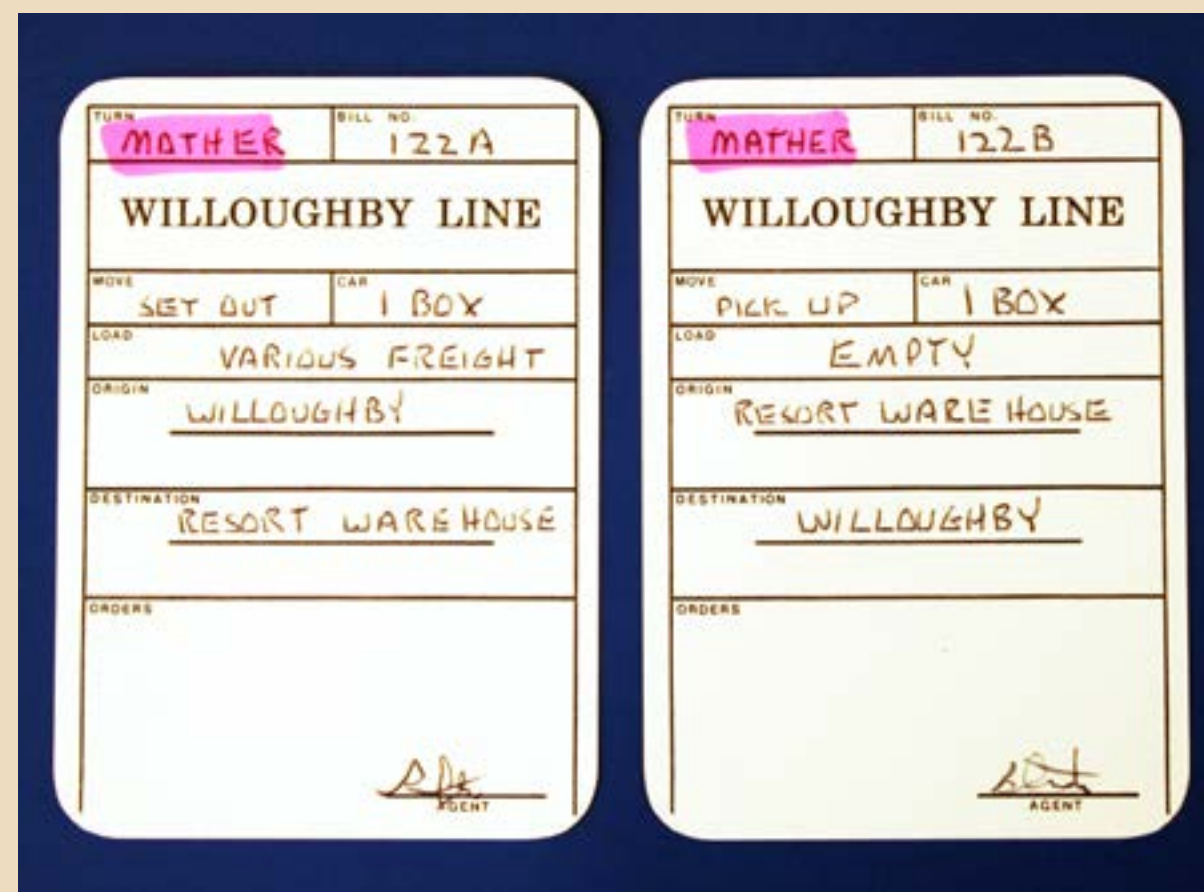


Figure 21: Note these cards have the same number but different letters (upper right). Each card specifies the number of cars to be moved, the type of car, and the origin and destination location. Specific car numbers are not used with these cards.

The "Turn" box in the upper left corner of a card tells us where the car is headed. Color-coded locations make it easier to sort the cards. The "Move" and "Car" boxes tells us to set out one boxcar. Below that, the "Origin" box in the A card, tells us this car is picked up from Willoughby and "Destination" tells us to spot this car at the Resort Warehouse. The "B" card sends the car back to Willoughby.

deck. For example, if my reefer siding at NSF hold five cars and I have three sets of cards for set outs totaling say eight reefers, then it is possible to have too many cars at the siding at once or none at all. Makes things interesting for the crew.

This system can be manipulated in a variety of ways to suit the specific operation. You can work in a time table

and train order operations scheme with this system and it also can be modified for through trains picking up and setting out cars.





Modeling the present day Nevada–California–Oregon Railway Part 1

– *by Don Hanley*
Photos by the author

Number 2480 leads 3656 as they head out of Stead, Nevada with 12 cars.

A modern prototype inspires a dandy 10'x10' spare room track plan with lots of operating potential ...



Recently on the MRH website, someone asked about the possibility of a fictional line in Northern California. One of the responses mentioned the N-C-O Railway. This piqued my interest so I began researching this prototype.

I used two primary sources of information: the first was the Western Pacific Railroad Historical website. I found information in subsidiaries of the history section of the site, giving me a nice history of the line.

The second source of information was Google Maps. These satellite images allow the modeler to have a bird's eye view of the line. This is a great feature for modelers. Google Maps includes the related Google Earth, which allows you to view the satellite photos from the same perspective we would view our layouts.

As the line leaves the former SP transcontinental main and heads north, it begins climbing toward the north valleys. The grades are steep and the curves are sharp. From the topographical information on Google Maps' terrain feature, it appears that the line climbs approximately 300' in

about 2 miles or almost a 3% grade. What makes this line ideal for modeling is that it has sharp curves, steep grades, and short train lengths.

A Brief History

This line began as a narrow gauge route running 236 miles north from

Reno, Nevada to Lakeview Junction, Oregon. The Western Pacific purchased the line in 1917 and converted it to standard gauge.



LOWER DECK

Standard gauging of the line was accomplished by laying new rails on the outside of the existing narrow gauge rails. As with many narrow gauge railroads, construction standards were not very high. The last narrow gauge train left Reno in January 1918, with standard gauge operations beginning on February 4, 1918.

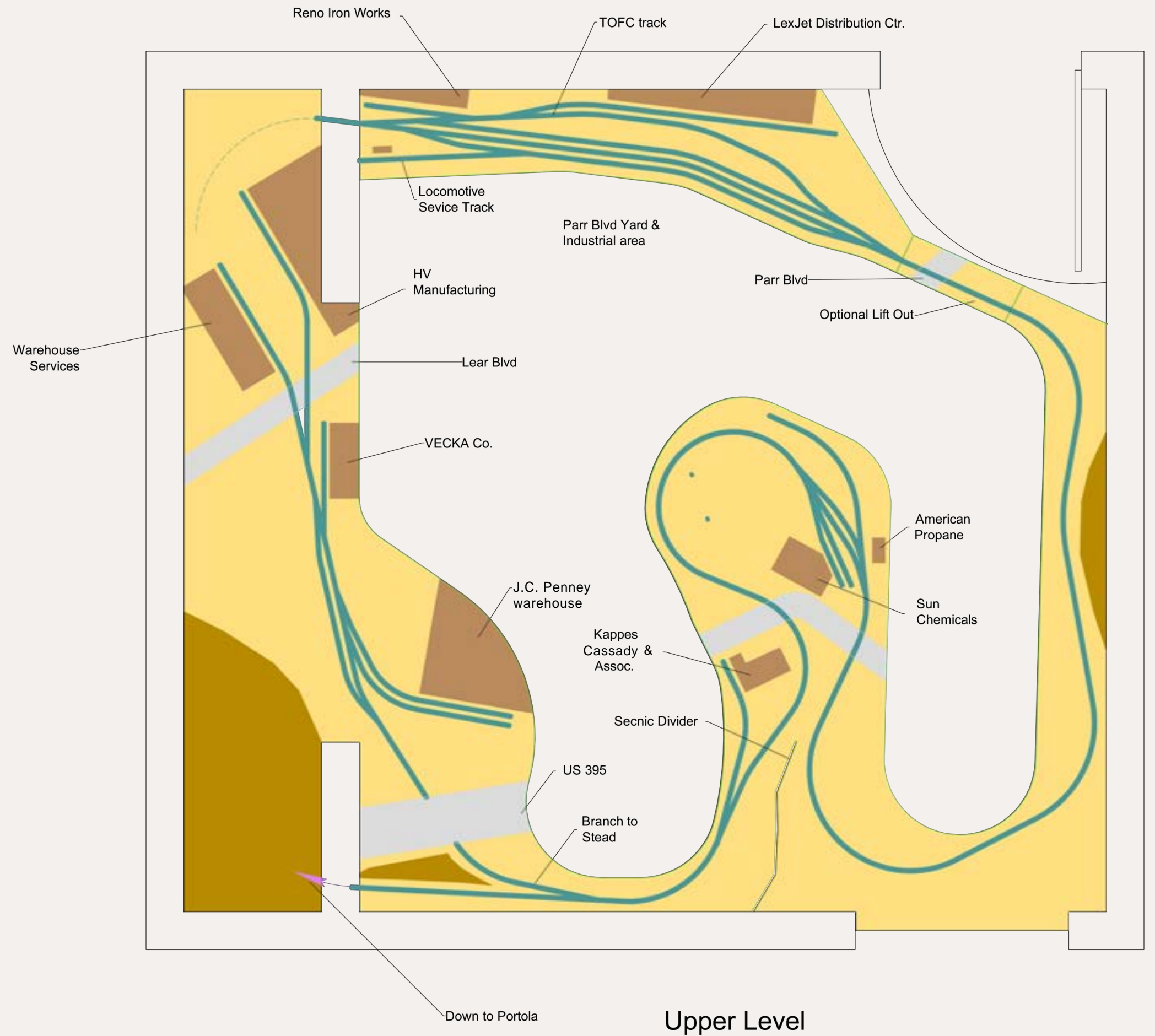
During WW II the short Lemon Valley Branch was built eastward to the Army's Reno Air Base, now called Stead. The Stead area has been expanded over the years with massive modern tilt-up concrete and steel structures. As the buildings went up, spurs were added as needed to service them.

Current Operations

Today, operations are freight only, with trains originating out of the yard in Sparks. Motive power usually consists of two SD units with trains being 4 to 12 cars in length.

Rolling stock on the line consists of covered hoppers, tank cars, gondolas, and boxcars, including 86' high-cube cars. The short branch still exists north of Stead, though it's little used. The line also connects to the old WP line at Reno Junction just east of the Chilcoot Tunnel.

At one time there was a wye at Reno Junction with one leg heading east to Winnemucca, NV and the other to the west going to Portola, CA. Service to Reno by the Western Pacific would have been out of Portola.



UPPER DECK

The Layout Design Considerations

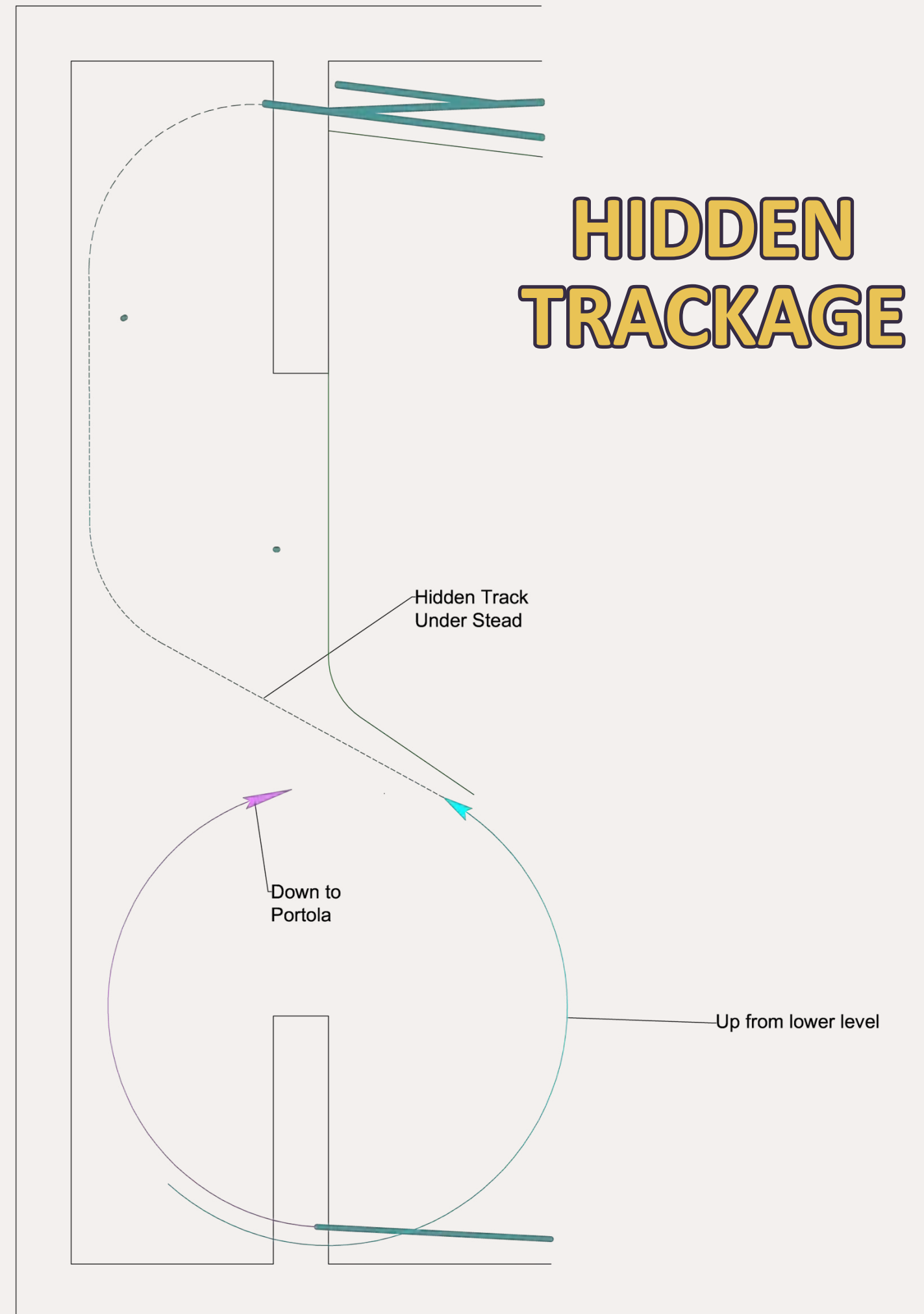
The considerations I used for the track plan are:

1. The room available is a 10 x 10 spare bedroom, with a full-length closet on one end. Removal of the closet wall is not an option. Punching through the drywall is.
2. I like the option of being able to have continuous running. However, I never want to make operations of the layout dependent on it.
3. I am not a fan of hidden staging tracks. The idea of switches under the scenery is not appealing to me. I designed the staging tracks to be at the back of the workbench, so access is easier.
4. The helix is a two track design, one for going up to the upper level and

one for coming down. I also designed the inside helix radius to be 24". With a portion of the helix in the closet area and the rest of it in the room, I needed space to get into the helix if a derailment should occur. This also gives room for helix construction since there is no other access.

5. I don't like duckunders! The lower level has a lift out in front of the entrance to the room. The upper level liftout is optional. As I get older, I find ducking under a low layout deck isn't fun, but an upper deck "nod-under" is acceptable. I hope I don't regret this decision in the future.

I based the track plan's industries on ones actually serviced by the modern-day prototype. Why freelance them when there are a great variety of industries present? I also grouped the industries similar to they way they are on the real thing.



Operations

I envision operations as they may have been when the Western Pacific was still in charge. A small yard at Parr Blvd. forms the center of operations. One end of the yard provides a service track for servicing engines. A tanker placed on the end of the track and connected to a small pump provides fuel. The fuel is pumped through an underground line to a fueling stand. The plan calls for a small building to be used as the yard office as well as storage for oil and lubricants.

Cars for Reno arrive from Portola staging. The Reno Turn drops off cars destined for the industries on the layout. In addition, if there are any cars to be delivered to the SP in Sparks, these get added to the train. The turn then continues down the branch to Sparks.

At Sparks, the locomotives get run around the train and then add cars from the SP to be delivered to Parr Blvd. and on to Portola. Once the turn is ready to leave Sparks, it takes cars to be delivered to the local industries up to Parr Blvd. Once the cars for the local industries get dropped, any outbound cars for Portola are added. The turn then heads back to Portola and the end of its run.

Locals operate both directions out of Parr Blvd. with the Reno local switching the Parr Blvd. industries before heading down to the lower level and downtown Reno. The Parr Blvd. industrial

area consists of modern concrete and steel structures typical of those built in the mid 50's through the 70's.

Switching at Parr Blvd. includes servicing the warehouse, Reno Iron Works and placing any loaded TOFC cars at the east end of the yard, with the empties placed at the west end. Upon completion of its work, the Reno local heads down to the lower level.

The first area on the lower deck track plan is the Valley Road industrial park, an older industrial / manufacturing area from the WWII era. Most of the structures featured here are older-style warehouses with pitched or rounded roofs and wood or metal siding.

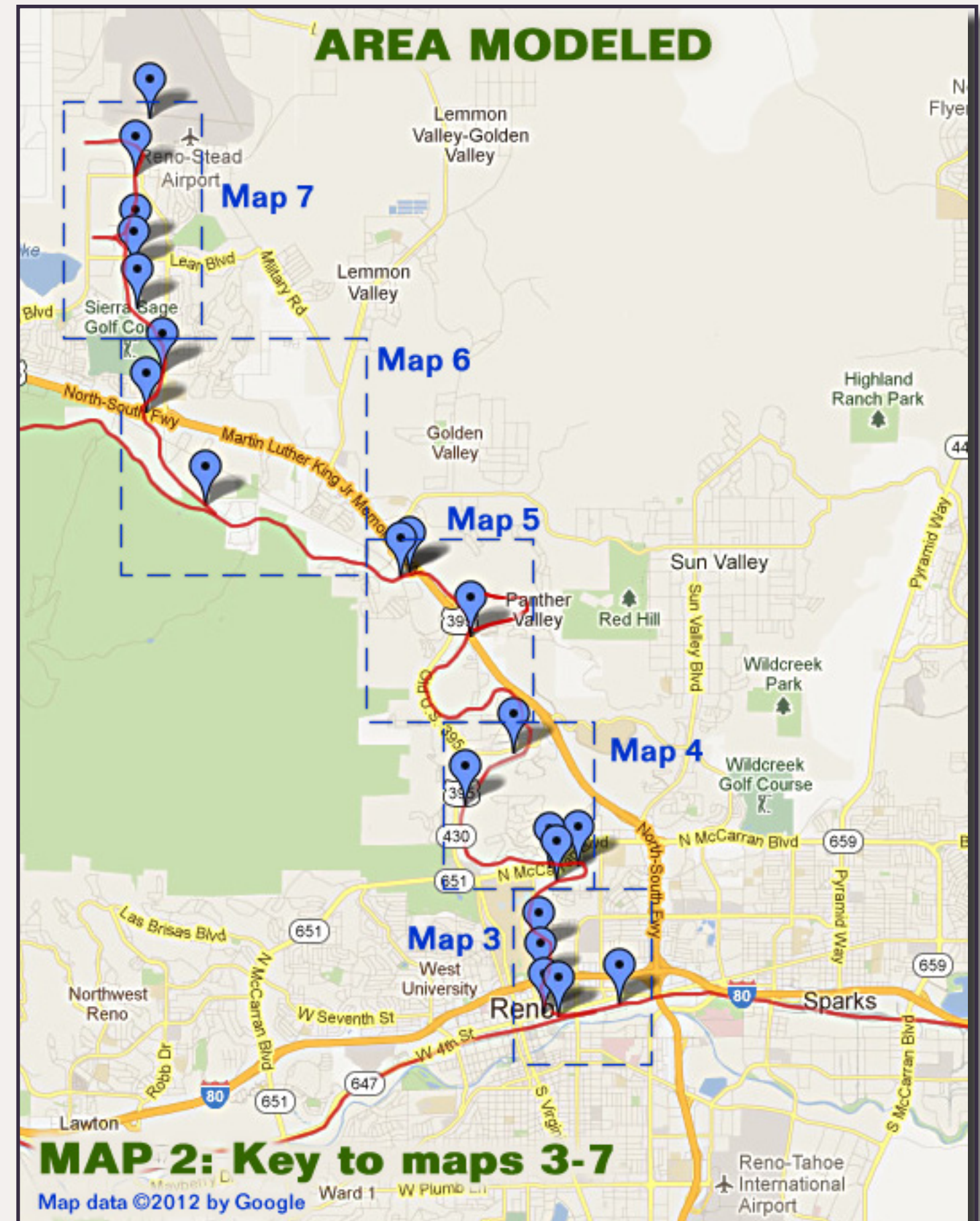
The cars destined for these industries are mostly boxcars with a few covered hoppers. An occasional tank car may also be needed to provide fuel oil for the boilers that power and heat the buildings. Outbound cars get staged on the runaround track for the return trip. Once the switching of this area gets finished, it's down to the old industrial section of downtown Reno.

Only two remaining industries get serviced in downtown Reno: a warehouse and Martin Iron Works. To service the warehouse the local needs to run around its train and put the caboose plus any cars on the point, since it is a facing point switch.

For Martin Iron Works, the crew needs to get clearance from the SP

dispatcher since the lead is so short. The job sets out empties picks up loads. Then it's back up to the Valley

Rd industrial tracks to pick up any outbounds and take them back to Parr Blvd.



Cars for the Stead local consist of tank cars, covered hoppers, and boxcars, including the big 86' high-cubes. The Stead local heads to the Golden Valley industries: American Propane, Sun Chemicals and Kappes Cassady & Associates.

Kappes Cassady and Sun Chemicals receive both covered hoppers and tankers. Kappes Cassady may also receive an occasional boxcar while American Propane is just tankers, and lots of them. The local leaves any empties that can be stored on the runaround track and picks them up on the return trip to Parr Blvd.

Once the local completes switching the Golden Valley industries, it heads on to Stead. Ducking under US 395, the first industry, the JC Penney warehouse, consumes boxcars like they were going out of style. Next comes Warehouse Services, another user of boxcars. Both take the 86' high-cubes along with 50' and 60' boxcars. Veka Co. receives covered hoppers as does HV manufacturing. HV manufacturing also receives tankers.

While a short runaround track is available in Stead, the crew needs to be careful. Given the number of cars to be switched, a crew could get a real clogged mess on their hands!

Once the switching is complete, the local heads back to Parr Blvd. yard for the end of its shift.

Motive Power

I see minimal motive power requirements for this layout. Most likely, the locals would rely on GP7's, with a choice of GP30's, GP35's, GP40's or U30B's for the Reno turn. Locomotives for the locals can be changed out by having a replacement come from Portola on the Reno turn. One of the local locomotives would then be taken back with the Reno turn for maintenance and service.

The ideas presented for this layout and its operation are by no means set in stone, but are presented as food for thought.

I personally like the mid to late 50's era for modeling. However the modern day operations out of Reno also seem ideal for modeling.

Modern Day Photos of the Line

These photos follow the line from the south to north. As one travels north the change in structure type is quite noticeable. In town are the typical brick structures of a by-gone era. The farther north along the line you go, the more modern the buildings become. McCarran Blvd. uses concrete ties, but after that it's normal wood ties.

If also go follow this line on Google Earth, you will get a very good idea of the modeling possibilities presented, which are many!

Photos on the following pages.

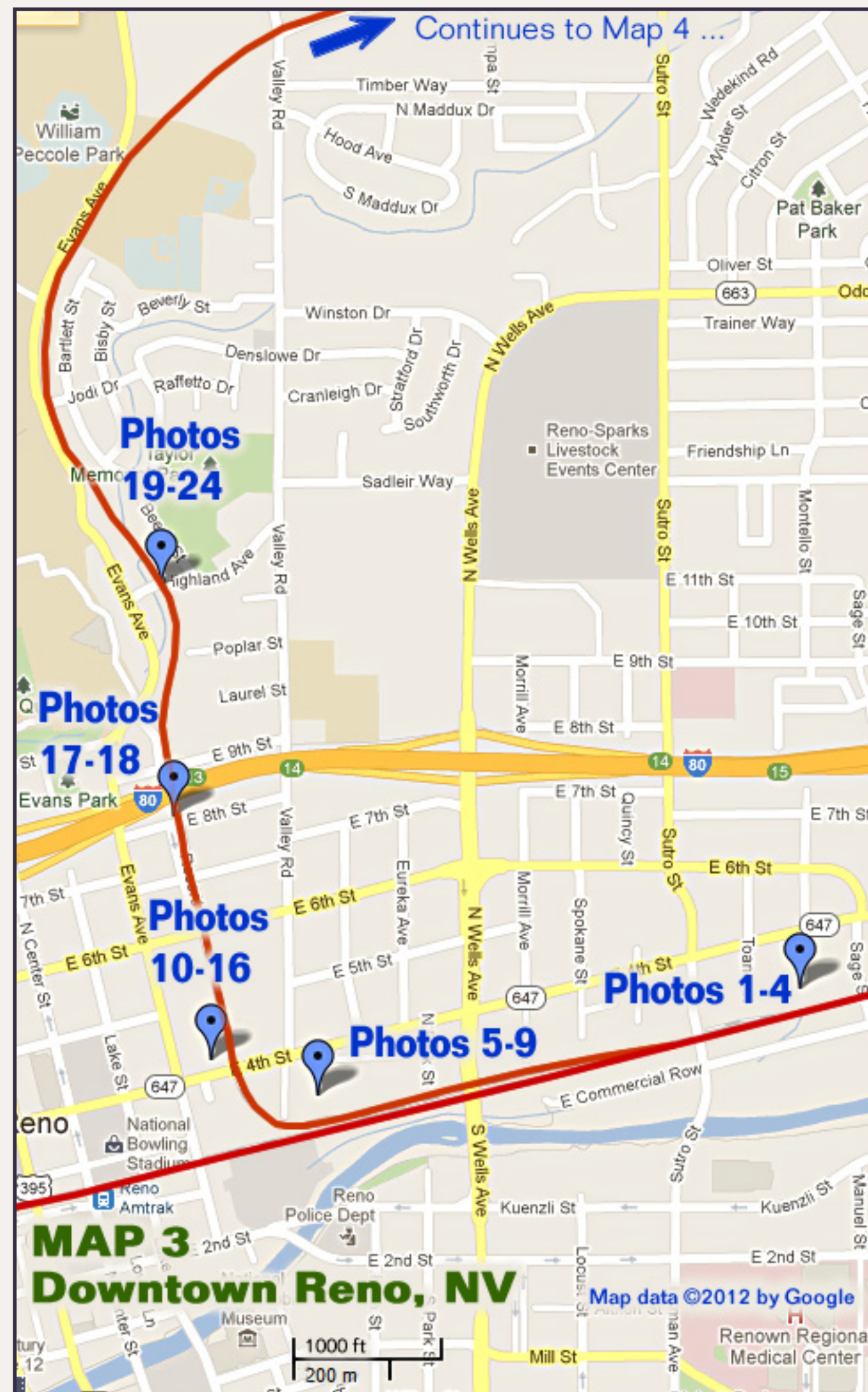




Figure 1: Reno Salvage located on the east side of Sutro Street.

Figure 2: Sutro St. crossing, note the center island with crossing gates.

Figure 3: Looking west from Sutro Street. The switch to the right is the beginning of the present day N-C-O Railway.



Figure 2



Don Hanley is interested in the Erie Railroad, specifically the Huntington, Indiana area during the 1950's.

In 1974, Don's new-found passion for photography merged with his first love, anything railroad-related. He also enjoys researching historical information and making photos of things to model.

A recent move from Indiana to Reno, Nevada has opened Don up to new areas to explore and photograph. He keeps an active hand in the hobby by expanding and detailing a fleet of rolling stock for his future layout. Don has had numerous articles published in Mainline Modeler magazine describing various structures and rolling stock detailing projects.

Don and his wife, Kathleen, are building a growing telecommunications business that allows him enough free time to pursue his passions: trains, photography, writing and most importantly, playing with the grandkids!



Figure 3



Figure 4



Figure 5

Figure 4: The line begins just west of Sutro Street. The junction had to be moved to the east due to the construction of the Union Pacific's grade separation trench through Reno. Here the line ducks under Wells Street.

Figure 5: Additional views of Martin Iron Works.

Figure 6: The line begins just west of Sutro Street. The junction had to be moved to the east due to the construction of the trench through Reno. Here the line ducks under Wells Street. Looking west the switch leads into Martin Iron Works and the line curves to the right. The use of concrete ties begins shortly after the switch.



Figure 6

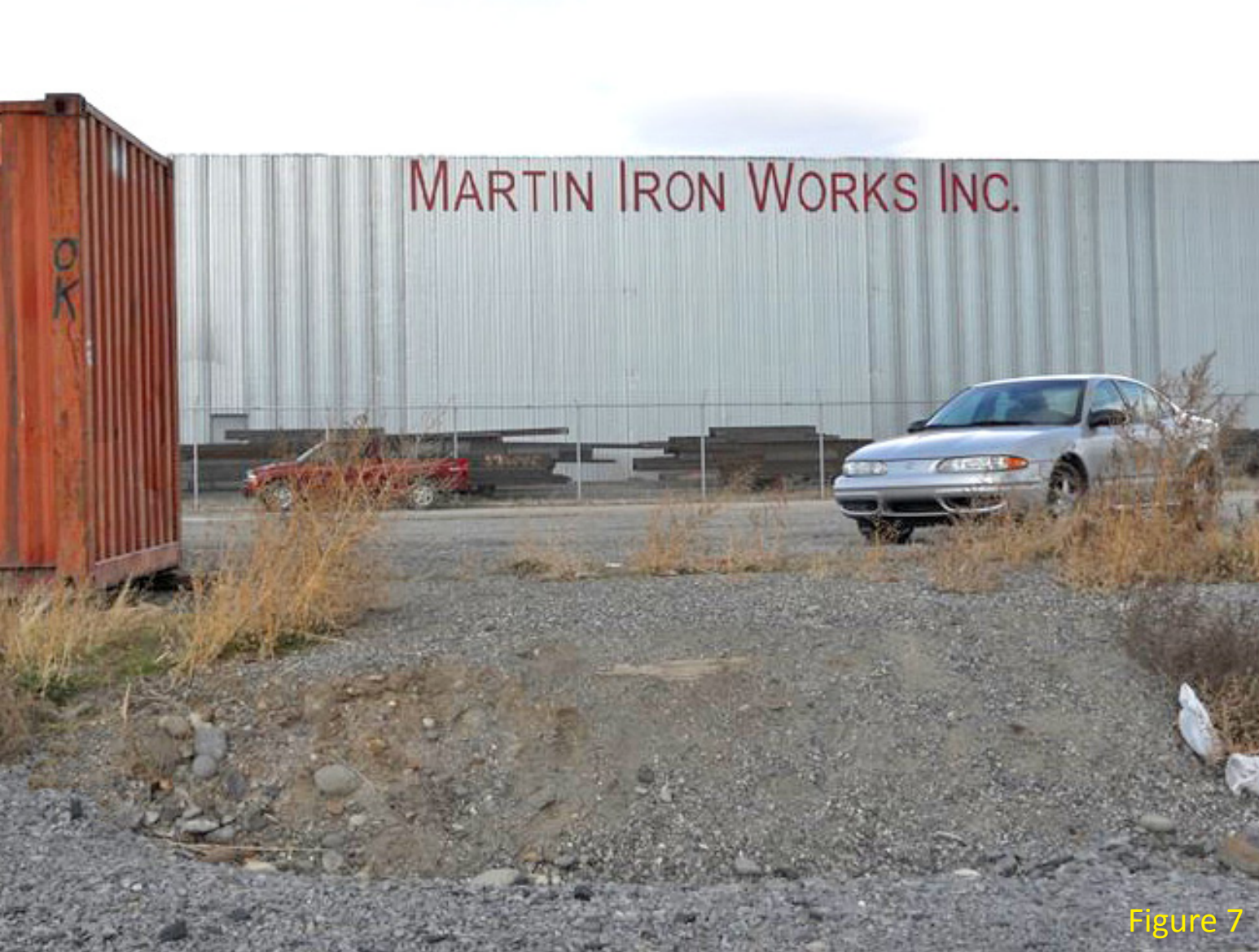


Figure 7



Figure 8

Figure 7: Another view of Martin Iron Works.
Figure 8 and 9: Views of old hotels along 4th Street. 4th Street, formerly was US 40 and the main east-west road through Sparks and Reno.



Figure 9



Figure 10



Figure 11

Figure 10: The old N-C-O Railway station in Reno located on the north side of 4th Street.

Figure 11: A view of the north side of the station. The tracks ran between the buildings at one point in time. I am relatively new to the area so I am sure with more time spent on research, one could determine the original locations of the tracks.

Figure 12: Looking north of the station. Notice the old rails buried in the dirt.



Figure 12



Figure 13

Figure 13: An abandoned spur line that serviced a since-demolished industrial building.

Figure 14: Looking south from 6th Street. at the present day line. The station roof can be seen to the right in the middle of the picture.

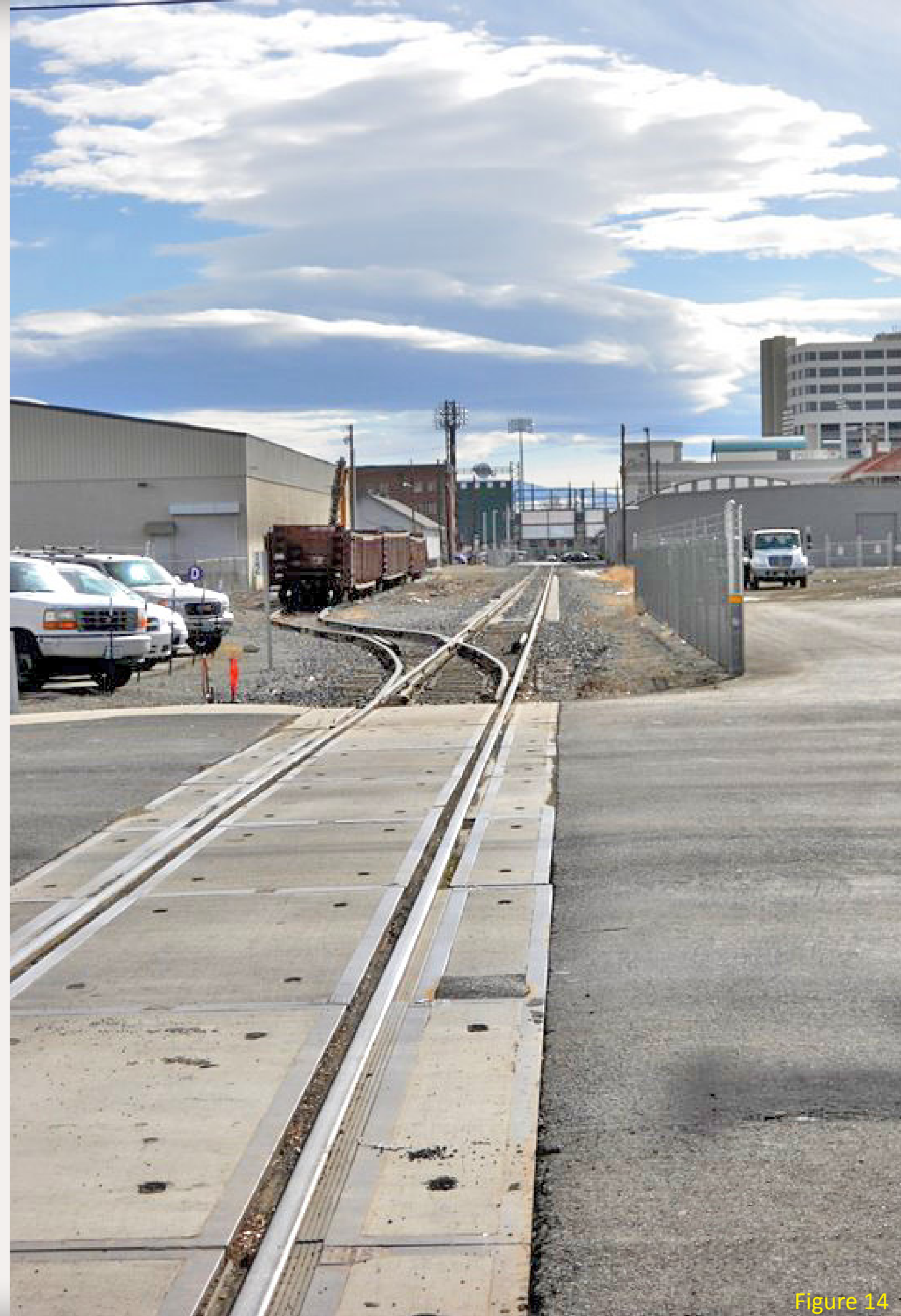


Figure 14



Figure 15



Figure 17

Figure 15-17: From 6th Street north to 8th Street the line runs down Record Street.

Figure 18: Views of the line crossing I-80. The bridge is used by university students to cross the freeway to their apartments.



Figure 16



Figure 18



Figure 19



Figure 20

The next series of views are of the line as it works its way north from I-80 along the University of Nevada Reno

Figure 19: The line curves to the east. The cars in the adjacent parking lot are customers of the coffee shop in the building shown below.

Figure 20: After crossing 9th Street and entering the University Area the line becomes very serpentine as it begins its climb to the north valleys.

Figure 21: The coffee shop is a neat structure that could be modeled and used at another location as a small industrial building.



Figure 21



Figure 22

Figure 22: Housing on the west side of the line at Highland Avenue.

Figure 23: The view looking north of Highland Avenue along one of the few sections of straight track.


Figure 24: Highland Avenue crossing details. The railroad used what it had on hand to make a barricade to prevent traffic from driving along the right-of-way at this location.



Figure 24



Figure 23

 **Reader Feedback** 
(click here)



Tool Identification

Who's got my nippers?

– by Vince Pugliese



More years ago than I care to remember, I was a student working one summer for a professional modelmaker, you know, the kind that makes architectural models and prototypes for designers. It was a dream job as I was getting paid for doing something I really loved. Trust me, those old craftsmen really knew their trade – there is a world of difference building for pleasure and building for a client who has to do a presentation for a multi-million dollar housing project!

One day one of these fellows came back from lunch with a brand new X-Acto number 2 knife (the one with the thicker aluminum handle). He took

it out of its package, walked over to the drill press and proceeded to drill a pair of holes in the handle.

Must be some sort of trick to improve the balance of the knife or something I thought to myself.

So I asked, “Hey, why are you putting holes in a brand new knife?”

“Well, at a previous shop there were almost 20 of us and I kept losing knives (and presumably other tools) to guys who would just grab the nearest one and not return it. I got fed up and started drilling 2 holes in their handles so I could tell right away which ones were mine.”

For club members, tool ownership can be as important as it was to my professional model building friend. I’m pretty sure that while no one intends to make off with someone else’s pliers, in a many tooled confusion it can easily happen.

Take a page from my friend’s book and start marking your tools – as Robert Frost wrote “Good fences make good neighbours.” The marking should be

something easily recognized, unique and at least somewhat permanent.

My friend from long ago liked the permanence of drilled holes, but you might try any of the following suggestions:

- Drill a unique pattern of holes in the handle.

Figure 1: A red “plastidip” coating on my tools makes them easily identifiable in a tangle of tools next to a layout.



Figure 1

- Mill a slot or slots with an abrasive wheel in a motor tool.
- Dip the end of each tool into something like Plasti-Dip (www.plastidip.com). This creates a rubberized coating and is available in a number of colors expressly to help color-code your tools

One last thing: you may want to get together with your buddies at the club and decide who will use which color or pattern to “brand” their tools, maybe even recording the decision.

After all, it could be confusing to see two X-Acto number 2 knives with identical ownership marks next to the junction you’ve been working on. ✓

Model Railroad Planning 2012



— by Joe Brugger

A detailed look at the planning and construction of Andy Sperandeo's 1947 Cajon Pass Santa Fe layout is the lead feature in this year's *Model Railroad Planning* annual. Tony Koester has edited MRP since 1995, varying the mix and focus a little each year but always delivering a satisfying menu of modeling from the prototype.

MRP 2012 concentrates more on the "why" of building a model railroad than the "how," showing how a real-world line's history and operations can be carried over to a model. Although MRP emphasizes prototype practices, "proto-lanced" layouts are also featured. It also gives space to emerging techniques, with pieces like Jim Six's "Photoshop as a planning tool."

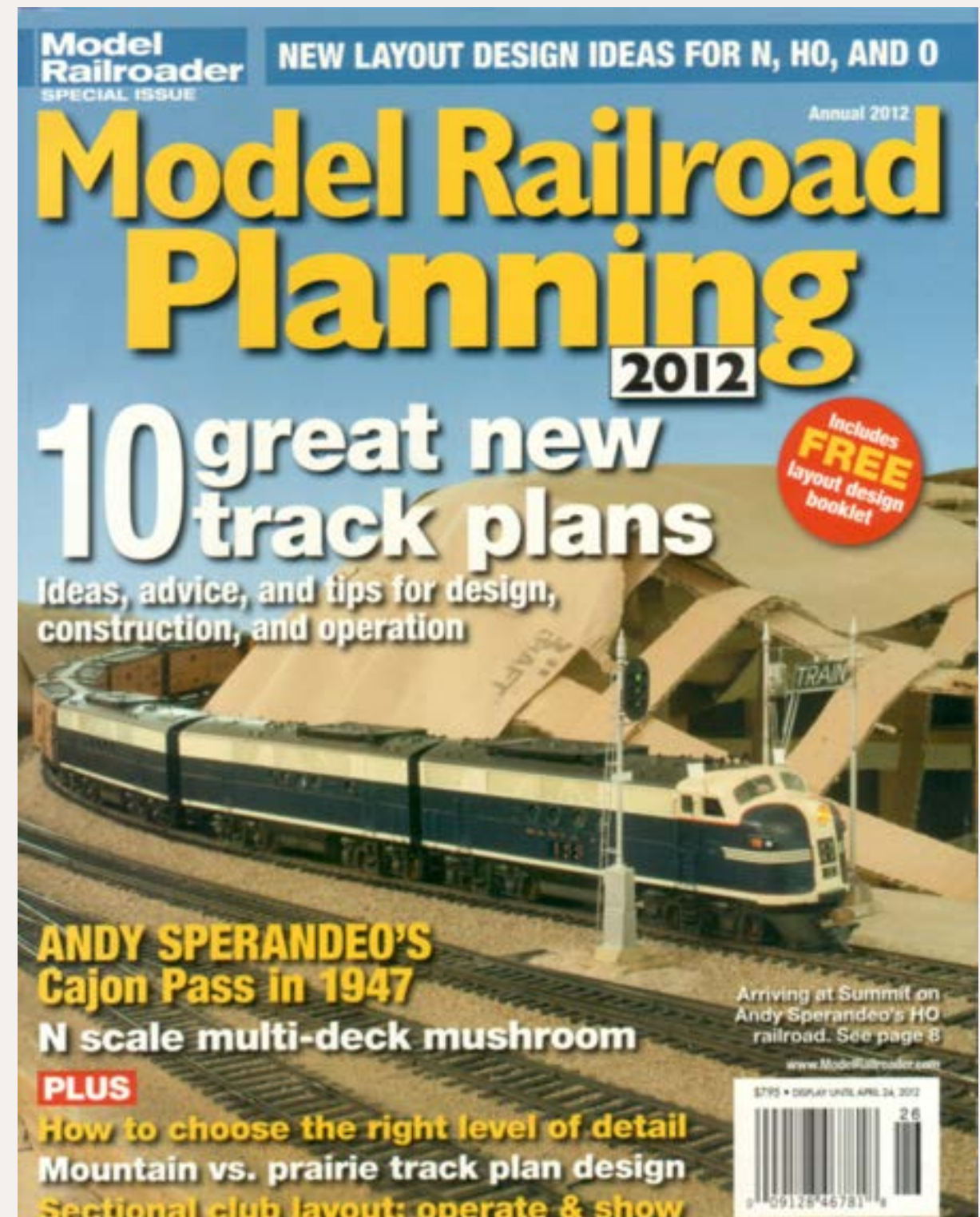
Readers who like to skim a magazine quickly will find "Learning points"

boxes that highlight the articles' main themes, and sidebars like "Why it's 1947" that go more deeply into fine points of layout planning.

The authors are a mix of familiar and fresh faces. There are 15 articles, including a room-sized Iain Rice layout set in the Midwest, Jim Lincoln sharing his experiences with an auto-rack unloading terminal, and Mike Confalone on expanding a layout's potential. Newcomer Jim Dance presents a large double-deck British Columbia N-scale mushroom layout, and Russ Rettig has three pages of photos and a track plan on his 2 x 16 foot apartment layout.

There are also good "think" pieces, such as "How to avoid the detailing trap" by MRH contributor Lance Mindheim. Lance makes a strong case for getting track and wiring in place, then coming back to add buildings and scenery as time permits. Having something running early keeps up the builder's interest, he says.

Of the 98 pages, roughly 90% are devoted to columns and stories. The publication is being marketed in a sealed plastic bag that includes a 15-page bonus booklet, authored by Andy Sperandeo, drawn from his monthly *Model Railroader* column, "The Operators."



"Model Railroad Planning 2012," Tony Koester, editor; 98 pages, Kalmbach 2012. \$7.95.

Available from Kalmbach website at www.kalmbachstore.com/model-

trains-railroading-model-railroading-special-issues-model-railroad-planning.html or on newsstands through April 24. Includes "Workshop tips: Layout design for operation" by Andy Sperandeo, 15 pages.

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Athearn: NYC GP9 diesel

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Athearn is producing its new GP7/GP9 diesel locomotive in several different road names – but the variations are not limited to just the decorating schemes. Dozens of road-specific details are factory applied to the **HO scale** model, as demonstrated by this New York Central “Torpedo Boat” GP9.

The first locomotives in EMD’s GP series were primarily intended for switching duties and did not require large fuel capacity. As GPs grew in popularity, so did the demands for larger fuel tanks, dynamic brakes, and

equipment for heating passenger cars. Steam generators, and their 800 gallon water tanks, required a lot of space, and the solution was to move air reservoirs to the roof. Railroaders seem to love nicknames, and the dual-service units soon became known as “Torpedo Boats.”

Athearn’s Genesis series GP7/GP9 locomotives are available for standard DC at \$179.98, or with SoundTraxx Tsunami® sound and a DCC decoder at \$279.98. Additional road names expected to be available this year include Santa Fe, PRR, Western Pacific, Erie Lackawanna, Nickel Plate Road, Boston & Maine, Union Pacific, SAL, and Southern Pacific.



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(click here) 

TRACKSIDE SHOWCASE

PBL: D&RGW 30-foot Stock Car

→ [Visit www.p-b-l.com](http://www.p-b-l.com)

P-B-L offers 10 specific versions of Denver & Rio Grande Western's 5500 class 30' wooden stock cars that were used by the Colorado narrow gauge railroad in the 1930s and 40s.

Each of these seemingly flawless **Sn3 models** is based on a specific prototype car with such subtleties as slight variations in the shade of black paint on the ageing car bodies. Number 5605 is a double-deck car that D&RGW used to haul sheep in the high country. With the exception of the nickel plated brass wheelsets, all components are finely-cast injection molded plastic. The ready-to-run models are priced at \$79.95 each.



TRACKSIDE SHOWCASE

Bachmann: Boston & Maine RS-3

→ [Visit bachmanntrains.com](http://bachmanntrains.com)

Bachmann's design team has done an admirable job of creating an N scale version of the versatile 1,600 hp RS-3 introduced by the American Locomotive Company in 1950.

Hidden beneath the authentic lettering and prototype paint scheme, Bachmann's smooth running model uses a built-in DCC decoder to control a precision can motor with dual balanced flywheels driving all eight wheels. In addition to the Boston & Maine version spotlighted here, the N scale model is also available for Denver & Rio Grande Western, Western Maryland, Southern Railway, Pennsylvania, and New York Central.

The ready-to-run model has a suggested list price of \$130.00 each.



TRACKSIDE SHOWCASE

Tangent: B&O Bethlehem 70-ton Gondola

→ [Visit tangentscalemodels.com](http://tangentscalemodels.com)



Tangent Scale Models' 70-ton, riveted, drop-end Baltimore & Ohio gondola is a meticulously scaled **HO model** of the 52' 6" prototype the Bethlehem Steel Corporation built for B&O in 1937.

Like the full-sized version, the model rides on ASF A-3 Ride Control trucks with metal wheels and axles. Tangent's ready-to-run model is available in 24 different road numbers at \$32.95 each.

Discounts are available for quantity purchases. Tangent also offers a similar welded car in several different road names.

TRACKSIDE SHOWCASE

Atlas Trainman: Alco RS-32/36 Diesel

[Visit atlastrainman.com](http://atlastrainman.com)



Click on the image to display a 3-dimensional view of the model that you can spin a full 360 degrees.

This ALCO RS-36 decorated as National Locomotive Company #1800 is available from Atlas Model Railroad Company as a limited edition model of the only locomotive produced by the short-lived diesel locomotive rebuilder.

NALCO was established in the late 1970s for the purpose of rebuilding RS-11, RS-32, RS-36, and other worn out ALCO diesel locomotives. The venture was not successful and #1800 is thought to be the only unit ever to emerge in working condition.

In addition to the NALCO scheme, Atlas also offers the **HO scale** DC-ready RS-32, and the virtually indistinguishable RS-36, decorated for Tennessee Central; Apache Railway; Nickel Plate Road; and Norfolk, Franklin & Danville at an MSRP of \$99.95. The RS-32/36 is also available undecorated at \$89.95.





About our News & Events Editor



Richard Bale writes our news column under the byline of *The Old Yardmaster*. He has been writing about the model railroad trade for various hobby publications since the 1960s.

He enjoys building models, particularly structures, some of which appeared in the June 2006 issue of *Model Railroader* magazine.



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Feedback**
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MRH News Desk: The Latest Model Railroad News, Products, and Events

March 2012

Fantasy Schemes Become a Reality

To celebrate the 30th anniversary of the merger of Norfolk & Western and Southern Railway, Norfolk Southern will honor its heritage by creating a fleet of 18 locomotives decorated in schemes reminiscent of its 18 predecessor railroads. In what could trigger a healthy boom in the sale of uniquely decorated model locomotives, NS said 10 SD70ACe units on order from EMD, and eight ES44AC locos coming from GE, will be decorated for Central of Georgia; Conrail; Erie; Erie Lackawanna; Lehigh Valley; New Haven; New York Central; Nickel Plate Road; Norfolk & Western; Penn Central; Pennsylvania; Pittsburgh & West Virginia; Reading; Savannah & Atlanta; Southern; Tennessee, Alabama & Georgia; Virginian; and Wabash. Noting that the Union Pacific Railroad used the old logos and colors but created new interpretations on the old paint schemes in its heritage program, NS officials said they plan to recreate the original liveries as accurately as possible...

Amherst Show Sets New Record

The Amherst Railway Society reports that 23,322 model railroad fans attended their annual show held in late January at West Springfield, Massachusetts. In addition, some 3,600 volunteer workers, security people, clinicians, vendors, and exhibit personnel brought the total to 26,022...

Amherst Awards \$10,000 to RMNE

In a related story, the Amherst Railway Society announced that the 2012 Founders Award for Preservation was given to the Railroad Museum of New England. RMNE won the award in recognition of the restoration work currently in progress on Boston & Maine GP9 diesel locomotive #1732. The \$10,000 award was presented at the Society's annual model railroad hobby show held at West Springfield, Massachusetts...

Scott Mason news

Scott Mason, popular host of the Scotty Mason Model Railroad prodcast show and creator of a line of structure kits and DVDs, has accepted a position outside the model railroad industry. Mason said he has promised his new employer he would not moonlight, which means he will no longer be making or selling kits or DVDs. However, he said, the Scotty Mason Model Railroad podcast will continue. Although he will not be creating any new products, Mason said he has a few of his recently announced Baker Coal Company kits (see page 110, MRH February 2012 for details). For the near future Baker Coal Company and Scotty's DVDs can be ordered from scottymason.com.

Walthers Broadway Limited at Strasburg RMP

Walthers has donated two complete HO scale Broadway Limited passenger trains to the Railroad Museum of Pennsylvania in Strasburg, Pennsylvania. The consist of each train includes three E8 locomotives and 13 cars. One train is already operating on the large layout in the museum lobby. The second Broadway Limited will soon be operating on the "Pennsylvania Landscapes" layout in the museum's interactive education center. The museum's prototype collection includes a Broadway Limited locomotive and a lounge car that is currently undergoing restoration ...

Walthers Exec Wischer Retires

Walthers senior executive, Bill Wischer, has retired after 44 years of service with the Milwaukee-based manufacturer/distributor. Over the years, Bill established a trusted relationship with the owners and employees of hundreds of model railroad manufacturers whose products are distributed by Walthers. Bill was instrumental in the development of many important Walthers brand products and played a key role in several major acquisitions including Train Miniature and Life-Like. He

will continue to act as a consult for his long-time employer while building HO models and working on his live steam locomotive...

Container Lost and Found

Rapido Trains was anticipating the arrival of a container of railroad models in mid-January when it learned that the ship en route from China lost 29 containers during a severe storm at sea. Other containers were crushed but remained on board the ship. Was Rapido's container safe, was it crushed with its contents smashed, or was it one of the 29 at the bottom of the sea? While Rapido owner Jason Shron and his team waited anxiously for an official report, an acquaintance with a sick sense of humor sent a message that said, "Rapido's container was off loaded on January 26th. Unfortunately, the ship didn't arrive at Vancouver until January 29th". At the end of January official word was received that the container had not been lost at sea, but the condition of its contents was unknown. The anxiety continued to build as the sealed container made an eight-day rail trip across Canada to Toronto, where it would be opened and inspected by marine insurance agents and officials of Canadian Customs. Finally, some good news: everything was found to be intact, and as you read this, Rapido's latest are on their way to customers and dealers all across North America...

Here's a look at some new products...

NEW PRODUCTS FOR ALL SCALES



Micro-Mark (micromark.com) has a new Scenery Cement that is specifically formatted to hold textured surface materials such as turf, ballast, and grass. The colorless, water-based latex glue remains somewhat flexible after application, which the manufacturer states will help deaden track noise when used to secure ballast. It is also recommended for static grass applications. Micro-Mark item #85043 is priced at \$7.95 for a 16 oz bottle.

Kadee Quality Products (kadee.com) has a novelty key chain made from the company's #900 G scale coupler. The unique item is priced at \$4.00 each and is available in red oxide, yellow, blue or red.



O SCALE PRODUCT NEWS



Atlas O (atlaso.com) has scheduled another production run of its popular bay-window caboose with delivery planned for the 3rd quarter of this year. The extended-vision body style is based on a Southern Pacific C-30-6 caboose built in 1951. Features of the Atlas's Trainman™ series model include a detailed smoke jack, brake wheel and brake line, interior lighting with chassis mounted on/off switch, detailed underframes, solid-bearing caboose trucks, and a see-through running board. The ready-to-run model will be available for 3-rail operation at \$54.95 or for 2-rail operation with 33" scale wheels and body-mounted scale couplers at \$59.95.

Foothill Model Works (foothillmodelworks.com) is selling O scale

24" non-operating wheels to be used as a scenery item. The cast plastic wheels accurately represent an American Car & Foundry Washburn pattern chilled iron

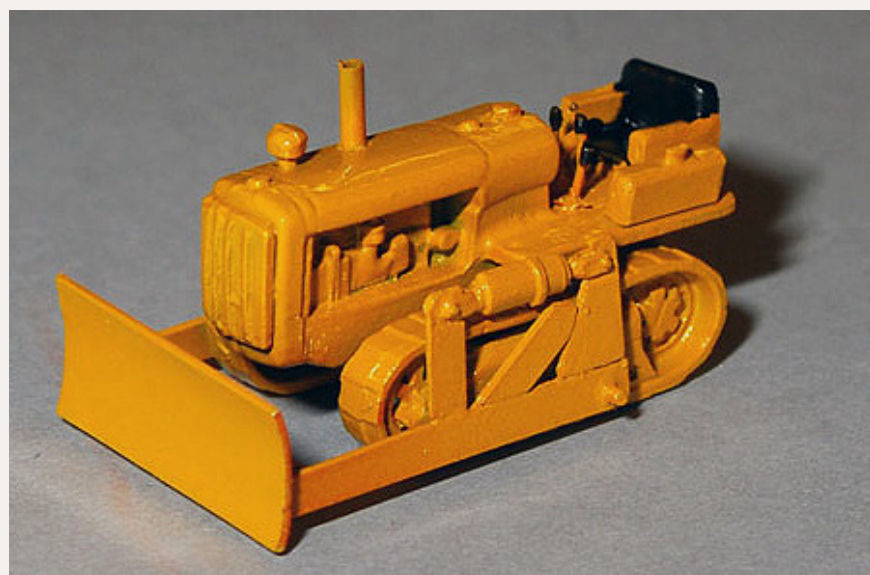
wheel with a 5" diameter axle hole. A package of eight wheels is priced at \$3.00.



Kadee Quality Products (kadee.com) introduced a new O scale Type E coupler at the recent Amherst Train Show. The new generation of all-metal couplers features a hidden knuckle spring and a more prototypically-detailed coupler head. Six models are available for various applications including short, medium, and

long center-set shanks, and over-set shanks. They are priced at \$9.50 for a package of two pair. The new couplers use the same centering system and draft gear boxes as Kadee's original O scale couplers.

S SCALE PRODUCT NEWS



Rio Grande Models (riograndemodels.com) has a white-metal kit for a Type D4 diesel crawler tractor as built by Caterpillar from 1937 to 1957. Item #3317 sells for \$50.00 each. An HO scale version (#3138) is available at \$25.00.

HO SCALE PRODUCT NEWS

New HO scale kit releases this month from **Accurail** (accurail.com) include a Wisconsin & Southern ACF triple-bay covered hopper at \$15.98, and a 50' steel boxcar decorated for Soo Line with a red plug door at \$14.98. Special packages include kits for a Lehigh & New England offset-side hopper car at \$14.98 each, or a three-pack with different car numbers at \$42.98, and a Union Pacific ACF triple-bay covered hopper car at \$15.98 each or in a three-pack with different numbers at \$46.98. Also a two-pack of D&RGW 40' wood stock cars at \$29.98.



American Limited Models (americanlimitedmodels.com) is selling HO scale operating diaphragms as an upgrade for Rapido passenger cars. The diaphragms are said to improve operation on curves. They are available in either gray or black at \$4.95 per pair or in a six-pack at \$23.95.

Late word from **Athearn** (athearn.com) reveals the company's delivery schedule for October includes Genesis series EMD passenger F-units decorated for Chicago, Burlington & Quincy. List pricing for the F3A is \$169.98 for DC models and \$269.98 for fully-loaded DCC units. Matched F3A-F3B locos with both units powered will be \$309.98 for DC models, and \$489.98 with power chassis and DCC decoders in both units. Athearn's Genesis GP9 will be arriving in October decorated for Chesapeake & Ohio (dark blue body with yellow lettering), Rock Island (all maroon body and maroon body with a yellow nose), Rio Grande (black with orange zebra nose), and Seaboard Coast Line (black with yellow strips, also a "Pulling For You" version). A Genesis GP15-1 decorated for Conrail is also in the October delivery schedule, along with a Cotton Belt-SSW class C-50-5 bay-window caboose.

Athearn is booking dealer orders now for its all-new HO scale Genesis series GP38-2 diesel locomotive introduced at the recent Amherst Train Show.



The initial production run will offer four road names on four different noses. Road-specific details on the high-nose Southern Railway GP38-2 (far left) include split radiator grilles, widely spaced fan housings, unique walkway lights, and oil-bath air filters for the dynamic brakes (other roads have PAF box filters). Next comes the long 88" nose of the Southern Pacific unit replicating EMD's late production run, along with distinctive notched step-wells, round stacks, L-shaped windows, and a special SP light package. The blue Missouri Pacific unit has a short 81" nose, extra jacking pads, closely spaced 48" radiator fans, chicken-screen radiator grille, and spark arrestors. In addition to the wide-nose safety-cab, the Canadian National GP38-2 (far right) has dual snow plows, and operating "lampshade-style" ditch lights. Delivery of the first production run is expected in late November. Candidates being considered for the second run include Canadian Pacific, Boston & Maine, Rock Island, and Union Pacific.



Atlas Model Railroad Company (atlasrr.com) has released a two-bay off-set hopper car with flat ends and new road names and numbers. The Atlas Trainman™ series HO scale open-top coal hauler features 50-ton trucks with blackened metal wheels, detailed brake gear, and body-mounted Accumate® knuckle couplers. New numbers will be issued for Detroit & Mackinac, Norfolk & Western, and Reading, as seen here. New road names include Canadian Pacific; Erie Lackawanna; Elgin, Joliet & Eastern; Litchfield & Madison (CNW repaint); Peoria & Eastern; Richmond, Fredericksburg & Potomac; and Wheeling & Lake Erie. The ready-to-run cars have an MSRP of \$17.95. An undecorated version is also available at \$13.95 each.

Blackstone Models (blackstonemodels.com) has just completed the latest release of its HO_{n3} ready-to-run D&RGW 2-8-2 class K-27 Mikado. Conversations with Blackstone officials at recent shows indicate a K-37 heavy Mikado is in the planning stages. The company is currently taking advance reservations for another release of its UTLX and CYCX narrow frame tank cars. Reservations are also being booked for an East Broad Top steel triple-bay open hopper car. Both the tank car and EBT hopper will be available weathered or with a new, pristine finish.

Bowser (bowser-trains.com) is booking dealer orders now for a late 2012 production run of its Executive series Baldwin DS 4-4-1000 diesel switcher. Baldwin Locomotive Works produced the 1000 hp prototype between 1946 and 1951. Bowser's HO scale ready-to-run model features separate air hoses, windshield wipers, grab irons, uncoupling bars, window glass, knuckle couplers, and an

operating headlight. The DS 4-4-1000 is available for standard DC operation (with eight-pin DCC-ready plug) at an MSRP of \$179.95, and with a SoundTrax Tsunami™ digital sound decoder at \$289.95. Road names in this run are CP (traditional maroon and grey), CP Rail (Pac Man scheme), Western Maryland (Fireball), Santa Fe (Zebra stripe), SOO (red and white), Erie Lackawanna (maroon and grey), PRR, Norfolk Southern (original red with yellow band), and Chicago Great Western.

A special run of Bowser C-630M locomotives uniquely decorated for Canadian Pacific, Cape Breton & Central Nova Scotia, and two Canadian National schemes, is available exclusively from Otter Valley Railroad (ovrtrains.com), an e-commerce dealer in Ontario.

Broadway Limited Imports (broadway-limited.com) has scheduled a July arrival date for HO scale models of Pennsylvania Railroad class M1a/M1b 4-8-2 Mountain-type steam locomotives. Introduced in 1930, the M1a locomotives



came equipped with large class 210F75 tenders. At the end of WWII, some of the original locomotives were modified for increased boiler pressure and the addition of circulators to the firebox. These became the M1b versions.

BLI's HO scale model comes with the Paragon2 Sound and Control System with integral DCC decoder, and prototypical light operation with golden-white LED head and rear light. The locomotive has a diecast metal chassis with ABS plastic superstructure, all-driver electrical pickup, traction tires, metal couplers compatible with Kadee®, separately-applied handrails, ladders, whistle, brass bell, operating cab-roof vents, and factory-installed engineer and fireman. The HO scale ready-to-run models have an MSRP of \$399.99.

Concept Models (con-sys.com) has introduced an HO scale resin body kit for a PTRX cryogenic tank car. The prototype is used to transport ethylene, which must be kept cool at all times. Details include the large reinforcing rings near



the ends of the car, and the cabinet at the side that houses controls and monitoring equipment used on the prototype to fill and off-load the distinctive tank car. The kit sells for \$24.99 and includes decals and photo-illustrated instructions. This is a body kit only. Detailing parts such as hand grabs, ladders, trucks, couplers are not included.



ExactRail (exactrail.com) has released an HO scale Pullman-Standard 5344 boxcar. A preproduction sample of the new model was shown last September at the Western Prototype Modelers meet in San Bernardino, Calif. Between 1977 and 1981 – when Pullman Standard got out of the freight car business – almost 7,000 of the full-sized 5344s were built, with many of them still operating in regular service. ExactRail's Platinum series model features wire grab irons, wire uncoupling bars, wire brake rods, separately-applied door tracks, Kadee® #58 couplers, and the model manufacturer's unique narrow draft box with shank wedge, striker casting, and full nut-and-bolt detail. Road names on the initial production run will be RI-Route Rock; BAR-Bangor & Aroostook; MNS-Minneapolis, Northfield & Southern Railway; Milwaukee Road; SAN-Sanderville, and TM-Texas Mexican Railway. Depending on the specific practice of the prototype road, the ready-to-run model will come with either 70-ton Barber S-2, or 70-ton ASF Ride-Control trucks. An undecorated version is also available. ExactRail's 5344 has a list price of \$39.95.



Fos Scale Models (foslimited.com) designed Mitchell & Godfrey Distillers as a flat background structure with a very shallow footprint – in this case just 2" deep. The 11" wide tower with its mansard roof and laser-cut wrought iron railing tops out at 8" tall. Additional features of the HO scale craftsman-style kit include Tichy windows, corrugated and rolled-paper roofing, laser-cut walls, metal detail parts, and special signage. Item #046 is priced at \$89.95.

InterMountain Railway (intermountain-railway.com) has scheduled a September/October arrival date for the second release of its 89' Bi-Level auto rack car. The HO scale ready-to-run car features etched and formed metal see-through side panels, operating end doors, metal wheelsets, and Kadee® couplers. Racks and flats with matching road names include CN, Soo Line, GTW, and CP Rail. Non-matching rack road names mounted on TTGX flats include Chicago North Western, D&RGW, FEC, and UP/MP. The model has an MSRP of \$68.95.



This month **Kadee Quality Products** (kadee.com) will release a 50' PS-1 steel boxcar decorated for Rock Island. Like the prototype PS-1, the HO scale ready-to-run model has a 10' Youngstown door and a cushion underframe. It represents a prototype built in 1969 without a running board. Kadee's model has an MSRP of \$35.95.



This Central of Georgia version of a 50' steel boxcar has a 9' Youngstown door. Kadee has scheduled a release date of May for this HO scale ready-to-run model. It will be priced at \$34.95.



Kato USA (katousa.com) is selling HO scale Gunderson MAXI-IV three-unit articulated well cars decorated for BNSF and TTX. Each three-unit car has an MSRP of \$100.00. The wells are compatible with Kato's magnetic 53' intermodal containers.

MTH Trains (mthtrains.com) new HO scale EMD GP35 diesel locomotive features a long list of separate details that will be applied to the ABS plastic body including windshield wipers, metal see-through body grilles, lift rings, metal grab irons and handrails, metal horn, see-through rooftop fan housings, and brake cylinders, air pipes, and swing hangers on Blomberg trucks. Electrical features include directional headlights, lighted number boards, remotely controlled couplers compatible with Kadee® magnetic couplers, and decoders for DCC and MTH DCS Digital Command System with sounds recorded from a prototype GP35. Road names released and scheduled for future release include UP, SP, Santa Fe, PRR, B&O, NW, NYC, E-L, D&RGW, Wisconsin Central, DT&I,

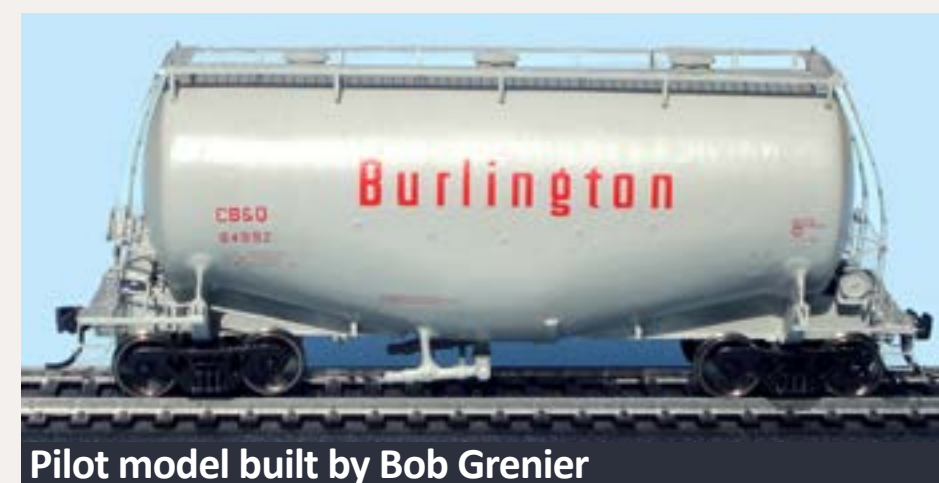


and Guilford Rail System. The HO scale ready-to-run locomotives are priced at \$299.99 each.



The latest HO scale kit released by **Nick and Nora Designs** (nickandnoradesigns.com) is County Line Liquors. The contemporary A-frame structure has laser-cut walls, peel-and-stick shingles, a sheet of color signs, and a special stencil to create the roof signs. The finished structure has a footprint of 3"

wide x 3.75" deep. Kit STO13 is available at \$39.50 each.



Pilot model built by Bob Grenier

Q Connection (qconnection.biz) is selling a resin kit for an HO scale GATX Pressure Slide Whalebelly hopper. The kit comes in two versions; CB&Q or SAL. Designed and produced by Wright Trak Railroad Models, the kits consist of a one-piece

cast-resin tank body, two end caps, stainless steel photo etchings, Athearn A-3 Ride Control roller bearing trucks, Kadee® #58 couplers, and Hi-Tech Details® brake hoses. Instructions are specific to replicate either the CB&Q or SAL prototype. The kits are priced at \$66.99 each. Q Connection offers three sets of decals created by Microscale specifically for the Whalebelly model. Decals are available for CB&Q and BN; SAL and SCL; and SBC, CSX and Dragon, at \$7.00 per set.



Rapido Trains (rapidotrains.com) has added a New Haven smoker coach to its line-up of Osgood Bradley cars. New Haven's series 8500 coaches had a separate smoking section at one end of the car. To help clear the air, a special ventilation system with a large roof vent was installed above the smoker's lounge. Rapido's ready-to-run HO scale version will have full interior details as well as the correct roof hatch and vent. Additional features include full underbody detail, separate grab irons, authentic paint and lettering, and Rapido's Easy-Peasy lighting system. The cars have an MSRP of \$79.95. The deadline for reservations is June 16, with delivery anticipated this fall.



In other news, Rapido reports that it has scheduled a production run of 10-window coaches decorated for Bangor & Aroostock (gray and blue without skirts), Long Island (white and blue MTA without skirts), Penn Central (green with no skirts) and as seen here, Long Island (gray and orange "Dashing Dan" with no skirts). No firm delivery date yet, but another production run of 10-window coaches with new numbers has been scheduled for both New Haven and Boston

& Maine. Advance reservations are a requirement since Rapido sets production runs to meet reserved quantities. The deadline for reservations is June 16. The current run of Osgood Bradley coaches for Long Island, PC, and BAR are well into the production cycle and should be available later this month or in early April.

Red Caboose 57' mechanical refrigerator cars will be released this fall decorated for Tropicana. Twelve different paint schemes on both white and orange bodies will be produced with a total of 78 car numbers. The ready-to-run HO scale cars will come with metal wheelsets, and Kadee® couplers. The models will have an MSRP of \$39.95. Additional details are available from InterMountain Railway Company (intermountain-railway.com) which is responsible for marketing Red Caboose brand products.

SceniKing (sceniking.com) has new one-piece photo Backdrops Scenes that can be mixed and matched to create unique backdrops for layouts and dioramas. Twelve scenes 72" long by 16.5" high are available. The edge of the backdrops are graphically compatible with each other, which allows them to be positioned in a limitless combination. All are dated to portray the 1950s. Trackside structures in the scenes are HO scale, making them suitable for use as industrial settings. SceniKing also has one-piece backdrops designed for HO scale urban, rural, and main street storefront scenes of the 1950s. Visit the website for more details including pricing and the location of local retail outlets.



Sunshine Models has released cast-urethane kits for three HO scale versions of 50' Santa Fe class Fe-24 boxcars. The original 500 prototypes were built by Pullman, with the first 200 being painted Pullman green with Dulux gold lettering and the ATSF map and slogan on the sides (above). They were equipped with the infamous Allied Full Cushion trucks that were later determined to be unsafe.

The remaining 300 cars went into regular freight service. They were painted Santa Fe standard mineral brown, and rode on Barber S-2 trucks. To



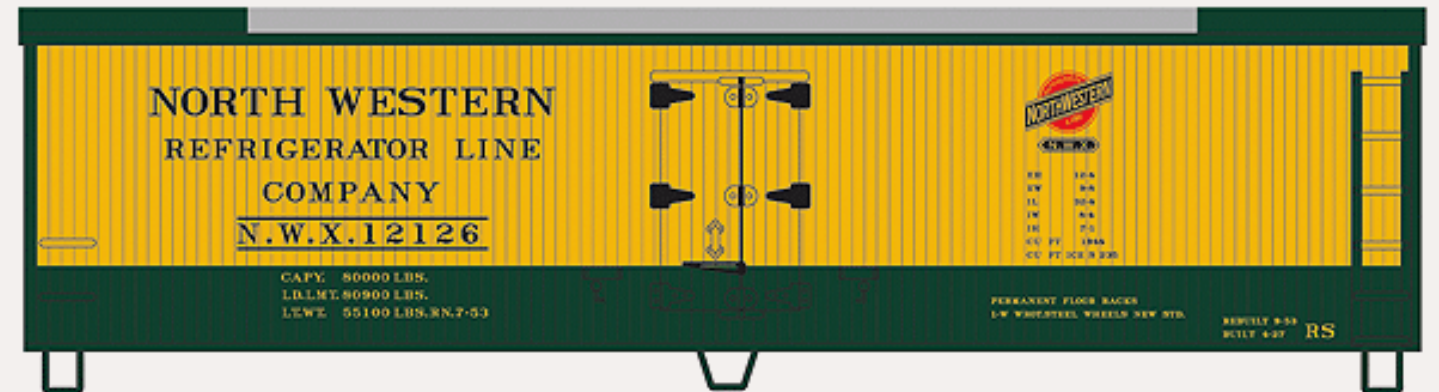
compensate for the extra-wide 14' door opening, a reinforcing sill was added under the door and adjacent section. For additional strength, the number of internal posts to the right of the door was increased, which accounts for the unusual design of seven panels on the right and four wider panels on the left. In late 1948, ATSF raised the roof 12" on 79 cars (below) to handle Plymouth and Dodge auto bodies that were transported stacked on their ends.



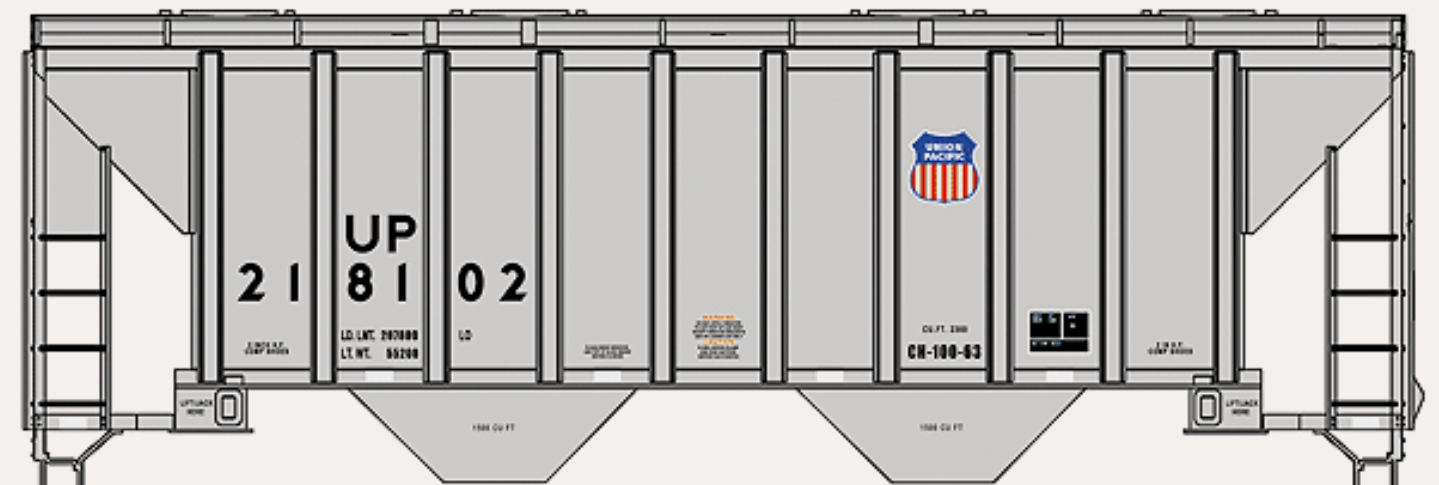
Sunshine urethane kits come with extensive instructions, a prototype data sheet, proprietary decals, and all necessary detailing parts except trucks and couplers. Kits for Fe-24 cars with decals for passenger service are \$45.00 each. Those assigned to freight serve are \$43.00 each. Cars with the raised roof are \$48.00 each. Add \$4.00 shipping on up to five kits, or \$8.00 for six to ten kits. Patient hobbyists can assemble Sunshine kits into museum-quality models. A degree of patience is also required in dealing with the company, since delivery can take up to six months. Sunshine does not accept credit cards, but it has been their policy not to deposit customer checks until about 30 days before an order is ready to ship. Sunshine does not have a presence on the Internet and does not use email. To learn full details about ordering, send a stamped self-addressed envelope to Sunshine Models, Box 4997, Springfield MO 65808-4997, or visit sunshinekits.com. This website is not officially associated with Sunshine Models but maintains a current list of all products along with helpful hints on how to order from Sunshine.



Walthers (walthers.com) has scheduled a September delivery date for WalthersProto™ 85' Pullman Standard 10-5 sleepers decorated for Santa Fe, Pennsylvania (Fleet of Modernism), Northern Pacific, and B&O, as seen here. The cars feature factory-installed grab irons, tinted green windows, sprung operating diaphragms, ProtoMAX™ metal knuckle couplers, and appropriate passenger trucks with 36" turned-metal wheelsets. The cars (items 920-15205 through 920-15208) have an MSRP of \$64.98 each.



Also due in September are four new decorating schemes applied to Walthers 40' double-sheathed wood-side reefer with steel roof and ends. Road names include BREX-Burlington Refrigerator Express, WFEX-Western Fruit Express, NWX-Oscar Mayer, and, as seen here, NWX-North Western Refrigerator Lines. The ready-to-run HO scale Mainline series cars (items 910-3601 through 910-3604) have an MSRP of \$21.98 each.



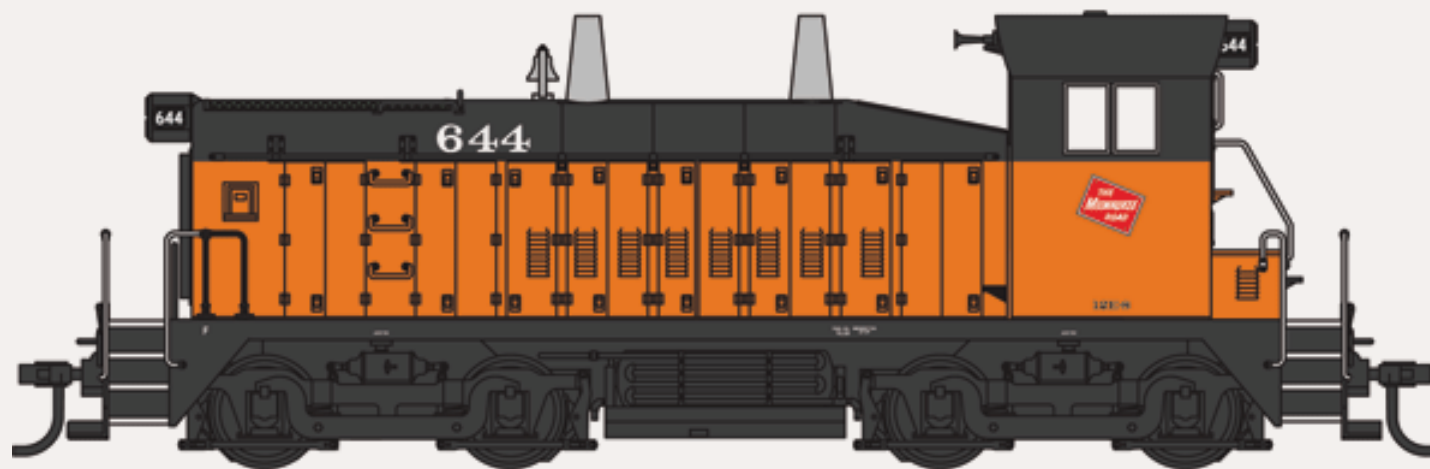
Walthers will release its Mainline series 37' 2980 cubic foot covered hopper with new numbers in September. Road names with new numbers will be

available for ATSF, CNW, CSX, and UP (Building America). The Mainline series models (items 910-7101 through 910-7108) will have an MSRP of \$21.98 each.

Walthers says that its next run of HO scale 50' Sieco pulpwood flat cars will be available in October. The ready-to-run cars will be decorated for ACL, CIRR- Chattahoochee Industrial Railroad, Missouri Pacific, and Southern (items 920-104501 through 920-104508). The MSRP will be \$29.98 each.



Orders are being booked now for WalthersProto™ 50' AAR boxcars with twin offset Youngstown corrugated doors scheduled for release in November. Additional features of the HO scale ready-to-run models include 5/5 Dreadnaught ends, and separate grab irons. The cars (item 920-102001 through 920-102008) will have an MSRP of \$34.95 each and will be available decorated for Santa Fe, Kansas City Southern, Nickel Plate Road, and Southern Pacific.



The next production run of WalthersProto™ EMD SW9/1200 diesel locomotive is scheduled to arrive in late April. The ready-to-run locomotives have been upgraded with more than 60 separately-applied detail items, plus a package of optional parts the consumer may apply. The models have constant and directional LED headlights, cab interior with crew, and see-through running boards.

The HO scale models are based on Phase 3 prototypes as they appeared from approximately 1957 to the early 1960s. Road-specific Phase 3 details include battery boxes with five louvers, two lift lugs on each side of the hood, dual-lens headlights, large fuel tank, Leslie S-3 horn (three chimes forward), square truck journal boxes, footboard pilots, and pilot grab irons. The run includes ready-to-run models decorated for Baltimore & Ohio, Burlington Northern, Milwaukee Road, and Pennsylvania Railroad in both standard DC at a list price of \$169.98, and sound equipped DCC at \$259.98.



New HO scale Cornerstone® structure kits coming from Walthers include this impressive 11-story Ashmore Hotel. It will be available next month at a list price of \$59.98. The model is 13.875" high and has a footprint of 4.437" x 8.625". Multiple kits can be combined for a taller, wider, or longer structure.

Also coming next month is a Cornerstone® kit for a brick, single-story Industry Office building at \$19.98 each, and a brick two-story, two-bay Fire Station kit with a list price of \$34.98. It comes with decals for several fire companies and can be built with or without a hose-drying tower. Modern glass doors as well as vintage wood equipment doors are included. The assembled fire station occupies a 4.875" x 5.5" space. The tower is 9.5" tall.

Walthers has cancelled production on two groups of HO scale freight cars. Insufficient dealer reservations was cited for canceling further work on WalthersProto™ 53' AAR drop-end mill gondola (920-105101 series), WalthersProto™ 50' Gunderson hi-cube paper service boxcar (920-101701 series), and Walthers Platinum Line™ 54' PS2-CD 4427 covered hopper (932-41275 series). Despite a history of strong sales, production difficulties prompted the cancellation of Walthers 50' insulated exterior-post boxcar (932-60351 series), and 50' insulated smooth-side boxcar (910-1601 series).

Wiseman Model Services (wisemanmodelservices.com) continues to organize and catalog the thousands of detail parts and accessory items it has acquired from businesses that have closed in recent years. Among the product lines now viewable on their website are Walker Vintage Vehicles; National Motor Company; Back Shop brass detail parts in O, On3, and On30; N Scale of Nevada; SS Scale Structures; and Railway Engineering structures.

N SCALE PRODUCT NEWS



Atlas Model Railroad Company (atlasrr.com) is preparing another release of its Trainman™ series N scale ACF 3560 covered hopper for release in the second quarter of 2012. The three-compartment ACF® 3560 Center-Flow covered hopper was designed to handle heavy, high-density, dry bulk commodities such as salt, fertilizer, starch, bauxite, and clay. The dimensions of the 100-ton prototype were kept within a Plate B specification, the smallest modern plate diagram. The ready-to-run N scale model will have an MSRP of \$14.95, and will be available decorated for Morton Salt, Chessie System, CSX, Corn Products, FMC, and Watkins Salt. An undecorated model will also be offered at \$11.95.



BLMA Models (blmamodels.com) has completed another release of its N scale Norfolk Southern class G-85R TopGon cars. The ready-to-run model features an etched metal brake platform, 100-ton trucks, and knuckle couplers. Twelve road numbers are offered with the lettering on each car showing load weight, light weight, and rebuilt date specific to each road number.



Eastern Seaboard Models (esmc.com) will soon release a model of a Pennsylvania Railroad 50' class X58 exterior-post boxcar. The N scale model replicates the more than 2,500 cars rostered by PRR. The body and underframe of the ESM model are injection-molded plastic, with etched brass running board, brake platform, and end platform. The ready-to-run model comes with BLMA ASF 70-ton Ride Control roller-bearing trucks and Micro-Trains® #1015 knuckle couplers. The model will be available in three configurations, with each type representing a distinct era in the life of the X58.



Here's a look at two pre-production samples of N scale Nippon-Sharyo Bi-Level car coach and cab-coach commuter cars coming soon from **Kato**

USA (katousa.com). The top photo shows a Virginian Railway Express gallery bi-level cab-coach that will have an MSRP of about \$35.00. The coach in the lower photo will list for about \$30.00. Production quantities are expected to be available early this month. A Virginia Railway Express starter set with an MP36PH locomotive, two bi-level coaches, and one bi-level cab-coach is expected soon at an estimated MSRP of \$180.00 to \$190.00.



Micro-Trains (micro-trains.com) is selling a Missouri Pacific two-bay Centerflow covered hopper. The car has round roof hatches and is lettered for MP with a red, white, and blue shield of the Union Pacific Railroad which took over the MP in 1982. The N scale ready-to-run car has an MSRP of \$27.35.



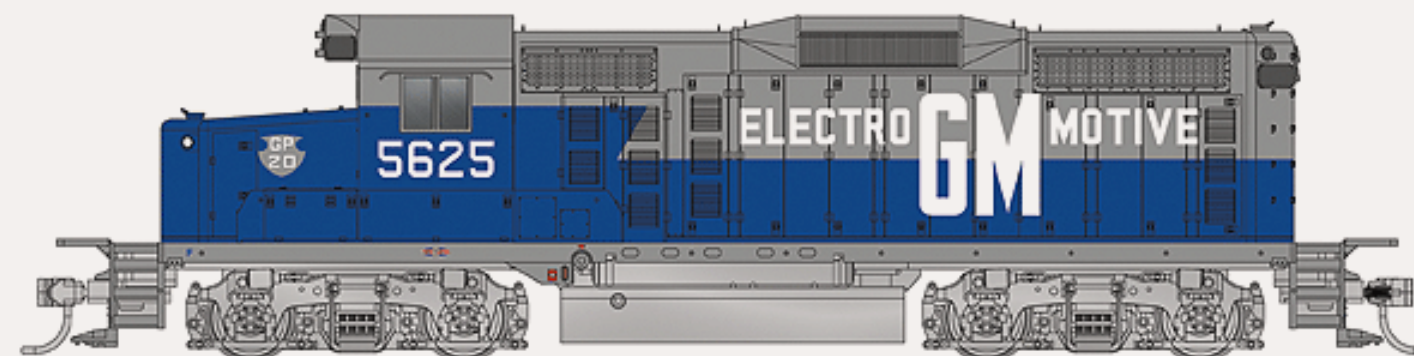
Also new from Micro-Trains is this 50' rib-side boxcar decorated in Soo Line's distinctive 1977-era paint scheme. The prototype had 10' plug-doors and was built without a running board. The ready-to-run N scale model has an MSRP of \$21.90

Next month, **NJ International** (njinternational.com) will introduce a new kit for an N scale Freight Shed with a pocket track and covered loading platform. The assembled building has a footprint of 10.875" x 3". The injection molded plastic kit is priced at \$39.99.

Red Caboose's 57' mechanical refrigerator cars will be released this fall decorated for Tropicana. Twelve different paint schemes on both white and orange bodies will be produced with a total of 78 car numbers. The ready-to-run N scale cars will have Micro-Trains® trucks and couplers. The Tropicana cars will have an MSRP of \$26.95. Additional details are available from **InterMountain Railway Company** (intermountain-railway.com) which is responsible for marketing Red Caboose brand products.



Walthers (walthers.com) expects to begin delivery later this month on a ProtoN™ EMD GP60 diesel locomotive. The N scale model has a die-cast metal split-frame chassis, all-wheel drive and electrical pickup, and constant/directional headlight. The model operates on standard DC and is DCC-ready with a Walthers Clip-Fit circuit board. The locomotive comes equipped with Micro-Trains™ knuckle couplers. Road names available on the ready-to-run model will be D&RGW, Norfolk Southern, Union Pacific, and BNSF (Santa Fe yellow war bonnet patch-above). An undecorated version is also in the mix. The locomotive (items#920-75400 thru 920-75408) has an MSRP of \$99.98 each.



Also scheduled for arrival from Walthers late this month is a new group of ProtoN™ EMD GP20 diesel locomotives. The electrical and mechanical features of the N scale model are the same as the GP60 (above) with the exception that the GP20 comes with Accumate® knuckle couplers. Road names include CB&Q, Norfolk Southern, Cotton Belt, and the Electro Motive demo scheme shown here. The ready-to-run model (items#920-80051 thru 920-80058) has an MSRP of \$99.98 each.



a center mounted bolster, and Micro-Trains® couplers.

Wheels of Time (wheelsotime.com) is selling an N scale six-wheel heavy-weight drop-equalizer passenger truck with an 11' wheel base at \$12.89 a pair. The model truck features 36" metal wheelsets, adjustable draft gear,

NEW DECALS, SIGNS AND FINISHING PRODUCTS

Microscale Industries (microscale.com) has released eight new decal sets that cover the life of Amtrak locomotives. If this sounds familiar, it's because the decals were announced last summer, but due to a licensing issue Microscale was not permitted to distribute the Anniversary set until now. Set -100 covers Amtrak Phase I (1971-1975) E, F, SDP40F and P42 locomotives. Set -423 is for Amtrak Phase II SDP40F, F40PH, and P42 locomotives. Set -424 is for Amtrak Phase III (1980-1996) F40PH Anniversary locomotives. Set -362 covers Amtrak Phase III (1980-1996) E60CH, FL9, SDP40F, and P42 locomotives. The lettering sets are priced at \$5.75 for N scale (add 60 as a prefix to the part number), and \$7.00 for the HO sets (add 87 as a prefix).

Also available now from Microscale are decals for Santa Fe Super Chief streamline passenger cars, Santa Fe 40' trailers with red and blue lettering, Union Pacific hood diesel with large road numbers on the cab sides, Norfolk & Western white caboose lettering, Illinois Central hood diesels from 1988 forward, VIA Rail Canada passenger cars, VIA Rail Canada passenger car stripes, Pennsylvania Railroad 5-stripe scheme in gold for diesels and cab electrics, Norfolk Southern Dash 8-40C, and Dash 9-44CW diesel locomotives, and Rock Island (CRIP) Rocket pool passenger cars. Coming soon are new decals for Tropicana reefers.

Jerry Glow (home.comcast.net/~jerryglow/decals) has released a new HO scale decal lettering set for an SP 1937 AAR boxcar repaint with "Southern Pacific" spelled out, plus new decals for a Columbia, Newberry & Laurens Railroad 10' 6" IH boxcar. Both sets are \$4.50 each. New decal sets, at \$5.00 each, are available now for wood refrigerator cars Kingan & Company -KRLX 37' car, E. Kahn's Sons Company-EKSX 37' car, and a Kahn's 40' car.

Great Decals (greatdecals.com) has HO decals for an Atlantic Coast Line flat car at \$5.99 each postpaid. The white lettering set provides material for decorating one model with road name, safety stripes, new and built dates, dimensional and capacity data, and side reporting marks.

Mount Vernon Shops (mountvernonshops.com/N34.html) has two decal sets for lettering HO scale Baltimore & Ohio class N34 wagon-top twin-bay covered hopper cars. The "early" set is priced at \$7.00 each and has sufficient material for lettering two pre-1953 era cars. The "late" set is priced at \$9.00 and will letter up to four cars of the post-1953 period. Both decal sets include repack and reweigh data for locations throughout the B&O system. Note that HO scale resin kits for B&O class N34 hopper cars are available from Funaro & Camerlengo (fandckits.com).

DISCLAIMER

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Briefly noted at press time...

Rail Yard Models, an important supplier of prototypically accurate cast resin kits for HO scale rolling stock, has suspended operations effective March 1, 2012. The surprise announcement came from Gene Fusco, founder of the company that in its brief 10-year run had established a reputation as the standard of excellence for post 1960-era cast resin kits.

Fusco said he was burned out from the demands of running the one-man business. In addition to doing all the casting, Fusco created his own masters and designed the various metal components in his kits, many of which were etched by Plano Model Products. Fusco also designed the artwork for the extensive selection of decals used in his kits. Printing was contracted to Rail Graphics. Admitting that he no longer enjoyed the repetitive process of manufacturing, Fusco said he felt it was necessary to stop production rather than allowing the quality of Rail Yard Models to be compromised. Selling the company is a possibility but at this point, Fusco said he has not had time to give it serious consideration.

In a final comment, Fusco said orders already accepted by Pay Pal, and mail orders postmarked on or before February 29th, will be honored. After all orders on hand have been fulfilled, Fusco plans to liquidate any remaining inventory, including decals, on eBay.



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Selected Events

March 2012

CANADA, ALBERTA, CALGARY, March 3, Calgary Prototype Modellers Meet. Clinics on commercial kits including Branchline, Rapido, BGR, Walthers, and Athabasca passenger cars. Also digital photography for modeling purposes, and a look at early CPR passenger cars. St. Andrews Presbyterian Church, 703 Heritage Drive.

CANADA, BRITISH COLUMBIA, BURNABY, March 18, Western Rails 2012. Displays, models, operating layouts, and railroad memorabilia, at Cameron Recreation Center, 9523 Cameron St. Info at wcra.org.

CANADA, ONTARIO, TORONTO, March 17, Annual Toronto Railway Prototype Modellers Meet, with expert clinicians, unique show-and-tell, and open discussion of displayed items. Humber College, North Campus, Building B, Rooms B201& B202. Info from Brian Gauer at bdgauer@rogers.com.

ARIZONA, TUCSON, March 10-11, Great Train Expo, at Pima County Fairgrounds. Info at gtexpo.com.

CALIFORNIA, BAKERSFIELD, March 10-12, Annual Model Train Show sponsored by Golden Empire Historical & Modeling Society. Over 100 dealer tables, operating layouts, and live steam. Kern County Fairgrounds, 1142 South 'P' Street. Info gehams.net.

CALIFORNIA, PERRIS, March 3, Railroadiana & Model Railroad Swap Meet. So Cal's largest swap meet featuring operating prototype equipment at Orange Empire Railway Museum, 2201 S. "A" Street (off Highway 215). Info at oerm.org.

CALIFORNIA, STOCKTON, March 10, Winterail Railroad Photography Exposition & Railroadiana Show, at Scottish Rite Masonic Center. Info at winterail.com.

CONNECTICUT, OLD GREENWICH, March 18, Annual Train Meet, Greenwich Civic Center. Info from Ron Rosenberg at 914-967-7541.

GEORGIA, PORT WENTWORTH (SAVANNAH), March 23-24, Savannah Railroad Prototype Modelers Meet. Clinicians include Rick Bell, Denis Blake, Parker Clemmons, Jim King, Ed Mims, and Dave Orr. Event at Port Wentworth Recreation Center, 101 Turnberry Street. Gather at Holiday Inn Express. Call 912-964-9800 and use code SSP for reservations and discount rate.

IDAHO, LEWISTON, March 25, Lewis-Clark Railroad & Collectables Swap Meet, featuring 100 plus vendors, model and toy train collectables, operating layouts, and a special clinic by Disney designer Robert Olsewski. Nez Perce County Fairgrounds. Info from Mike McGee at 208-816-6072.

ILLINOIS, LOMBARD, March 16-18, Chicago O Scale Meet, with layout tours, clinics, model contests, and vendor tables. West Lombard Yorktown Center. Info at marchmeet.net.

ILLINOIS, SPRINGFIELD, March 8-10, Railsplitter 2012, NMRA, Midwest Region, Illinois Valley Division annual convention. Abraham Lincoln Hotel. Info at railsplitter2012.org.

KANSAS, WICHITA, March 24-25, Great Train Expo, Century II Center, 225 West Douglas Avenue. Info at gtexpo.com.

MAINE, GRAY, March 31. Fifth Annual Narrow Gauge Show, sponsored by Maine Narrow Gauge Modelers. Featuring Sn2 and On30 modular layouts, contests, and clinics. Speakers include Alan Carroll, Richard Fall, Greg Ouellette, and Elliott Thomas. Gray-New Gloucester High School. Info at mngm.org/page5.php.

MASSACHUSETTS, TAUNTON, March 10, NMRA NER Spring Training Model Railroad Clinics & Train Show. Special presentation by John Pryke. Holiday Inn. Info at hubdiv.org.

MICHIGAN, FARMINGTON HILLS, March 18, TrainOrama Extra 2012. Flea market for train buffs and modelers, sponsored by the Redford Model Railroad Club. Costick Community Center. Info from Pierre Willerment at 734-953-2546.

MICHIGAN, TAYLOR, March 11, NRHS and Society of N-Scalers Railroad Memorabilia & Model Train Show at Taylor Town Trade Centre. Info at societyofn-scalers.com/trainshow/vendorform.pdf.

NEW YORK, BATAVIA, March 25, Great Batavia Train Show hosted by Genesee Society of Model Engineers at Batavia Downs Casino. Info at gsme.org.

NORTH CAROLINA, Winston Salem, March 31-April 1, Great Train Expo at Dixie Classic Fair. Info at gtexpo.com.

OHIO, CINCINNATI, March 10-11, World's Greatest Hobby on Tour, Duke Energy Center. Info at wghshow.com.

OHIO, COLUMBUS, March 18-19, Great Train Expo at Ohio Expo Center. Info at trainexpoinc.com.

OHIO, KIRTLAND, March 17-18, Railfest 2012, NMRA MCR Division 5 Meet. Operating layouts, historical displays, live steam display, dealer tables. Lakeland Community College. Info at railfest.org/NMRA/trainshow/index.php.

OKLAHOMA, TULSA, March 23-25, NMRA Indian Nations Division 3rd Annual Tulsa Area Layout Design & Operations Weekend. Speakers include Steve Davis, Tom Fausser, Dick Hovey, John McBee, Lance Mindheim, Dave Salamon, and Jim Senese. Shriner's Temple at 28th & Sheridan. Info at groups.yahoo.com/group/ldsig/message/84640.

OREGON, BEAVERTON, March 31, A gathering of N scale modelers from the Pacific Northwest. N-trak modular layout, swap meet, and clinics. 10am to 4pm at Valley Catholic High School (west of Murray Blvd. between TV Highway and Farmington Rd.). Info at meetmarch.org.

OREGON, ELSIE, March 3, Annual Pacific Model Loggers' Congress, Camp 18 Logging Museum & Restaurant, 42362 Hwy 26. Information, including new rules for special awards sponsored by Woodland Scenic, available at pacific-modelloggerscongress.com.

OREGON, PORTLAND, March 10, Train Swap Meet sponsored by Willamette Model Railroad Club. Over 110 tables of model railroad equipment in all scales, railroad memorabilia, books, photos, and more. Kleiver Memorial Armory, 10000 NE 33rd Dr. Free Parking. Additional details from Steve Cook at wmrswapmeet@yahoo.com.

PENNSYLVANIA, MALVERN, March 23-25, RPM-Valley Forge Meet, sponsored by NMRA MER, Philadelphia Division. Model displays, vendor tables, tours, and operating session on Sunday. Clinicians include Keith Albright, Keith DeVault, Ralph DiBlasi, Bruce Elliott, Nick Fry, Jim Harr, Dave Hopson, Larry Kline, Vince Lee, George Losse, Rich Newmiller, Ed Olzewski, and John Teichmoeller. Desmond Great Valley Hotel & Conference Center. Info at phillynmra.org/RPMMeet.

April 2012

CANADA, ALBERTA, CALGARY, April 21-22, Annual Supertrain Show, with over 60,000 sq ft of operating layouts, exhibits, railroad art, dealer tables, manufacturers displays, and clinics. Special Lego and Thomas play area. Subway Soccer Centre, 7000 48th Street SE. Info at supertrain.ca.

CANADA, BRITISH COLUMBIA, QUESNEL, April 6-8, NMRA PNR Division Spring Meet with operating layouts, vendor tables, contests, AP judging, clinics, and layout tours. Quesnel Curling Club, 550 Quesnel Avenue. Info at goldpanexpress.info.

CANADA, ONTARIO, SUDBURY, April 27-29, NMRA Niagara Frontier Region Annual Convention with clinics, contests, and layout tours. Howard Johnson Hotel, 50 Bradey Street. Info at sudburymodelrailroading.com.

ARIZONA, WINSLOW, April 17-27, Winslow Railroad Days and Arizona State Centennial. Prototype displays and operating layouts. Hubble Trading Post, 523 W 2nd Street. Info at tucsonontrak.com/ASWMRR/ASWMRR_Winslow_Page.html.

CALIFORNIA, SAN DIEGO, April 2-6, Model Railroad Spring Camp, a week of constructing a model railroad exhibit, creating scenery, buildings, and freight cars for grades 3 through 8. Includes weathering, electric wiring, trackwork, and a behind the scenes tour of the famous San Diego Model Railroad Museum. Also field trips to the SD Trolley Yard and Santa Fe Depot. Details at sdmrm.org or call Olga Cortes at 619-696-0199.

ILLINOIS, WATSEKA, April 21, 30th Anniversary Meet of Chicago & Eastern Illinois Historical Society. Includes memorabilia, visit to the Rossville Depot, and special model railroad presentation based on the C&EI. Watseka Union Station. Details from David Forbes at altamontc_ei@yahoo.com.

INDIANA, ELKHART, April 13-14, Michiana Model Railroad Symposium, sponsored by NMRA Michiana Division, featuring Friday night banquet, clinics, layout tours, and railfanning, at National New York Central Railroad Museum. Info at michiana-nmra.org.

INDIANA, MARTINSVILLE, April 14, Train Show & Swap Meet, hosted by NMRA Central Indiana Division. Dealer tables, operating layouts, clinics, model judging including popular vote contest. Martinsville National Guard Armory, 1900 Hospital Drive. Details at cid.railfan.net.

OHIO, MARION, April 13-14, Central Ohio RPM, with model displays, clinics, and discussions with like-minded modelers, hosted by Denis Blake. Marion Union Station.

OREGON, EUGENE, April 21-22, 24th Annual Swap Meet & Train Show, sponsored by Willamette Cascade Model Railroad Club. Events Center at Lane County Fairgrounds, 796 West 13th Avenue, Eugene. Info from Lee Temple ttandt@ram-mail.com or phone 541-954-4917.

PENNSYLVANIA, MONACA, April 1, Beaver County Spring Model Train Show. At Center Stage, 1495 Old Brodhead Road. Info at bcmrr.railfan.net.

WASHINGTON, OLYMPIA, April 14, Ninth Annual Olympia Layout Tour. Details from Scott Buckley at sbuckley54@comcast.net.

Future 2012

AUSTRALIA, NEW SOUTH WALES, ALBURY, May 26-27, Murray Railway Modellers Annual Show, featuring N, HO, and O scale layouts, model displays, vendor tables, and Thomas the Tank Engine. Mirambeena Community Centre, Lavington. Info at murrayrailwaymodellervers.com, or contact John Harvey at mrmshow@gmail.com.

CANADA, BRITISH COLUMBIA, SQUAMISH, July 13-15, Pacific Great Eastern Railway 100th Anniversary Convention, sponsored by PGE-BCR Modellers Group. Clinics, operating layouts, displays, model contest, prototype displays, and rides on 7.5" gauge Mini Rail. CN Roundhouse & Conference Centre, West Coast Railway Heritage Park, 39645 Government Road. Info including registration fees and options available from Brian Clogg at bcclogg@shaw.ca or phone 604-588-2194.

CANADA, ONTARIO, OTTAWA, May 5-6, Ottawa Train Expo, featuring layouts, models, displays, clinics, demonstrations, and tours. Billed as the largest train show in Eastern Canada. Carleton University Fieldhouse. Info at ottawatrain-expo.wordpress.com.

CANADA, SASKATCHEWAN, REGINA, June 28 - July 1, Living Skies Express, a joint CARM National/PNR 6th Division Convention, at University of Regina Campus. Info from Tyler Smith at smithtyler@sasktel.net.

CALIFORNIA, RICHMOND, June 23, Bay Area Prototype Meet, St. David's School Hall, 871 Sonoma Street.

COLORADO, DENVER, May 4-5, National Z Scale Convention, with clinics, contests, and tours of Colorado Railroad Museum and Caboose Hobbies. Red Lion Hotel Denver Southeast, 3200 S. Parker Road. Info at nzsc.org.

CONN, COLLINSVILLE, June 1-2, New England/Northeast RPM, Canton Community Center, 40 Dyer Avenue. Info at neprototypemeet.com.

ILLINOIS, COLLINSVILLE (St Louis area), July 27-28, 6th Annual St Louis RPM Meet, hosted by Lonnie Bathurst, John Golden, and Daniel Kohlberg, with clinics, local and national vendor displays and sales tables, representatives from

railroad historical societies, Freemo display, and more. Gateway Convention Center, One Gateway Drive. Info available from John Golden at Golden1014@yahoo.com or Dan Kohlberg at paducah@mindspring.com.

KANSAS, MERRIAM (Shawnee area) June 25, 9th Annual Narrow Gauge Meet, sponsored by Kansas City Area Narrow Gaugers. Includes clinics by Dennis Brandt and Miles Hale MMR, plus tours to the HO_{n3} layouts of John Vandenberg (D&RGW) and Doug Taylor (East Broad Top). Johnson County Library, Antioch Branch, 8700 Shawnee Mission Parkway. Advance registration required by June 20, 2011. Inquiries to Larry Alfred at captlalfred@gmail.com.

MICHIGAN, GRAND RAPIDS, July 29-August 4, NMRA National Convention and National Train Show. Info at gr2012.org.

NORTH CAROLINA, BREVARD, October 12-13, Narrow Trak 12. Details pending.

OHIO, CLEVELAND, October 11-14, iHobby Expo, annual hobby industry trade show, IX Center.

OHIO, HILLIARD, May 18-20, 4th Annual Ohio N-scale Weekend, hosted by Central Ohio N-Trak. Franklin County Fairgrounds. Info at centralohiontrak.org.

OREGON, MEDFORD, May 2-5, Joint Medford Oregon-Siskiyou Summit PCR/PNR Convention, with clinics, contests, LdSig and OpSig meetings, layout and prototype tours, plus special Train Mountain outing. Red Lion Hotel. Details at pcrnmra.org/conv2012.

OREGON, MEDFORD, June 27-July 1, 20th Annual National N Scale Convention, with auctions, more than 100 tables of N scale items, clinics, model contests, operating layouts, and home layout tours. Also tours of Micro-Trains plant, Medford Railroad Park, and live steam at Train Mountain. Red Lion Hotel. Info from Dick Ollendorf at 610-923-7535 (evenings, Eastern time) or visit national-scaleconvention.com.

PENNSYLVANIA, LANCASTER, October 11-13, Fine Scale Model Railroader Expo, includes activities at the Strasburg Railroad and The Pennsylvania Railroad Museum. Lancaster Host Hotel & Conference Center, Strasburg. Info at model-railroadexpo.com.

PENNSYLVANIA, LEESPORT, August 10-12, Greater Reading Narrow Gauge Meet. With operating displays, dealers, clinics, and demonstrations. Leesport Farmers Market Banquet Hall, Arlington Drive. Info at nateslightironhobbies.com/narrowgaugemeet.htm.

SOUTH CAROLINA, MYRTLE BEACH, October 13-14, Grand Strand Model Railroaders 3rd Annual Model Train Show, at Lakewood Conference Center, 5837 S. Kings Hwy. Info at isfans.com/gsmrrc.

WASHINGTON, BELLEVUE, September 12-15, 32nd National Narrow Gauge Convention. Meydenbauer Convention Center. For hotel info visit seattle2012.com.

Future 2013

AUSTRALIA, MELBOURNE, April 12-14, 2013, 13th National Australian N Scale Convention, Rydges Bell City Event Centre, Preston, Melbourne. Info at convention2013.nscale.org.au or send email to nscale2013@bigpond.com.

CALIFORNIA, PASADENA, August 28-31, 2013, 33rd National Narrow Gauge Convention. Hilton Hotel, 199 S. Los Robles St. Info at 33rdnngc.com.

MINNESOTA, BLOOMINGTON, April 25-28, 2013, 28th Annual Sn3 Symposium. Ramada Mall of America Hotel. Info at Sn3-2013.com.

NEW MEXICO, ALBUQUERQUE, June 6-9, 2013, Rails Along the Rio Grande, NMRA Rocky Mountain Region, Rio Grande Division 6, convention with clinics, layout tours, train show, OpSig sessions, UPRR and BNSF modelers showcase night, and banquet. Marriott Pyramid North. Info from Al Hovey at alhovey@comcast.net. ■

Remember when?



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REVERSE RUNNING: Ready-to-run actually increases kitbashing/scratchbuilding

Stepping outside the box with a contrary view



Let's start with model railroading in HO. Yes, there's a lot of great products available today.

Let's further say you model the Southern Pacific like I do. It's a big road that's popular with modelers.

Yes, I can build a large basement lay-

out and model the SP in Oregon during the 1980s. Yes, there's a lot of stuff I can buy, and I do purchase it when I can.

But come on, I'm modeling the SP in Oregon during the 1980s! Almost none of the structures or bridges I need to model are available commercially. Caboose are hard to find as ready-to-run. I can't find TEBU slug units as ready-to-run models.

So what happens?

Because I can buy enough ready-to-run to get a good start on an equipment roster for modeling the SP, I go ahead and do a large layout featuring the SP in Oregon.

Now what?

I need to kitbash and scratchbuild a ton of bridges, structures, cabooses,

and TEBU's to at least somewhat accurately duplicate what I saw on the prototype from this period.

A big one for me in the rolling stock category are the SP water cars the prototype ran over the major grades on the SP in Oregon.

By the order of the US Forest Service since the 1960s, all locos going over a grade needed to have a "live" water car behind them dousing the track with water.

You can't buy proper water cars for the SP as ready-to-run. So this set me on a research expedition to find out all I could about these water cars and how to make models of them for my layout.

Along the way, I discovered Bob Zenk's fabulous SP water car scratchbuilding article published by *Mainline Modeler* in 1982.

Providence kindly saw that I got a chance to personally see and photograph this *actual car* recently (that's the photo on this reverse running), thanks to the kindness of the current car owner, Heather Clark. And I even got to run this car on my Siskiyou Line! (Hope to do an updated article on building one of these puppies.)

You can imagine now how pumped I am about kitbashing some tank cars to be more accurate models of SP water cars.

Do you see what has happened? Because I could *buy* all this ready-to-run SP equipment, I now need to *build* six of these water cars (count 'em, *six*) to run on my layout during op sessions.

Would I be wanting to build *six* of these cars if I didn't have a layout made possible by all the ready-to-run stuff I can get for the SP?

Not at all. Like I said, ready-to-run is actually increasing the need to kitbash and scratchbuild if you're building a layout like me.

And as you get outside HO scale, the need to kitbash and scratchbuild increases significantly because there's a lot less variety available in the other scales like N and On30. These other scales may also be popular, but the variety of ready-to-run is more limited than in HO. It's the ready-to-run that *is* available that allows modelers to seriously consider doing a layout.

So enough of this talk about ready-to-run killing the need for craftsmanship in the hobby. For serious modelers, I just don't see it!



— by Joe Fugate

We've all heard it before – ready-to-run is killing the hobby. Scratchbuilding is a dying art: now the size of your model railroading empire is governed by the fatness of your pocketbook, not by your ability as a skilled modeler.

Perhaps this is true in a few cases, but also look at famous modelers like Rod Stewart, who have all the financial resources they need to do the hobby. What does Rod do when he's on the road? He's kitbashing and scratchbuilding, that's what!

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For the love of model trains



Coming in the Apr 2012 issue

- Mike Confalone's Modeling a realist paper mill scene
- Tom Patterson builds a diesel storage tank
- Jack Burgess on prototype modeling from photos
- Tree modeling basics – trees from sagebrush

... and lots more!

**Derailments, humor,
and Dashboard on
next page ►**

Derailments

humor (allegedly)



– Scott Sackett cartoon

Getting Steamed ...

Q: Why are drivers found under the boiler instead of in the cab with the throttle in their hand on a steam locomotive?

Q: Why aren't there any gears in the valve gear of a steam locomotive?

Q: What kind of compound is used for the seals of a cross compound air compressor on a steam locomotive?

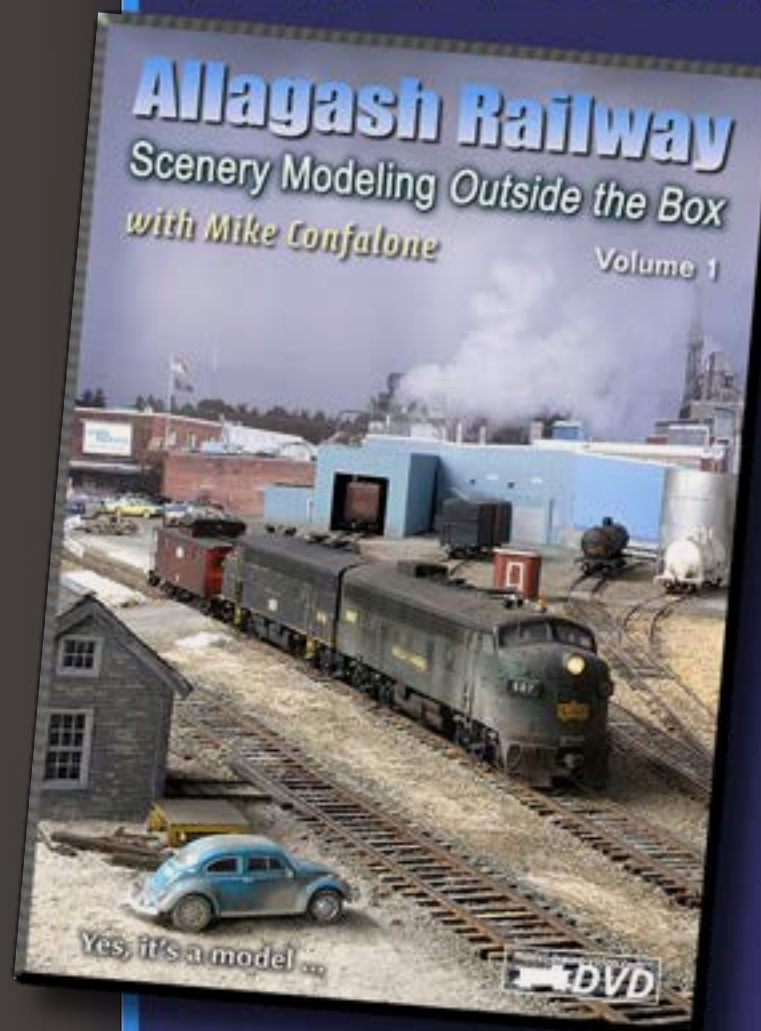
If you're the first to [submit a bit of good humor](#) and we use it, it's worth \$10!



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