Windows & doors • $500 layout • Optical detector

Model Railroad Hobbyist magazine™

May 2014

Price: *Forever Free*

HAVING FUN WITH TRAINS

Tom Johnson's ...

Logansport & Indiana Northern

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Model Railroad Hobbyist magazine™

Issue 51

Front Cover: L&IN 2072 is dropping off hoppers for the Lucerne Elevator. It's harvest season and the elevators will be operating extended hours to meet the demands of the local farmers.

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Published for the glory of God. What's this?

Issue password: May2014

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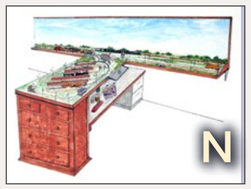

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Advertisement

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How local is your hobby shop?

Further, yet closer than you think

Reader Feedback (click here)

Assistant Editor's thoughts

by Don Hanley

Is losing local hobby shops something we should be concerned about? There is an active thread on the MRH forum (mrhmag.com/node/17553) that talks about the loss of the local hobby shop (LHS).

Since many readers don't follow the MRH forum threads, I will use my editorial pulpit to share my thoughts on the subject.

My city lost its shop a few years back. There are other hobby stores in the area, but none deal primarily with model railroad products. So I had to learn how to purchase my supplies online.

In reading the different posts on this MRH website thread, I think the biggest true loss is the camaraderie many felt from hanging out at the LHS. I too miss catching up with shop staff and with other modelers and their hobby pursuits. There are benefits in interacting with other people in-the-flesh, especially when they share the same passion for a hobby.

Some firmly believe the Internet is solely responsible for the demise of the LHS, while others like ordering online. While the Internet has and still is changing the retail shopping playing field, it doesn't explain all the reasons for the loss of the LHS.

What has happened to the LHS has happened to many mom and pop operations across the country. Some blame big box stores like Walmart, Home Depot or others for the loss of local businesses. Yes, the larger companies have economies of scale on their side as far as pricing, but that's not the only reason they succeed and many of smaller operations fail. There's something more.

The LHS faces several major problems. One is their limited market. Their market for the most part is people who are willing to drive 30-40 minutes (or more) to get there. For modelers and hobby shops in a large metropolitan area there's a larger pool of hobbyists to draw from. If you're a hobby shop in a small town, then it gets tougher.

The big box stores get around the limited market problem by having more stores across many cities. That requires having access to lots of capital, which most LHS owners don't have. While most big box stores have tight margins, they make up for

it with large volumes. The LHS has the problem of tight margins too, but with the added problem of low volume.

There's a term in economics I came across recently: *creative destruction*. In other words, you slowly destroy the old ways of doing things while a new product or process takes its place.

In the thread about LHS closures, those posting gave several examples of stores that have a good Internet presence. What did these owners do? They had enough insight to see where the market was going and got in early enough to establish a presence. In business, victory often goes to the swift and nimble, not necessarily to just the largest.

Those small retailers who did not embrace or grasp the changes in shopping patterns brought on by the internet are now either out of business or slowly going out of business. Those who did get in early with an Internet presence opened their market beyond their local area to literally the entire world.

With modern shipping through UPS, FedEx and others, products can be shipped around the world. Does this mean everyone who opens an online hobby store will succeed? No. Those who do succeed will be the ones who can accurately deliver the products ordered in a timely manner, at a competitive cost, and with excellent customer service.

I believe that customer service is the key. As big as Amazon is, Jeff Bezos is keen on great service for the customer.

What defines excellent online customer service? Beyond browsing through an Internet site, I think someday soon we will be able to order our hobby supplies online via video phone calls such as Skype. We will be able to talk to hobby shop staff in locations far away from where we are sitting. They can show us the product, as well as prepare the order for us as they

move about the store. We will most likely pay a little more for such personal service, but I believe this is going to happen.

So is the demise of the LHS actually good in some ways? In the long run, I say yes for niche hobbies like model railroading.

By increasing its reach, the savvy LHS will have a much better chance of staying in business and providing the goods and services we want for our hobby. What we as hobbyists need to do is to step out of our comfort zone and learn to plan for our modeling needs enough to have the product arrive when we need it.

The LHS is becoming a click away, more local than ever! ☑

Reader Feedback
(click here)

Notes from the MRH Staff

Getting the next generation into the hobby, modeling form or function, MRH's first 50 issues, and more ...

Reader Feedback (click here)

Getting the next generation into the hobby

All we have to do is watch the discussions on the MRH website and we get plenty of ideas for editorial commentary. One of the more frequent concerns being posted is how are we going to get more new blood into the hobby if hobby shops are closing in record numbers?

Forum member Ray Dunakin posted these concerns:

"I really worry about how modeling hobbies of any type will survive when the hobby magazines and hobby shops are gone. Sure, those who are already in the hobby can find everything online. But it will be much harder to bring in 'new blood' when there is nothing to attract the uninitiated to the hobby. How many people in the past got into a hobby because they saw a magazine on a news rack, and picked it up out of curiosity? Or walked into a hobby shop and saw something that caught their interest?"

Ray, take heart. The hobby is certainly changing, but there's plenty of indication that it's far from dying out for the next generation. If we look at MRH, we find that one of the largest sources of new readers is Facebook. Currently, Facebook has

Apr 2014 MRH Ratings

The five top-rated articles in the April 2014 issue of MRH are:

- **4.6** DCC Impulses: Signalling your DCC pike
- **4.6** Bear Creek & South Jackson 10th anniversary
- **4.6** What's Neat: Jeff and Ken collaborate
- **4.5** Batch-building freight cars 101, part 2
- **4.5** Yes it's a model

- Issue overall: **4.3**

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

1.2 billion subscribers, which is equivalent to the population of India, the world's second largest nation. Expectations are that Facebook will exceed the population of the world's largest nation, China, by sometime next year.

In today's changing world, Marketing 101 says you go where the people are going if you want to reach them, and like it or not, that's the Internet and places like Facebook and YouTube.

YouTube has 1 billion visitors every month! Just doing a quick survey of YouTube reveals:

- 4.3 million videos categorized as trains
- 2.1 million videos categorized as airplanes
- 1.9 million videos categorized as ships
- 267,000 videos categorized as model trains
- 181,000 videos categorized as model airplanes
- 134,000 videos categorized as model ships
- 136,000 videos categorized as slot cars
- 50,000 videos categorized as model spaceship
- 92,000 videos categorized as military models
- 50,000 videos categorized as coin collecting
- 12,000 videos categorized as stamp collecting

The point is, for the next generation to find the hobby we need to go where they're going - which is places like Facebook and YouTube. Even for the hobby shops that are still open, you're not finding them being overrun with teenagers. Those young, impressionable teens are on Facebook and YouTube.

If you look at the YouTube video counts for trains and model trains, they're not doing too bad!

On Facebook, we analyzed the people who said they liked trains in their profile, across all English-speaking countries, and we got over 500,000 people. In the U.S., 83% of 18 to 29-year-olds who use the Internet are on Facebook, so if reaching the next generation is a priority for the model railroading hobby, then Facebook is it.

Also, if we check Google Trends (Google's stats on what people are searching for on the Internet) we find that the searches for Lego trains, Thomas trains, and Polar Express trains have increased notably in the last few years.

But are youngsters coming into the hobby of model railroading who played with these toys when they were little?

One example is a young 15 year old girl who was interviewed recently on Scotty Mason's model railroading podcast. She's very much into model railroading and is especially interested in craftsman structures. Craftsman structures are some seriously

detailed structures, in case you didn't know. And how did this young lady get her start in trains when she was little? Thomas.

MRH Publisher Joe Fugate's grandson, Bobby, is now 12 and crazy about model trains. Bobby first got introduced to trains as a toddler when he was given a Thomas the Tank stuffed toy, and he refused to part with it.

Bobby also loved Brio trains and has been a real fan of the Polar Express movie. Today at age 12, Bobby has an NCE Powercab, some DCC locomotives and a loop of track in his room, and is learning how to program decoders.

So take heart. Few of the youngsters coming into the hobby today were introduced to it via the hobby shop or a paper magazine. These days, it's Lego trains, Thomas, and Polar Express. At the national train shows, booths with Lego trains, Thomas, or Polar Express get routinely mobbed by families with children.

The public's fascination with trains is still very much alive and given that the Millenials generation (those born since 1980) is now larger than the Baby Boomers, there's every indication the families of Millenials are turning to train toys and train movies as prime entertainment for their children.

One final note, on TrainMasters TV in April is a video about the Rensselaer Polytechnic Institute club layout, the New England, Berkshire & Western. Veteran member John Nehrich shares how this club has almost 30 student members (and almost the same number of non-student members). Most of the student members come from the 20-something age group.

MRH's web presence continues to experience double-digit growth as well. Even though the local hobby shop (LHS) seems to be an endangered species, it's also not how the next generation is finding the hobby. There's every indication the new web-centric sources are doing a good job of picking up the slack from the disappearing LHS for the next generation.

Modeling form or function?

There are different ways to enjoy the hobby of model railroading, for sure. If you look at what gets you the most excited about the hobby, is it building the models, or is it running the trains?

For those who like running trains, do you consider yourself a railfan, or an engineer? If you say engineer, then that generally means you prefer to model the operational aspects of running trains more than watching the trains roll by.

One way we find that's helpful when making this distinction is to talk about being a model railroader, or being a railroad modeler.

If you're more of a model railroader, then that means it's the modeling part that you find to be the most satisfying. You may also enjoy railfanning, but you're generally more interested in "standing trackside" watching your models roll by than you are in trying to operate realistically.

But if you're more of a railroad modeler, then that means you like simulating real railroad operation, because you see yourself sitting in the cab.

When you're new in the hobby, it helps to figure out early on which of these two you are, because that will help you know how to approach the hobby in the most satisfying way.

How do you find out if you're more interested in the form (modeling) or in the function (operating)?

The best way is to give serious prototype operations a try on some layouts. There's no better way to find out something than getting some experience.

We recommend you try operating on several different layouts before you make up your mind. The intensity of operation varies from one end of the spectrum to the other.

A few layouts are super-serious, to the point that you better follow the rules or (generally in jest) face the consequences. A few other layouts are really laid back, focusing more on the fun and fellowship overlaid with just enough prototype rules to give a "railroady feel" to the session.

Most layout op sessions are somewhere in the middle. Go check out operations to see if you're more of a model railroader or a railroad modeler.

What's up with the Siskiyou Line?

Recently some folks have been asking Joe Fugate about what's going on with his Siskiyou Line, and whether or not any updates are coming, if Joe's planning any new videos, and so on.

Joe was hosting monthly operating sessions on the Siskiyou Line until MRH went monthly in 2011, at which point the commitments of a monthly magazine overshadowed hosting monthly op sessions on Joe's layout.

But, take heart. MRH is getting to the point that Joe can offload some of his weekly commitments and start getting more free time to work on the layout. With the NMRA National coming to Portland in 2015, that's a good thing because Joe wants to have the layout open for visits, as well as host some operating sessions on his layout.

As Joe starts to work again on his Siskiyou Line layout, he will begin producing some more articles for MRH on his layout, as well as writing some eBooks and doing some new DVDs and videos for TrainMasters TV.

In fact, just like the "Allagash Bash" that we've been doing for the first six months of 2014, Joe's thinking of doing a Siskiyou Line blowout after the 2015 convention, most likely the first six months of 2016.

But in the meantime, Joe's planning to provide more Siskiyou Line updates here on MRH in his blog, outlining the work he's doing to the layout as he gets ready for the 2015 convention.

Among other things, Joe is planning to start having op sessions again in 2015 to shake down the layout and get it ready for hosting op sessions as part of the 2015 NMRA National Convention in Portland, Oregon.

So, if you've ever dreamed of getting to operate on some Portland area layouts like Joe Fugate's Siskiyou Line or Charlie Comstock's Bear Creek & South Jackson, consider coming to Portland in August of 2015.

MRH's first 50 issues

As of the April 2014 issue of the magazine (last issue), MRH has now published 50 ezine issues!

That's well over 5000 pages of model railroading how-to information, all for free. We know of no other model railroading publisher who can make that claim. If you'd like to get all 5000 pages (all 50 issues) without having to spend days downloading it all, we're offering all 50 issues on a data DVD for $10 (plus shipping & handling). Included in the package is a coupon good for $20 off on TrainMasters TV, so you're money ahead.

To order this data DVD, just go here:
model-trains-video.com/MRH-2014.php

TMTV this summer

This summer, we have some very cool videos coming to TrainMasters TV. If you're not yet a subscriber, you might want to keep your eye on the notices of TMTV videos coming out, and if you see something that you'd like to see, consider signing up.

If you're an MRH subscriber, you can get 20% off on the one-year and two-year TMTV subscriptions by going to the latest issue's bonus downloads page.

Also, while we're talking about TrainMasters TV, if you're attending the NMRA Convention in Cleveland this summer, we're putting on a clinic:

Introducing TrainMasters TV Wed, July 16, 8:30 - 9:30 pm

Come and learn about the new internet TV channel for model railroaders! Meet the TMTV team, see samples of the network-tv quality programming, and request programming you would like to see! TMTV is provided by Model Railroad Hobbyist magazine.

Maybe we'll see some of you there? Make sure to say hello!

This issue

The number one MRH blog is this month's cover story, Tom Johnson's Logansport and Indiana Northern. Assistant Editor Don

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Hanley had the privilege of spending an afternoon interviewing Tom. While many have followed along on Tom's blog, Don got to ask some of the questions we'd all like to ask him if we could. Also you don't want to miss the debut of major changes Tom is making.

Also this month we have "All those windows and doors" by the late Richard Napper. Richard shows how he simplified the construction of doors and windows by using jigs. We received this article from Richard shortly before he passed.

Ever wonder how to locate your train in a hidden staging yard or hidden track? Terry Terrance shares how to build an optical detector so you know where your trains are.

We're publishing the first of the $500 layout winners this month with grand prize winner Tyrone Johnsen's Illinois Railway Museum. We found his submission to be a unique concept allowing the modeler have nice display for an eclectic collection of rolling stock and motive power as well as something that could grow into part of a larger layout.

Dirk Reynolds has both a one-evening project on improving passenger car couplers and a special sidebar on building a levee bridge in Ken Patterson's column.

Speaking of Ken Patterson, he did our First Look this month with War World's static grass as a video. What better way to show a scenery product than to have its application demonstrated? You can also keep up to date with the latest offerings from manufacturers with the May news.

In our regular columns, Assistant Editor Don Hanley discusses the loss of the local hobby shop. In the popular DCC Impulses,

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Bruce Petrarca discusses using the DCC programming track.

In Getting Real, Nick Muff is back to laying track after a year's hiatus finishing up his Union Station area. Ken Patterson and Dirk Reynolds (as we mentioned) share great photos in What's Neat. And of course, we have our staff's pick of fun photos in Yes, it's a model.

Finally Joe has some contrary thoughts about the devil's advocate in Reverse Running, and bringing up the rear is Derailments, our attempt at humor and some bizarre facts.

Have a great read as you go through May's MRH! ☑

Reader Feedback (click here)

QUESTIONS AND ANSWERS

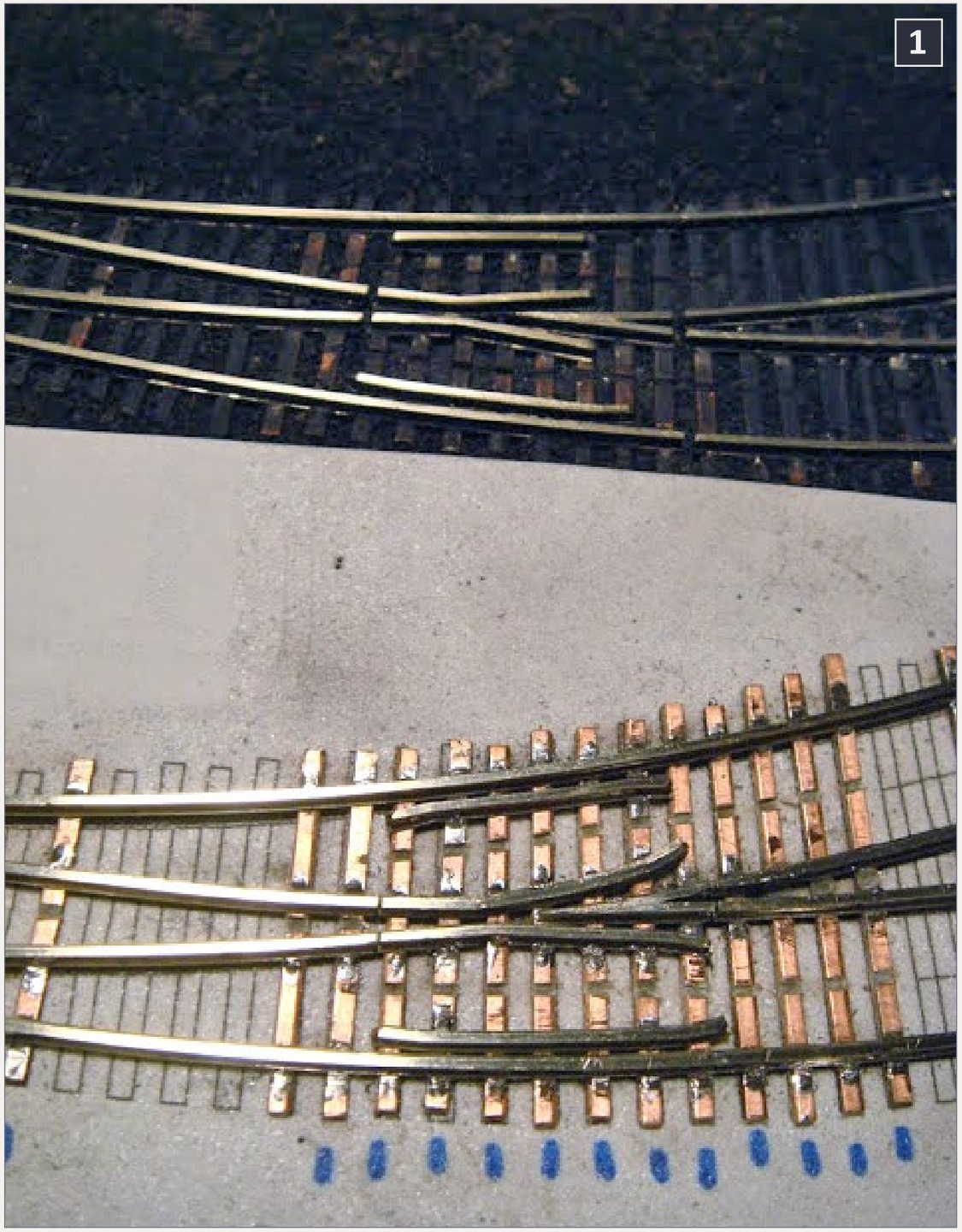
Cutting gaps

Q. **To cut gaps around frogs, Fast Tracks suggests using a small coping saw, and an MRH article shows a motor tool with cut-off disc, but the gap is large so must be filled with plastic. Anyone have a suggestion on something in-between? Something that makes a big enough gap, but does not need to be filled with a chunk of plastic?**

A. Two questions here: How do you cut gaps, and how do you guarantee that they remain gaps?

M.C. Fujiwara likes Dedeco A/0 thin discs (dedeco.com/product/807/AO-THIN-DISCSbr-78-X-009-Br-100BX/5183/), that are .009" thick and do a great job. Most razor saws will also cut a thin gap.

The photo [1] compares gaps made with Dremel's "Ultra Thin" cut-off disc (top) with the Dedeco .009" thin (bottom).



1. Isolating rail gaps at the top were cut with Dremel's "Ultra-Thin" cut-off disc in a motor tool; gaps at the bottom were made using .009" thick Dedeco discs. M.C. Fujiwara.

Electrically, the size of the gap isn't important as long as current can't cross the gap. In terms of looks and operation, a large air gap is unsightly and can cause tracking problems.

Once you are skilled with the cut-off disk, you can cut the gap with a series of light passes which will not melt the plastic ties of commercial turnouts. Melting lets the tiny molded spike heads lose their grip, which will eventually lead to problems. An alternative is to make the frog and closure rails as separate items, then fix them down with as close a gap as you wish, but this requires care and precision in alignment.

While it seems like a gap would stay in place after it is cut, that is not always the case. Flex track can expand and contract inside its plastic base. Copper cladding or solder joints on PC ties can let go. Humidity and temperature changes can cause benchwork to move.

Filling the gap avoids exposed rail ends which may provoke wheels to "pick the edge" and climb up and over the railhead. Filling the gap immediately and completely eliminates the possibility of the joint creeping or closing up, which can cause possibly the most infuriating impossible-to-diagnose "but the layout worked perfectly yesterday" short circuit.

Gaps can be filled with bits of cardboard (think recipe file cards), styrene, or any of several liquids. Once the gap-filler is slid into place, glue it with CA and trim the filler to fit.

Liquid gap fillers:

Bruce Petrarca likes Faller Expert cement, available from Walthers, which is methyl chloride with styrene in the mix. Squirt a bit of it into the crack with the included needle nose, reapply if needed, and lightly sand to shape with 600-grit sandpaper or a fine emery board.

An alternative is squirting a bit of white glue or gap-filling CA into the gap. It does not have to fill the gap to the top to prevent the rail from moving into contact with the frog. If the rail needs to be readjusted, white glue can be softened with water and dug out.

Track gaps: mrhmag.com/node/7995.

– MRH

Mixing Kadee coupler heads

Q. Is there an issue in mixing "scale" HO Kadee couplers like the #58 with the standard size #5 and variations? The thought is to put the small heads on locomotives and cabooses, and use my large stock of #5 couplers on general rolling stock. The small heads look nicer in photos (except for the giant coil spring) but the rolling stock is meant for an operating railroad.

A. Rob Spangler and Jeff Shultz use a mixture of Kadee types on their railroads and report no problems with the #58-size head [2] and other sizes coupling and uncoupling reliably. Neither uses magnetic uncouplers.

But Norm Beveridge has seen serious issues. "I have seen no end of

2. Kadee now offers its smaller-head couplers in bulk packs of 25 pairs. They are available in three shaft lengths, and with two spring configurations. The couplers are also available with special coupler boxes.

trouble on several layouts," said Norm. " . . . I can tell you this – the Midsouth Model RR Club in Baton Rouge tried to switch over, and they found that the scale couplers gave problems even when mating with each other, and even worse when mating to #5s. Ultimately, they pulled all the scale couplers and went back to #5s."

One issue is the reduced height of the scale coupler versus the old standard #5, and changes in track gradient [3a-3b]. "I had a rather abrupt angle 'going up' when I had some different sizes, and things drifted apart," said Steve in Iowa City. "A slow speed-up in that area revealed the smaller head lost grip, literally coming up and off the other. It was a Kadee PS-1 boxcar with scale, smaller-head couplers and a larger Kadee #5 (I think). A slight adjustment to my riser under that area of track fixed it, but beware. I needed a more graceful and gradual transition from one grade to another, and it actually looks and runs all cars better, so it was a hidden blessing."

WSOR Engineer Mike set up a Kadee coupler-height gauge with a #58 and makes sure the mounted scale coupler lines up exactly with the gauge. "The smaller head leaves no room for error," Mike explained. "On the equipment I primarily use on my table at home with 18" radius turns, I generally stick with a #5 on everything. The greater gathering range helps out on the tight turns. The table is flat, so no issues with vertical separations."

Santa Fe Willie reports no problem once cars are coupled together, and no problems uncoupling using either a skewer or a Rix magnetic uncoupler. But he does experience problems coupling up, even on straight level track. "I have to occasionally use the skewer to open the jaws of the scale coupler, or make two or three attempts," Willie reports.

Russ Bellinis's experience is "the track work has to be perfect to use them. If you have any dips and bumps in your track work, you will experience nuisance uncoupling. The track work and coupler heights must be good with #148s (#5-size with an integral spring),

3a-3b. From above, note the narrower face and smaller knuckle opening of the #158 coupler compared to a #5. Centering is much more critical with close-to-scale size couplers. From the side, see the difference in knuckle height of the two styles. Bumps in track can make couplers separate unless both are installed at the exact correct vertical height. Note the offset in the centered horizontal mold line in the two couplers.

but #158s are even more critical. My plan is to use Sergents on my home switching layout, but I would not consider them or the #158 for use on the modular club layout setups. The dips and bumps that seem to be standard with modular layouts that are set up and taken down repeatedly seem to invite nuisance-uncoupling without adding to the problem with small coupler heads."

Mixing Kadees: mrhmag.com/node/16830.

Signals

Q. What's the difference between an absolute block system and a permissive block system? I've been trying to read up on signals, but can't find the answer.

A. An absolute block system allows only one train in a block at a time. A permissive block system allows more than one train in a block at a time. Using rules and signals, a permissive system allows one train to follow another in the same block.

Just to throw in another confusing term, a common system in use in the U.S. today is absolute permissive block, which provides full signal protection for opposing trains in addition to the protection for following trains that an automatic block system gives. (Most single track ABS systems provide some protection against opposing trains but the protection is not complete, and a track occupation authority system like timetable & train order or track warrant control is needed.)

Here's good web page that tells the basics of railroad signals: alkrug.vcn.com/rrfacts/signals/signals.htm.

Jay S. Bogguss wrote a series of five articles that started in the November 1991 *Model Railroader* that will tell you about everything you need to know about absolute permissive block signaling. Bill Reid, Rich Pistello and Rich Weyand did similar articles for *Mainline Modeler* late in 1994. Back issues should be available. Andy Sperandeo frequently writes about signals in his "The Operators" column that appears on the final page of each month's *MR*.

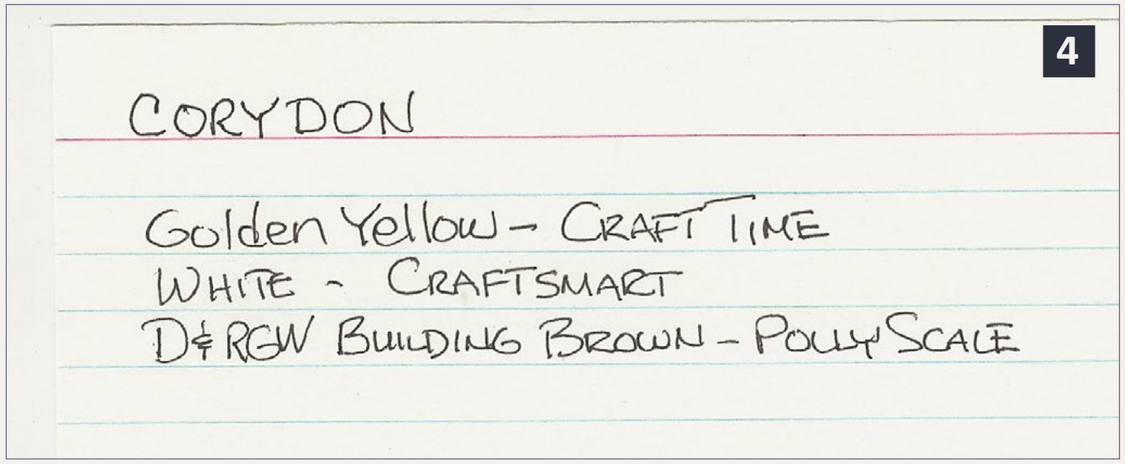
Simmons-Boardman publishes "Railroad Operation and Railway Signaling" by Edmund J. Phillips Jr. It's available from: transalert.com/bookstore/Rail/Signal___Communications/ and: arizonahobbies.com/Railroad-Operations-and-Railway-Signaling-p/sbbkrors.htm.

TIPS

Taking notes

When starting a kit that will need to be painted, put a 3 x 5 file card [4, next page] in the box to note the name, number, and/or manufacturer of the various colors used. A couple seconds of note-taking will save a lot of time if the project gets shelved for whatever reason. When I started on a wood kit that I had not worked on for quite a while, the card was in the box and I was touching up in a couple of minutes. (The same trick works with paint colors and detail part numbers for car and locomotive projects.)

– Terry Roberts



4. Notes on a file card save a lot of confusion when restarting work on a model that has been put aside for a while. Terry Roberts.

Level app for cell phones

Next time you need a small level, look to your cell phone, specifically an iPhone 5 with the iOS software. Believe it or not, the software has a function for the phone to act as a level.

To find this gem, hit the Utilities button, then hit the Compass function. Allow time for the compass to calibrate. Once the compass is working, slide the screen to the left and you have discovered the digital level! The phone can be a bubble level if the device is laid flat on a surface. If the phone is set on a surface using the long or short edge, the screen will reveal a gradient in percent.

This is not an app to download, but it's a function already on the iPhone 5 with iOS 7 software. Using your phone as a level can be handy in benchwork construction, superelevating track, or determining gradient on the right of way.

For other phones, search for the iHandy app. It has similar functions that can be installed on iPhone or Android devices.

– Eric Hansmann

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DCC Programming Track Tips

DCC tips, tricks, and techniques

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DCC Impulses column

by Bruce Petrarca

Photos and illustrations by author

Some thoughts on programming and tracks ...

In prior columns, I've talked around programming tracks. I decided it was time to go straight ahead and talk about them. Part of this was prompted by a recent discussion on an email group about programming track isolation and other issues. While a lot of this material has been mentioned before in passing, the focus of this column is to bring all the data into one place. Repetition reminds us of things we may have forgotten. I'll bet that there will be at least one tidbit here for every DCC user who reads this missive.

What is programming?

While there are many things on a DCC layout that can be customized, most frequently, when one is programming, one is setting up the personality of a locomotive by adjusting CV values stored in the decoder. That is the definition of programming that I'm addressing in this column.

A tale of two worlds

At this juncture, I'm reminded of the joke about people: "There are two kinds of people in this world, those who divide the world into two sections and those who don't."

There are two ways of programming and two kinds of programming track and two ways of programming on-the-main. And just to make things interesting, different manufacturers use different names for the same thing.

One way: on a programming track

Sometimes referred to as service mode programming, programming on the programming track is where you can write to and read from your decoder on a dedicated track.

The command station function of your DCC system (see my column "Anatomy of a DCC System" MRH May 2012) is responsible for controlling the programming track: the command station turns on and off the power to it, monitors the current flow into it, sends commands to it, and receives acknowledgements (ACK pulses) back from it. ACKs are the decoder's way of talking to the command station.

1. The programming track station and selector switch at the PebbleCreek Model Railroad Club.

The programming track must be isolated from the remainder of the layout in order for the ACKs to be heard by the command station. The electronics that drives the programming track is not protected against current flowing from the track back into the command station. This back flow would happen if the programming track were to be connected to the layout DCC signal. The programming track must never be connected, even one rail at a time, to the layout track or bus.

Never is never; not for even a fraction of a second. You may get away with a "5-second" rule when you drop your sandwich, but not here.

There are multiple modes or languages that may be utilized in this dialog between the command station and the decoder. Here are some of the modes, with the abbreviation shown on Digitrax' DT4xx series throttles:

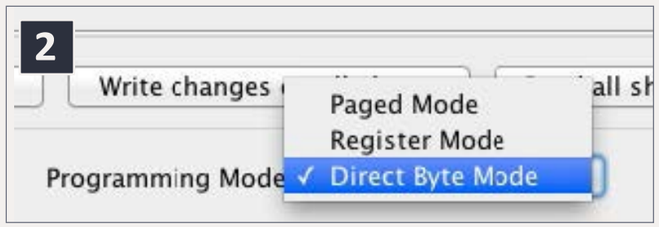
- Address Mode is an early programming method in the NMRA standards. It is outdated and modern decoders have no reason to go there.
- Register Mode (Ph in Digitrax parlance) grew out of Address Mode. It is a very limited way to access a few CVs. It is mostly extinct, too. A few older and low end decoders need to be accessed this way.
- Paged Mode (Pg in Digitrax parlance) grew out of Register Mode. It allows access to virtually all CVs. Of the two modern programming modes, Paged Mode is significantly slower than Direct Mode. Per their web site (digitrax.com/programming-mobile-decoder-addresses/), Paged Mode is "Digitrax Preferred Programming Mode".

- Direct Mode (Pd in Digitrax parlance) has been around for many years now and is measurably faster than any of the older methods. Most modern decoders support it and some respond only to it. While there are two variations of direct mode, the differences are transparent to the DCC user.

So, if you are looking for a common language between your command station and your decoder, start with Direct Mode. If that doesn't fly, move up the list until you find one that does, understanding that Address Mode may not be available on modern command stations.

DecoderPro uses its knowledge of your DCC system and the selected decoder to automatically select the best programming mode for the combination.

If you are programming a sound decoder or a decoder with large amounts of energy storage, such as a TCS Keep-Alive™, you may need a Programming Track Booster between your command station and your programming track.



2. DecoderPro offers you the choice of programming modes that are compatible with your DCC system and the decoder in question.

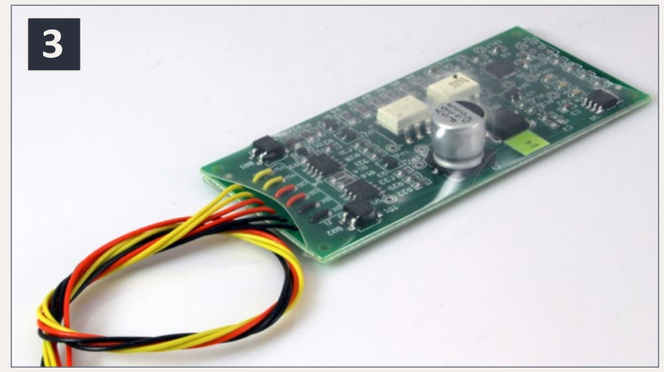
Programming track boosters

I discuss these guys on my web site (mrhmag.com/mrdccu-ptb). But I want to make a couple of observations here.

PTBs are another misnomer, as they don't really boost anything. They translate from one language to another.

PTBs should not be confused with DCC boosters, despite the similar name. They are very different animals.

As sound decoders developed, more on-board energy storage was required. This added storage would overwhelm the original (NMRA compliant) command stations. The decoder and command station would not communicate. The NMRA standards were changed after 2005 to reflect the new designs and more recent command stations work just fine. However, there are a lot of systems out there that were designed before the change.



3. SoundTraxx PTB-100 Programming Track Booster.

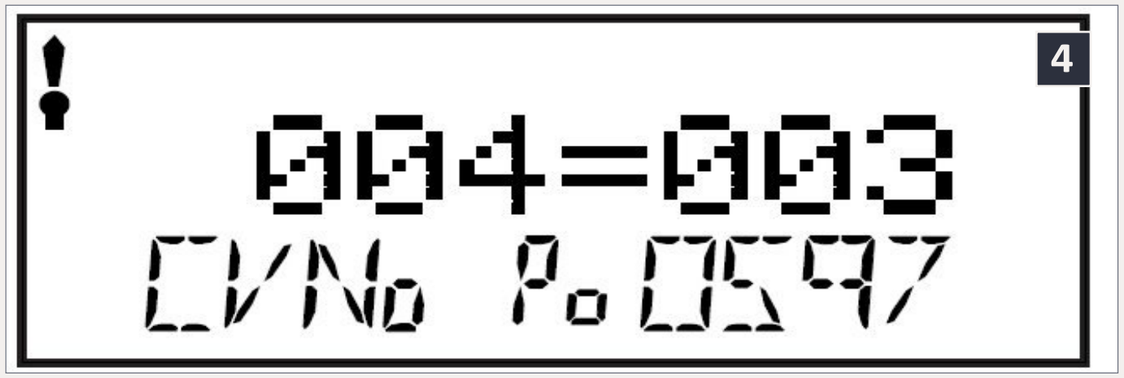
PTBs are the translators that allow easy communication between older command stations and all decoders. They in essence interpret the current flow through the newer decoders and tell the older command station what is really happening, based on the new NMRA standard.

With my spotty Spanish, I can order a beer and find the restrooms in Mexico. But I cannot communicate easily with native speakers. Similarly, there are "fixes" for sound decoder programming problems recommended on the web. They include adding light bulbs or resistors to the programming track. They are patches. They may or may not work with a specific command station and a specific decoder.

There is nothing about a PTB that prevents it from being used with any decoder of any vintage. So, I recommend, if you are working with decoders that your command station isn't understanding, buy a PTB for about $60 and install it between your command station and your programming track and leave it. The SoundTraxx PTB-100 gets the most consistent "thumbs-up" from users. Or, get a newer system; like a PowerCab or a V3.6 Lenz system.

The other way: on the main

Sometimes referred to as Ops-Mode Programming (Po in Digitrax parlance) or sometimes abbreviated POM, Programming on the Main allows you to write CVs to locomotives as they are operating on the layout. During a recent op session, I was doing a switching job on our club layout (PCMRC.org) and the loco I was using ran a bit faster than I wanted at full throttle. So, I went over to our computer (running JMRI) and opened the file for the culprit. A quick change of the forward and reverse trim settings and I was back operating with a slower loco. I stored the new setting in the decoder on the loco and in the computer as a back up.



4. Drawing of a DT400 series throttle set for Ops Mode programming. What is shown is programming loco number 597, CV 4 (deceleration) to a value of 3 in Ops Mode (Po). Note that the display is showing you that it is in Ops Mode and what loco it is talking to.

I love POM. Yup. No question. As I said in my column about A Dozen DCC Myths (MRH March 2014), there is nothing intrinsically dangerous about POM.

Several folks got on the MRH forum connected with that March column and disagreed. Check it out for more details. However, they failed to show that POM was dangerous. What they did show is that ANY programming possibility in the hands of someone who isn't fully cognizant of their actions can cause problems. There is a solution: don't let guest operators (including club members) use throttles that have any possibility of programming things on the layout via any mode.

There are, as I said above, two methods of POM. What I'll call traditional and Blast Mode.

Let's look at traditional first. When you enter this mode, the command station asks you what loco to program. That's a strong clue you're entering POM mode. You need to verify or correct-and-verify that address. Once you get past that gate, nothing you do will impact any other loco on the layout. With this method, you can run the loco and tweak to your heart's content, that's why I love it.

A similar method is Blast Mode programming. This came into vogue as part of the Digitrax Zephyr system as a work-around for programming sound decoders without a PTB. If you choose to use this method, follow the directions on the Digitrax web site (digitrax.com/programming-soundtraxx-tsunami) very carefully. Failure to do so may result in messed up loco programming.

5: Digitrax Zephyr – the system that put Blast Mode programming on the map. Photo courtesy Digitrax.

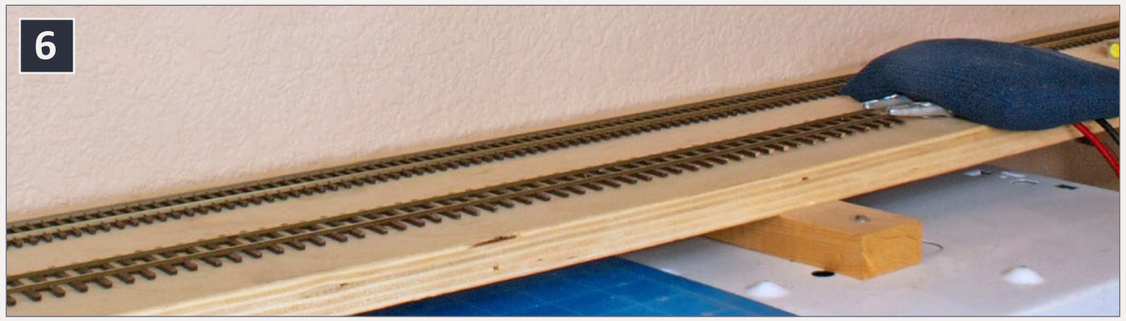
Because of this danger and the intrinsic inability to read what you've written, I recommend against Blast Mode programming. Get a PTB instead.

Two types of programming track

Okay, this may be a bit of a stretch, but there really are two types: one on the layout and the other on a workbench. There are special precautions necessary with the layout version to assure isolation from the DCC track in all circumstances.

Programming track on the workbench

I have a track on a shelf above my workbench and use a NCE PowerCab to run it. The PowerCab has enough oomph to run most of the locos I work on, even some G scale models. It doesn't need a PTB to talk to any decoder I've ever put on it. It reads out the amount of DCC current being consumed on the test track. With a NCE USB adapter, it allows me to run DecoderPro. I know of many dyed-in-the-wool Digitrax users who have a similar setup on their workbench.



6. My shelf test/programming track.

This is one place where the PowerCab's shifting from DCC track to programming track and back is invaluable. No switches to throw or think about. Let's show how this works with a real-life example.

Real-life example

When I install a decoder (or do significant rework on an installed decoder) my first place to go is the programming track. Why? Because the current available is limited to a few thousandths of an amp, as opposed to the many amps or many tens of amps available on the DCC track. If I can write to and read from a decoder on the current limited programming track, there is a 90+% chance that I've wired the motor and track portion of the decoder correctly. If I've wired it wrong, I probably won't have damaged the decoder due to the current-limited on the programming track.

So here's how I finish an installation. My goal is to put the loco on a current limited track and test it before I take it to the high power DCC track.

- I set the PowerCab into programming track mode (press PGM and then 4), which will start it reading the manufacturer's ID. I don't worry about what number comes up, as it will most likely be wrong. Why? Because I can't put the loco on the track until the PowerCab starts to read the manufacture's ID. Since the decoder gets connected somewhere in the middle of the read process, it won't necessarily return the correct value.

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- The loco goes onto the track during the read process. Yes, it is in the middle of a read, but that way I know that the full DCC power is off the track.
- When the PowerCab finishes its read, I press ENTER which moves it into reading the decoder type. Since the loco is on the track for this entire sequence, the number returned should be accurate. I check for a good read back of the decoder type number. For example, “64” if I’m working on a SoundTraxx Tsunami.
- I then follow through the sequence to read the short address (default 3 for new decoders), write a new short address (frequently the right two cab digits), and read and write a long address.
- If all of these reads and writes give the expected results (the addresses I asked to write read back okay), then I move to programming the decoder. Otherwise, I check my decoder wiring for opens, shorts, bad motor and such.
- Reopening the file in DecoderPro, I walk through the Programming a New Loco sequence in the programming track mode. Then I do a READ ALL SHEETS, so that DecoderPro has exactly the

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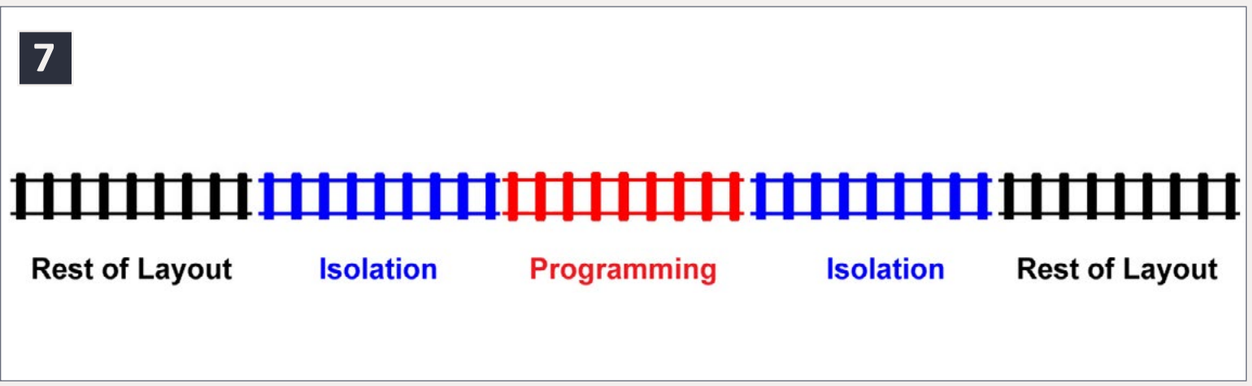
same data in it as the locomotive. Saving this file makes sure that the computer retains the same data.

- Finally, I go to POM mode (with the PowerCab, it is as simple as changing modes in DecoderPro and opening the saved file). This allows me to fiddle with speeds, sounds, momentum, and all. As long as I do all the adjustments in DecoderPro, the copy I save onto the computer represents what is actually in the loco.

Programming track on the layout

Lots of folks say that they want to be able to read from their decoders without having to remove the loco from the layout. To do so, you need a place on the layout where you can run a loco into a track that can be isolated from the rest of the layout and connected to the command station programming track output. This is a great place to insert a PTB between your command station and the programming track itself. The programming track needs to be longer than your longest locomotive, so that all of it is on the track. Given that locos can move when the ACK current pulses through the motor, the longer the better. The isolation section(s) need to be longer than your loco, too. When the programming track is active, the isolation sections need to be dead--nothing connected to them.



7. Programming track surrounded by isolation tracks with connections to the layout on both sides.

That way, if a loco runs off the end of the programming track, it will be contained within the isolation track and not bridge to the DCC track. This prevents DCC power from being fed back into your programming track output or your PTB and damaging them. See [7].

If your programming track is in the middle of a run, you'll want isolation sections on both sides of it. If it is at the end of a run, you only need an isolation section on one side.

What makes for a good programming track on the layout? I like:

- Convenient location where a loco can be put on / taken off easily
- Able to be electrically isolated from the rest of the layout
- Close to the main track or the center of the action

The switch that selects the program or run mode needs to have four poles, be double throw and handle the DCC current with a break-before-make design. A center-off style switch automatically is a break-before-make style. Check out your local auto parts store for these. It may be difficult (and pricey) to locate with an appropriate (5 - 10 amp) rating.

For a method of achieving this isolation with readily available parts, see the Mr. DCC's Workbench after this column.

Now, if you have read the entire column, tell me that you didn't learn one thing, no matter what level of DCC expertise you have. I know I learned a few new things researching the column. If you found this column helpful, please click on the Reader Feedback link here and rate it awesome. Please join in the conversation that invariably develops there.

Reader Feedback (click here)

Check back next month. Until then, I wish you green boards. ☑

From Mr. DCC's workbench

Isolating the programming track on your layout

Recently, I've found an easy way to switch the isolation and programming tracks and get a readout of what you are doing. I show the schematic diagram for those who relate to those things. I didn't show the programing track booster (PTB) or the wall-wart to power the relay in the schematic. There is a block diagram later for those of you who don't relate to schematics.

Parts List

QTY	ITEM	DIGIKEY PART NUMBER
1	Relay - 4PDT with 12 volt coil	HJ4--DC12V
1	Miniature SPST switch	M2011SS1W01/UC
1	Rectifier	1N4001--G
2	Resistor 1 K ⅛ watt or larger	CF18JT1K00
1	LED red	C503B--RAS--CY0B0AA1
1	LED green	WP710A10GD

This parts list is not extensive, as it doesn't include the PTB or the wall-wart power supply. I included Digi-Key part numbers, but most, if not all can be purchased from surplus stores, like All Electronics. The relay listed has 5 amp contacts. Larger systems will need a bigger relay 10 - amps.

When the switch is open, the power is not applied to the relay and the DCC power is applied to all the tracks and the green LED is lit. Closing the switch applies the DC power to the relay and it breaks contact with the DCC signal before it makes contact with the programming track signal, whether directly from the command station or through a PTB. The red LED will receive power when the relay does, so it will light. The 1N4001 diode

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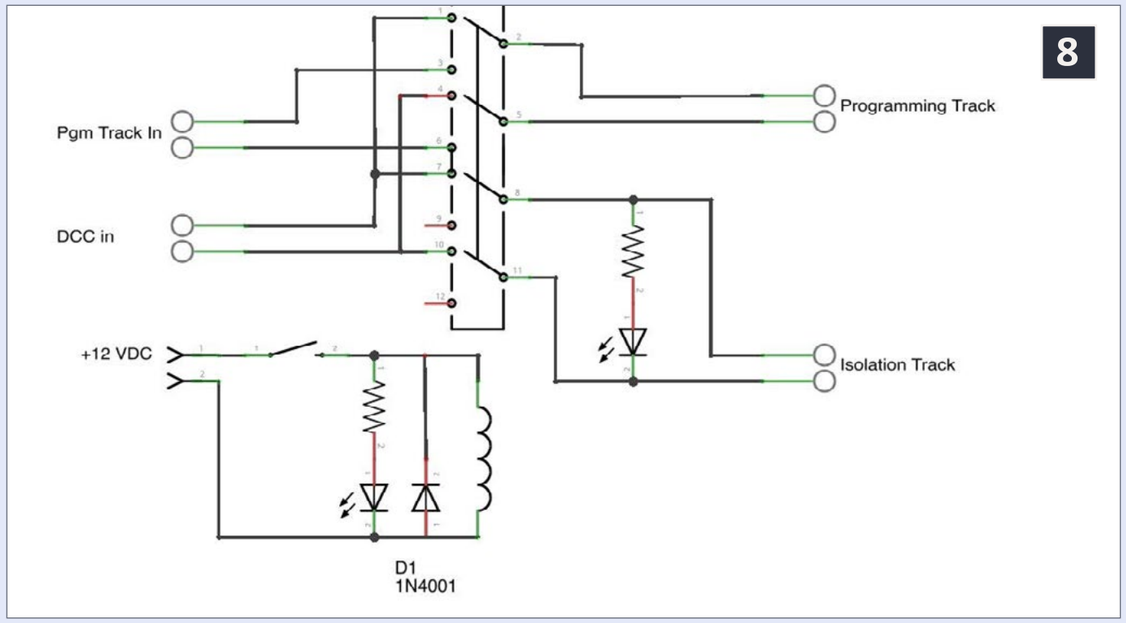
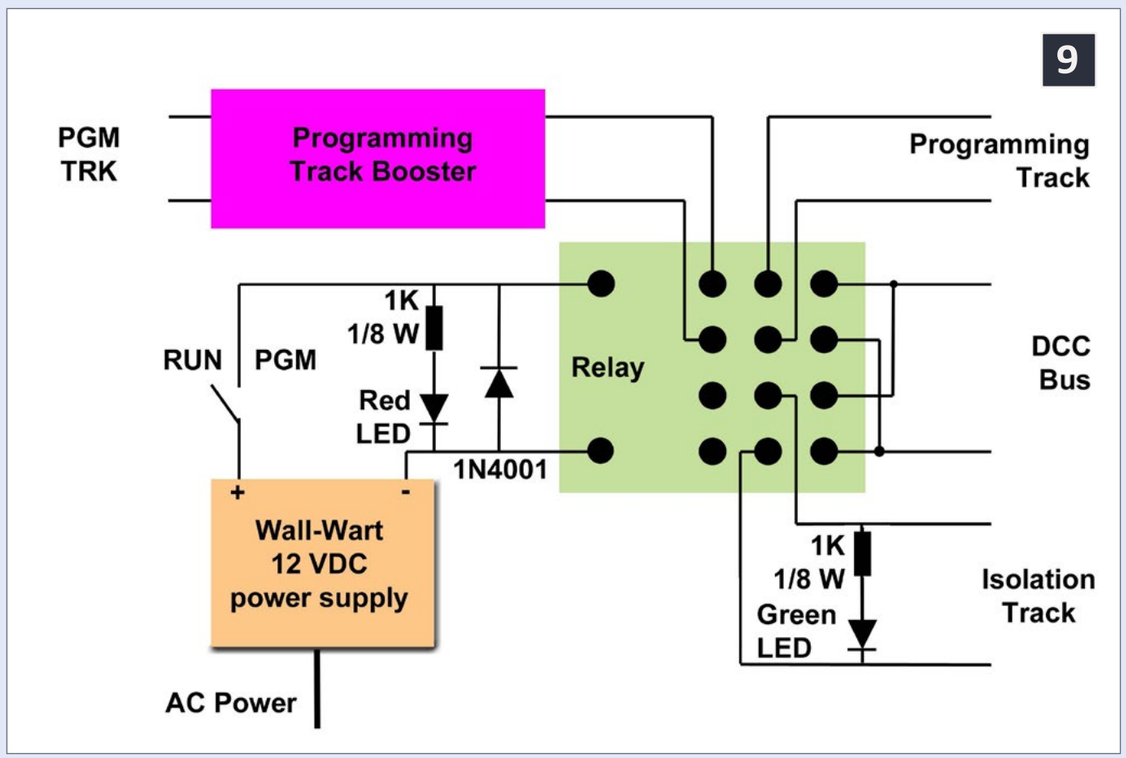


8. Schematic diagram of programming track switch relay circuit.



9. Block diagram of the circuit shown in [8]. A power supply and PTB are shown, too.

← back to previous page of text ... is necessary to keep voltage spikes from the relay releasing from damaging the power supply. The exact value is not critical: 1 amp minimum at 50 PIV minimum. The LEDs and their attached resistors are optional.

Here's a block diagram [9] for those of you who don't relate to schematics. The PGM TRK input in the upper left connects to the command station programming track output. The two track outputs on the right go to the respective tracks and the DCC bus connects where shown on the right. If you have 12 VDC on your layout, that can be used in lieu of the wall-wart. The relay selected will require less than 100 mA to activate, so virtually any 12 VDC wall-wart will suffice. Not shown in this diagram is the power to the PTB. Follow the manufacturer's recommendations. ■

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Laying track again on the Kansas City Terminal Railway

Modeling real railroads and what they do

Reader Feedback (click here)

Getting Real column

*by **Nick Muff**, **MD***

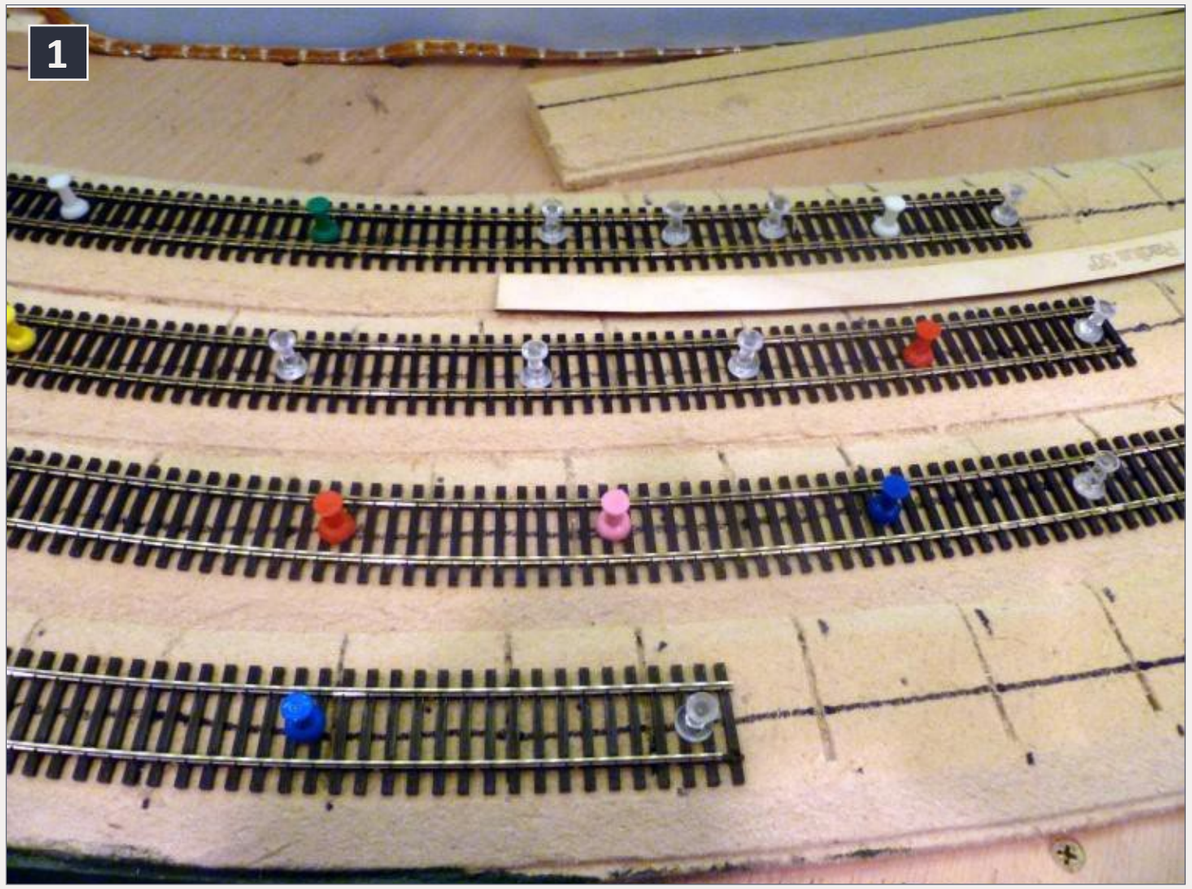
Now it's time to get serious about actually laying track ...

After a long hiatus from track laying (January 2013), I am back at it. Just to get everyone back up to speed, I spent a lot of time finishing up the Union Station scene, I added sound (June 2013), night time animation (August 2013), and a 1950s auto carrier (February 2014) to complete the scene. Now it's time to get serious about laying track and getting the expansion operational.

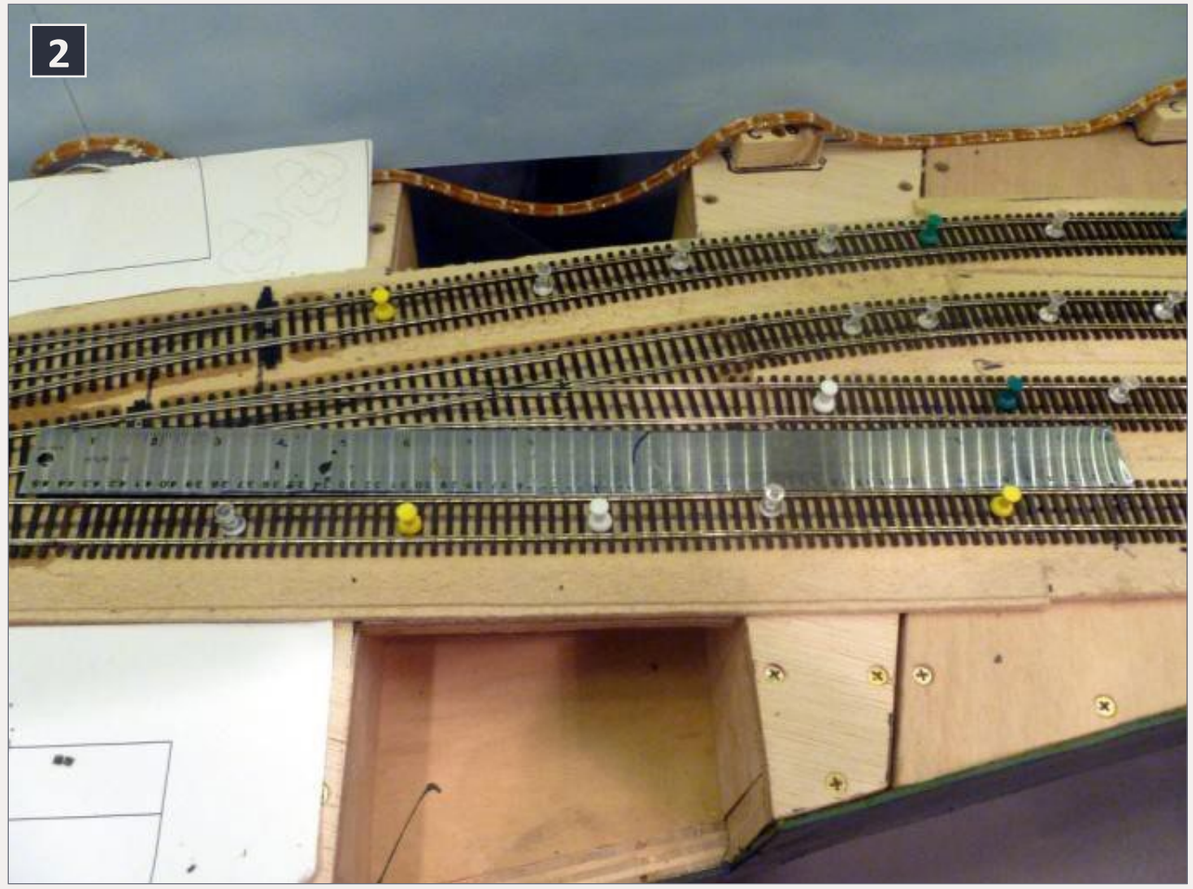
For the mainline addition to the layout, I used Micro Engineering Code 83 nickel silver flex track. The detail is very good, with a tie plate under every tie and four to eight scale-size spikes per tie. Visitors have often asked me if I considered hand-laying the track. I ask them if they know a way to hand-lay track with fish plates and scale-size spikes on every tie! I have hand-laid track in the past. Even the smallest spikes available are way oversize, and ruin the appearance in photos. At that, I was laying four spikes every fifth tie. I can't beat the Micro Engineering product for speed of construction and realistic appearance.

An exception to this was a package of Peco flex track I purchased from my local hobby shop. The Micro-Engineering track is held quite firmly by the ties, which makes bending smooth curves a challenge. On the contrary, the Peco track flexes very easily. The spikes are a little on the large side, and only four per tie, but ease of handling makes the difference. I used the Peco track to lay the four parallel curved tracks in the Deremus yard.

In the past, I laid the track using spikes about 2” apart, as needed to hold the track in alignment. Unfortunately, (or fortunately!), the Celotex sub-roadbed does not hold the tiny spikes nearly as well as Homasote. That led me to find a better and faster way to hold the track in alignment. I laid the track over the marked centerline and held it in place with pushpins [1].



1. Track held in position with pushpins.



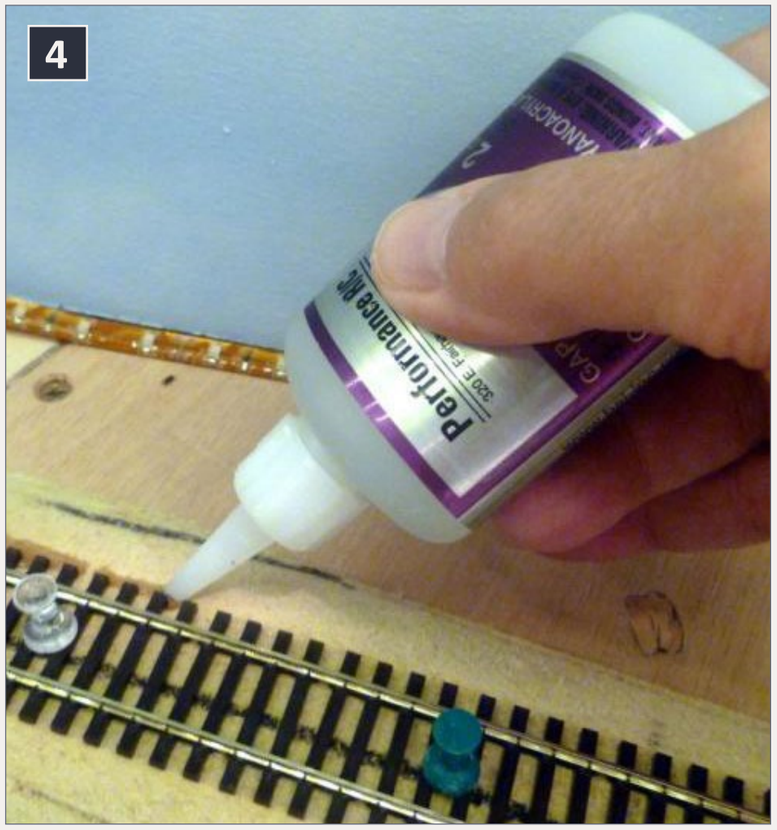
2. A straightedge is used to align straight track.

In addition to being faster and less tedious, it is easy to make lateral adjustments. For straight track, I used a long straightedge to align the track. For curves, I used 1/16” wooden templates cut to match the radii that I was using. This helped ensure there were no inadvertent kinks, and that the curves were laid smoothly [2].

Once the track was properly aligned, I needed to fix it in position so it could not be easily bumped out of alignment. On a previous layout, the track was held in place by the ballast and diluted white glue. As it turns out, this does not adhere very well to the Delrin ties, and the track can be easily popped loose, as I discovered on dismantling that layout. So for this

layout, I fixed the track in place by using gap-filling cyanoacrylate. I ran a bead of ACC along each edge of the ties. When the glue has set, the pushpins can be removed. A word of caution – as the glue cures, a white haze can form on anything near the track, so keep the area around the track clear for 24 hours [3-4].

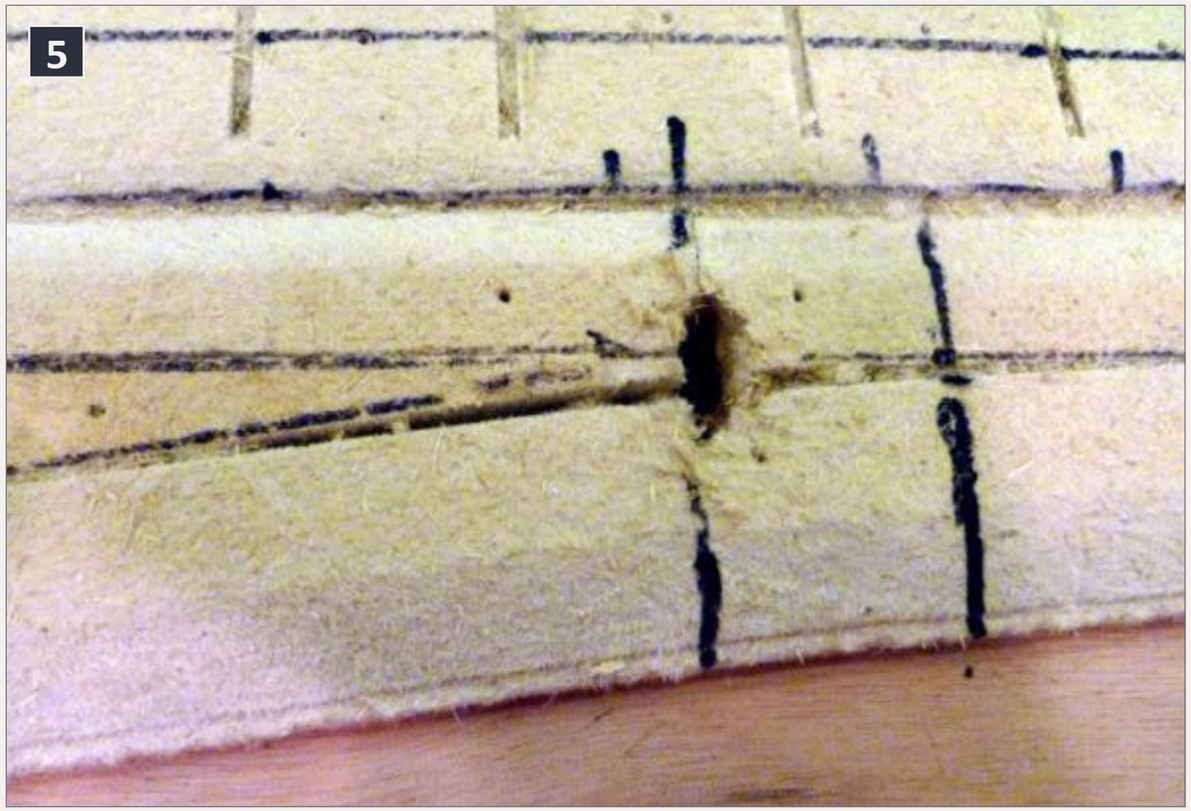
For the turnouts, it's necessary to accurately locate the position of the throwbar to drill a hole through the layout for the actuating wire from a Tortoise switch machine. Once the position was marked, I drilled an elongated hole, moving the drill from side to side with a sharp ¼" bit.



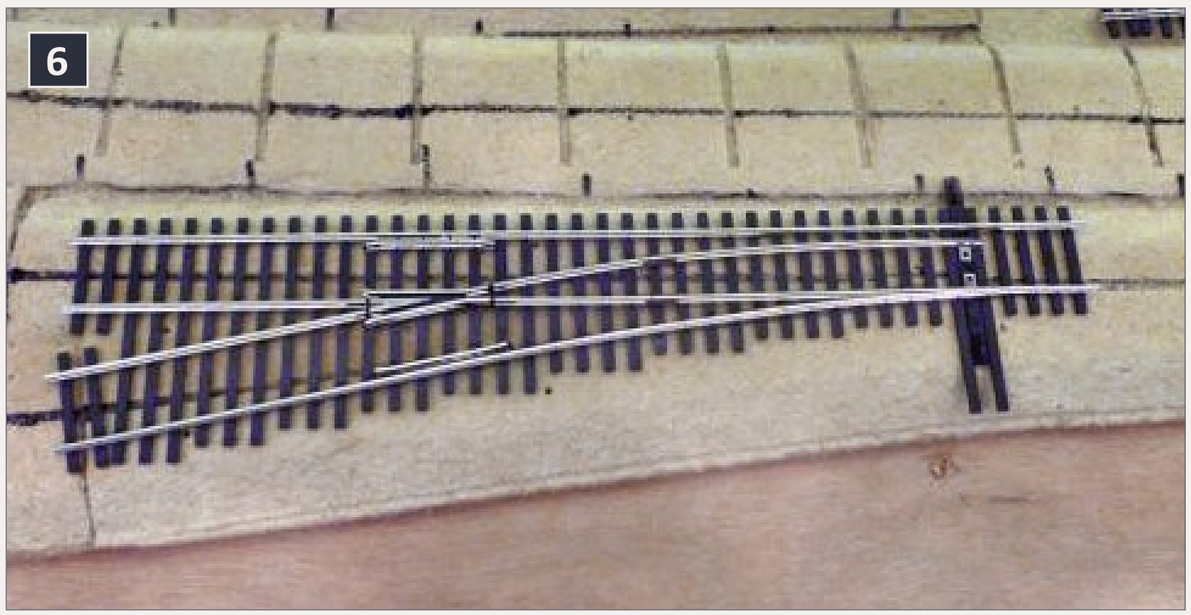
Especially in curves, and at other locations, you will find that the rail ends don't match; one will be longer than the other. In this situation, I lay the

3. Gap filling ACC glue.

4: Run a bead of ACC along each end of the ties.



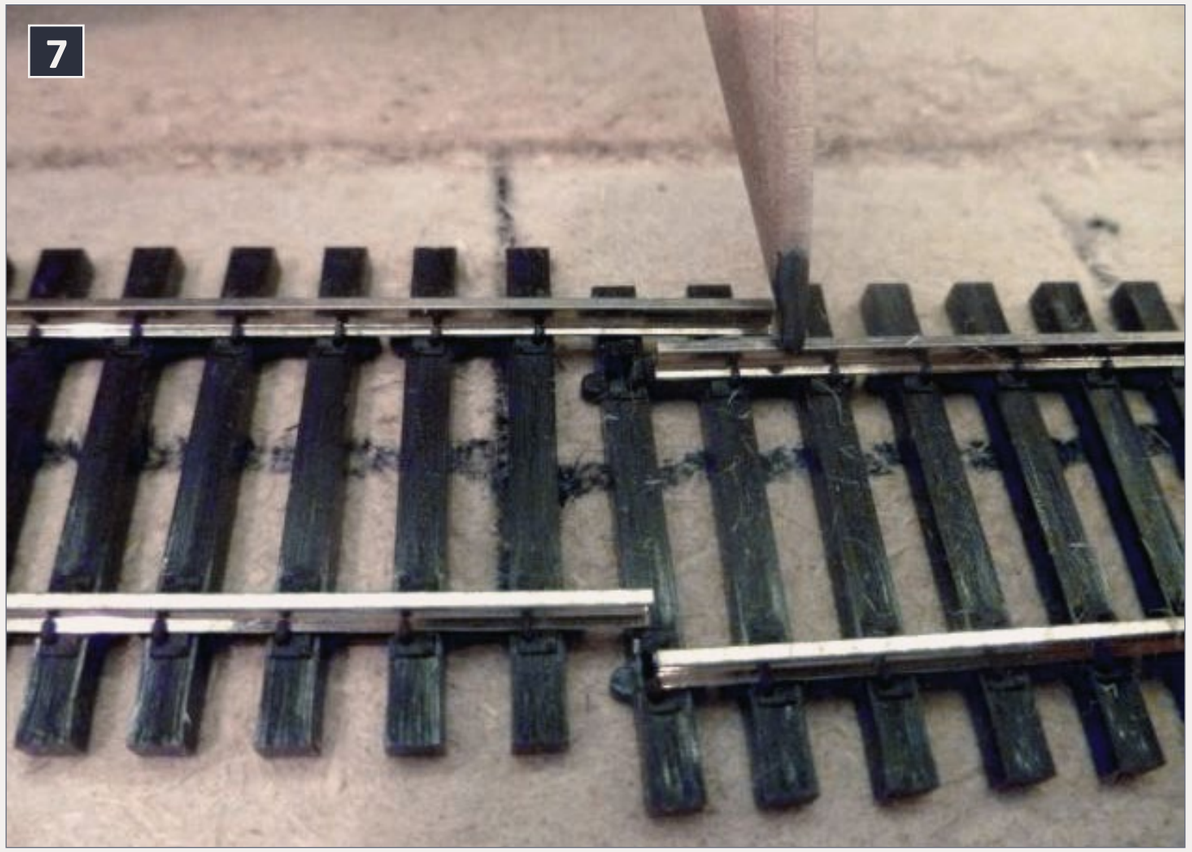
5. Marking the throw rod position.



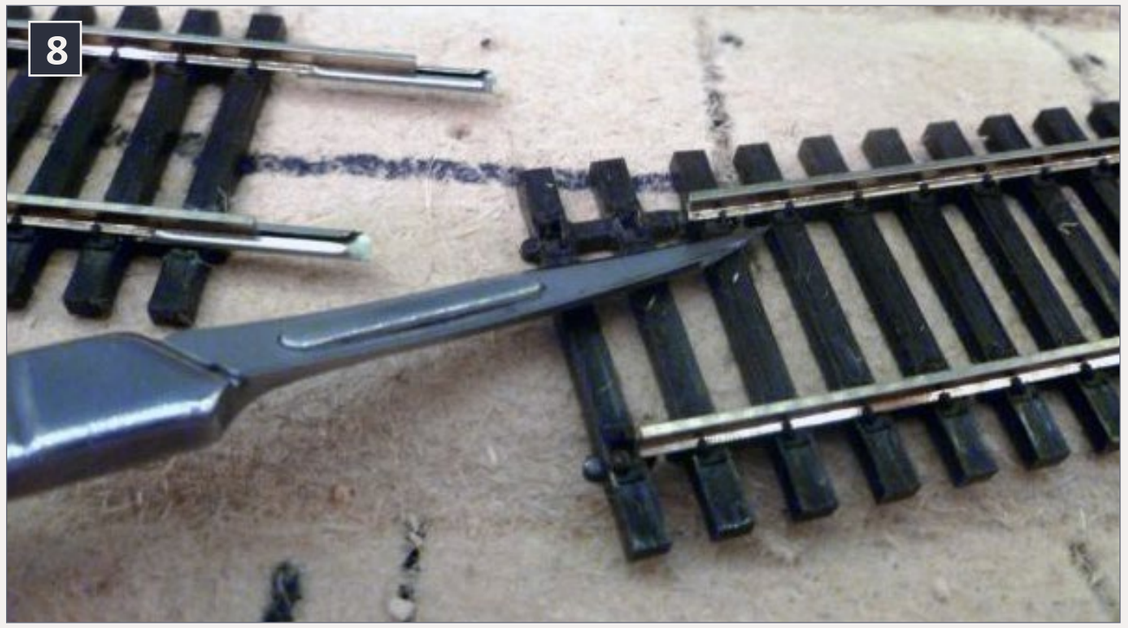
6. Drilling a slot for the throw rod.

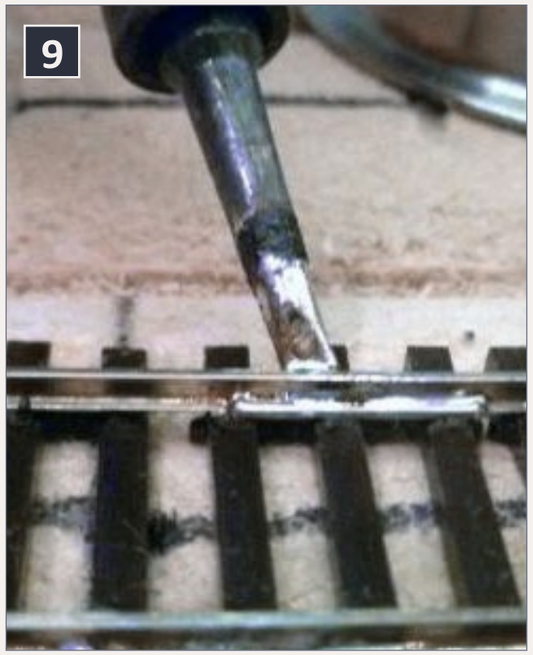
two tracks side-by-side, and use a pencil to mark the amount of rail that needs to be cut off to make the rails meet. Just as the real railroads do, I leave the joints staggered, which results in smoother running. I cut off the excess rail using Xuron rail cutters.

The spikes will need to be trimmed from one or two ties to allow the rail joiner to slide on. I use a scalpel with a no. 11 blade to do this. What else – I am a physician! A scalpel blade is sharper and has a thinner profile than the usual hobby knife blades. Scalpel handles and blades are readily available from Amazon.com and others. A handle will run about $10, and you can get 100 blades for about $13.



7. Marking the location to cut.





8. Trimming spikes for the rail joiner.

9. Soldering the joint.

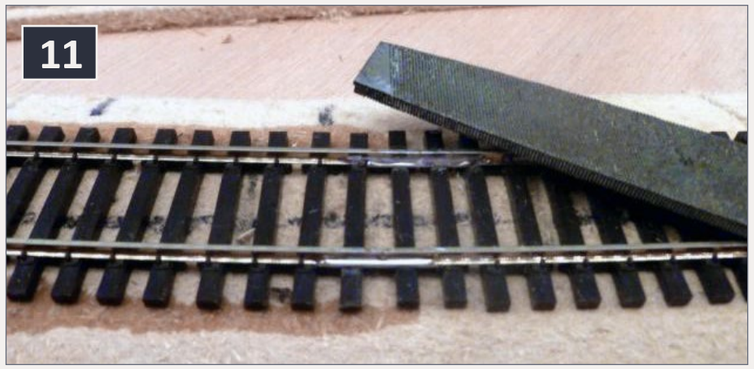
The next step is to slide the rail joiners in position, and then solder the joints. Soldering ensures a good electrical connection. I have done this on all my layouts for years. Even in an unheated garage in California, where the temperature has gone down to freezing in winter and above 100° in summer, there were no problems with expansion and contraction.

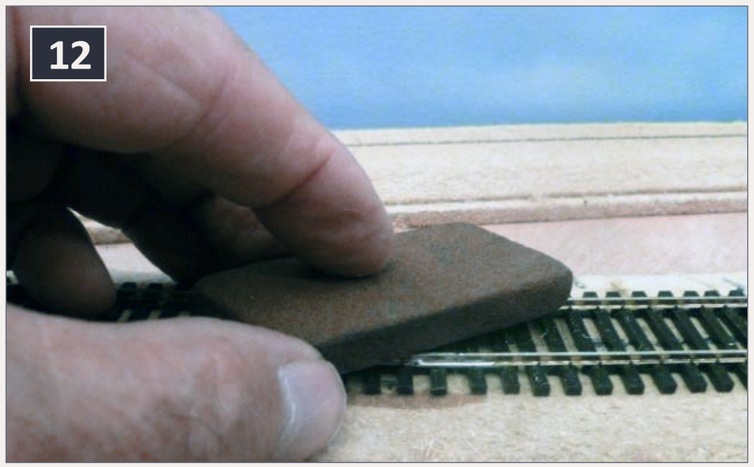
My friend Marvin showed me a great tool for cleaning the tip of a soldering iron. It's a container [10] with a ball of brass wool. It cleans the iron well, without cooling the tip, as a

sponge soaked in water will do. The cleaner is made by Aoyue (Aoyue.com). I got mine from Amazon.com. Once the tip is clean, I use a controlled-temperature soldering iron along the side of the rail and allow a small amount of solder to flow into the joint.

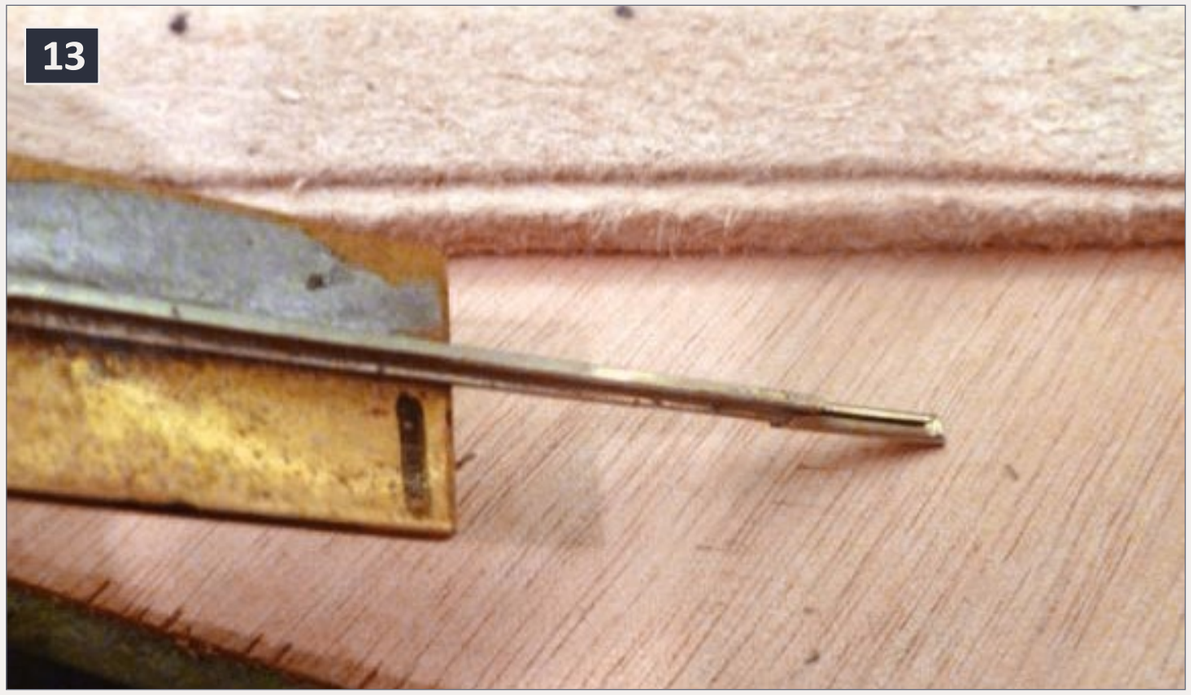
Once the joint has cooled, I check the alignment and gauge using an NMRA track gauge. Then I smooth the top of the joints with a flat file and finish with a “Bright Boy” abrasive track-cleaning block.

One problem I encountered was that the





10. Soldering iron tip cleaner.
11. File the joint flush with a flat file.
12. Finish the surface with Bright Boy.



13. Tool for widening the rail joiners.

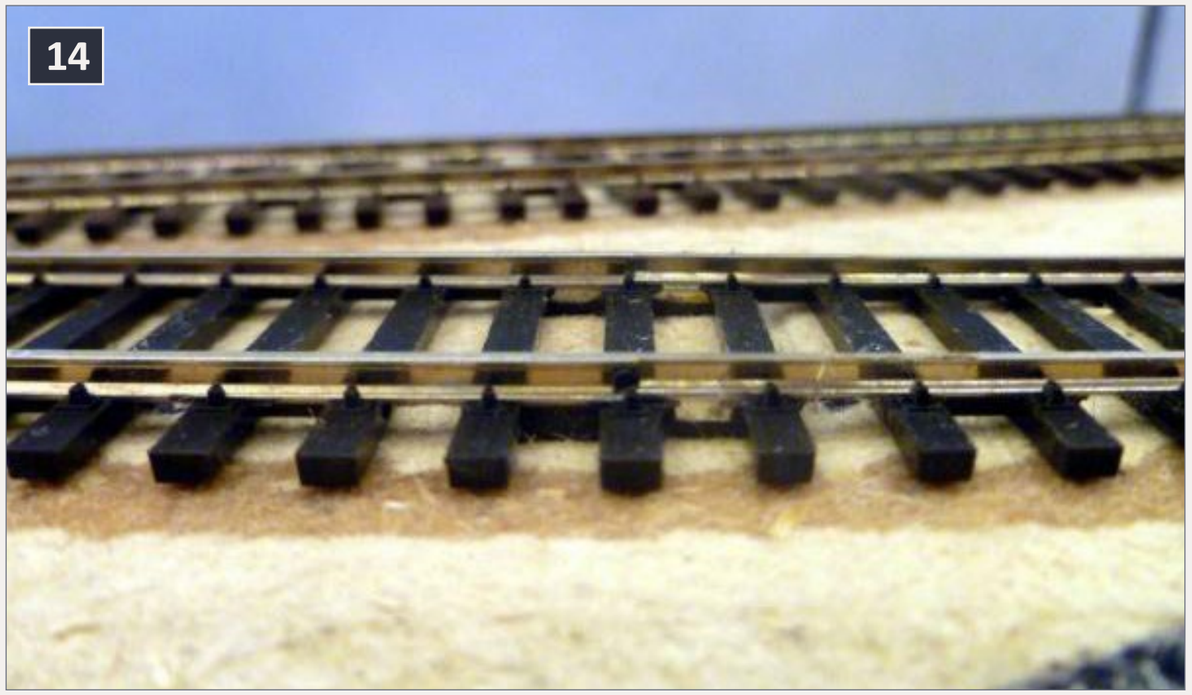
cross-section of rail, and joiners for a given rail size, vary from one manufacturer to another. In some cases, the rail joiner will slip on easily, but in others, a moderate amount of force is required. In the worst case, the force required is so great you run the risk of destroying the track, and they become nearly impossible to remove if adjustment is required.

To avoid this, I made a tool from a piece of brass bar stock with a length of code 83 rail soldered to it. I rounded and smoothed the end of the rail to make it easy to insert it into the rail joiner. I used rail with the thickest cross-section, which was the rail from the Walthers Shinohara switches. I settled on the Walthers code 83 rail joiners. I like the simulated bolt detail on the sides. I slide a joiner onto the tool by pushing it against a piece of soft wood. This opens up the joiner. I then pull the joiner off with a pair of needle nose pliers. The rail joiner can

be widened further by wiggling the tool from side-to-side, while inserting and withdrawing it from the rail joiner [13].

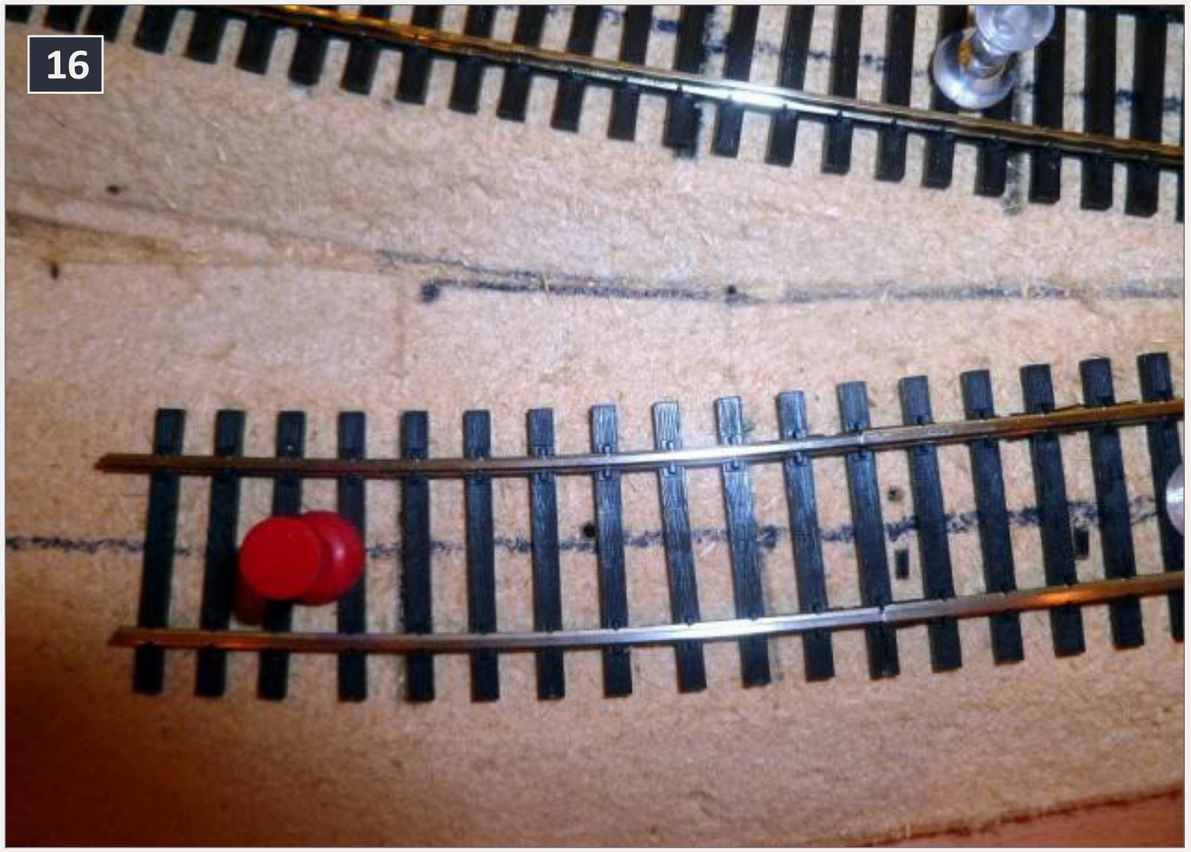
The main line is laid with code 83 rail, which is appropriate for the Kansas City Southern Railway in the 1940s. For contrast, the sidings are laid with code 70 rail, and lesser-used industrial spurs with code 55 rail. The contrast in rail sizes enhances the prototypical appearance. This means that when laying track, a transition is required between the different rail sizes. The code-83-to-code-70 transition is made easy by a transition track, Walthers number 948-898 [14].

Unfortunately, the transition track section is NOT flexible. Of course, one of my industrial sidings requires a section of track to be curved. That can be accomplished by turning the transition section over and cutting away the plastic pieces that join the ties under the rail, on one side of the section. This will allow the section to be bent (be gentle!).



14. Walthers code-83-to-code-70 transition track.

15. Cutting away the section between the ties.



16. The transition track curved into position.

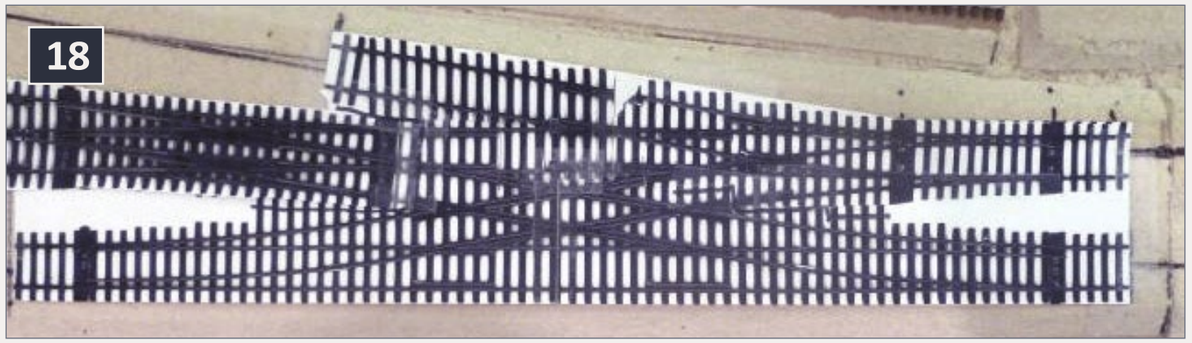
Using these techniques, I continued laying rail southward from Noel, Missouri. This eventually brought me down to the lower end of the layout, and the time to lay the complex track work for the south throat of the Deremus freight yard. On model railroads, complex track work such as this allows us to selectively compress a lot of operating into a small space. In addition, the switch work enhances the prototypical appearance and impresses visitors!

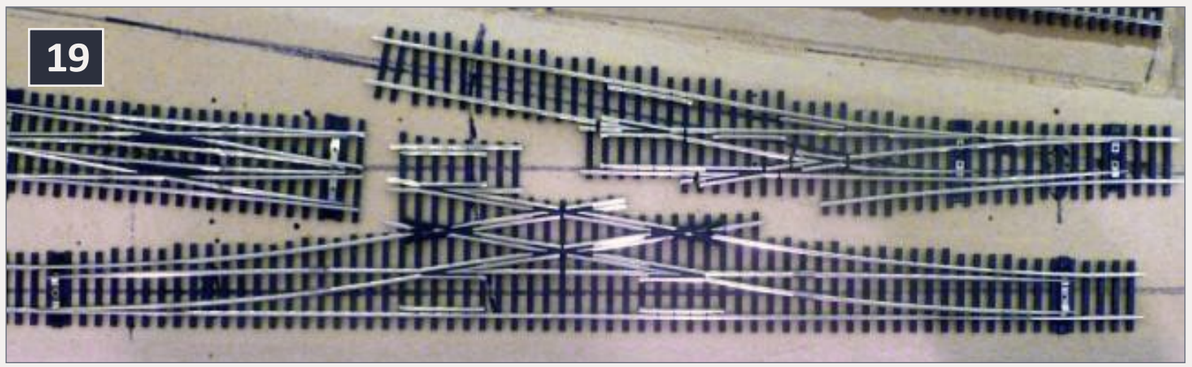
It's been over 10 years since I constructed track like this for the Kansas City Terminal Railway, so was a matter of refreshing my skills. The first step was to lay the switches in position over the tracks' centerlines. This gave me a general idea of what kind of cutting and fitting would be required [17]. Given the cost of a double-slip switch or three-way switch, cutting the switches to fit must go right the first time! To ensure this, I photocopied the switches and then cut and fit the paper

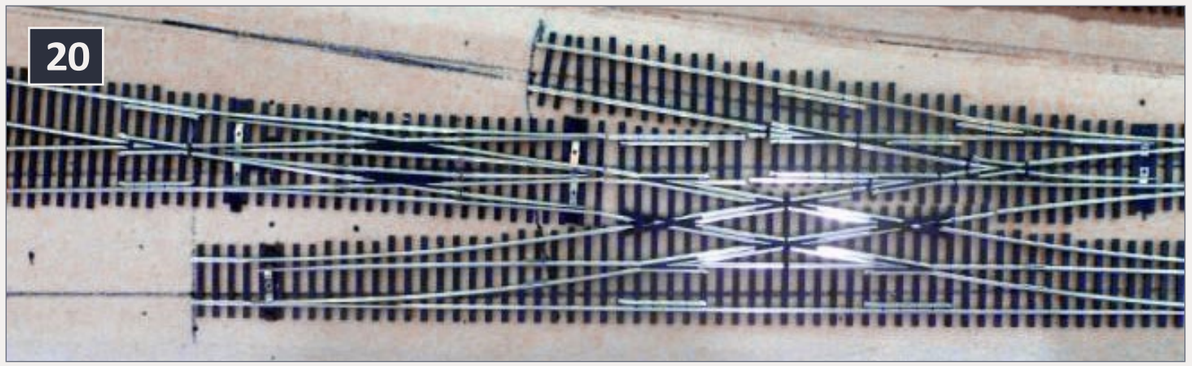
17. The switches temporarily laid in place.

templates. This allowed me to know exactly where the actual switches should be cut. This junction required one double-slip turnout, one double-crossover and one three-way turnout [18].

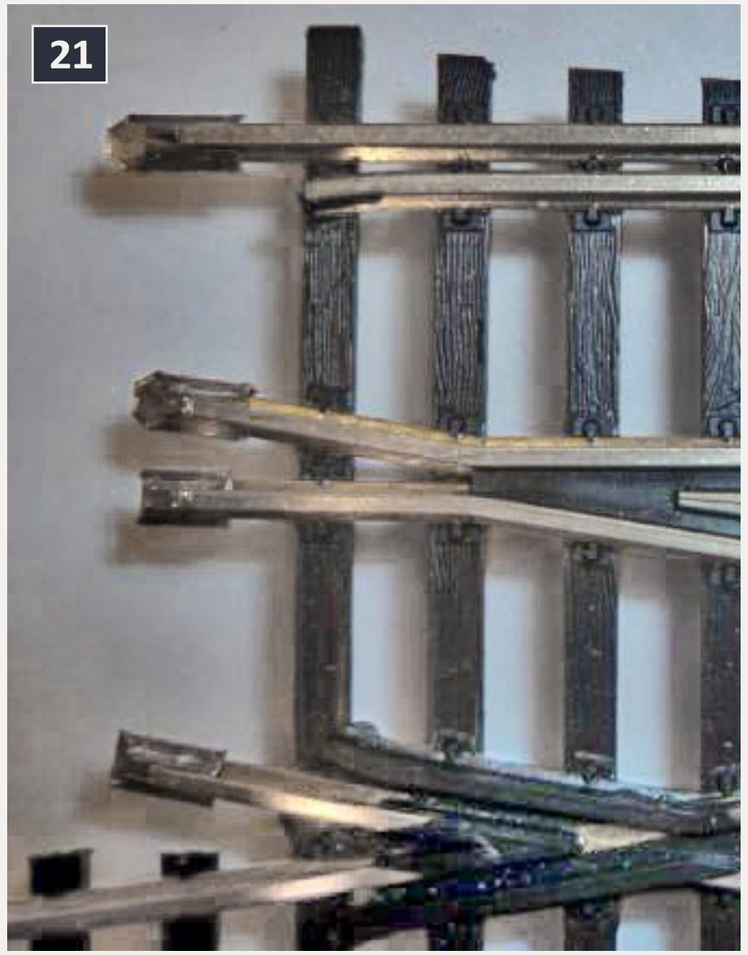
With the paper templates, I could begin, with some confidence, to cut and fit the actual turnouts. I use Xuron rail cutters for most cuts, though in a tight place, I sometimes (carefully) use an abrasive cutoff disk [19].







18. The paper templates cut and positioned.
19-20. Turnout sections as cut, and fit together.



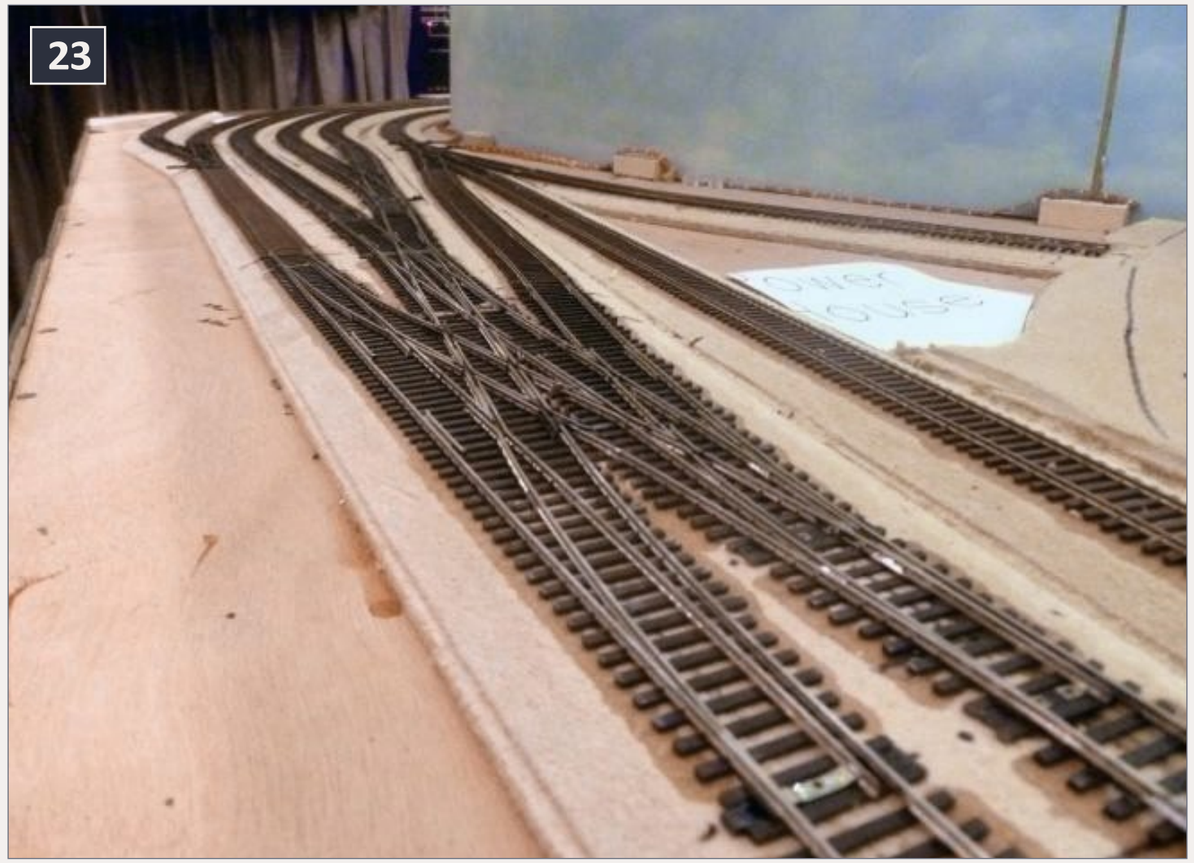
21. Half length rail joiners.

22. Leftover pieces of the turnouts.

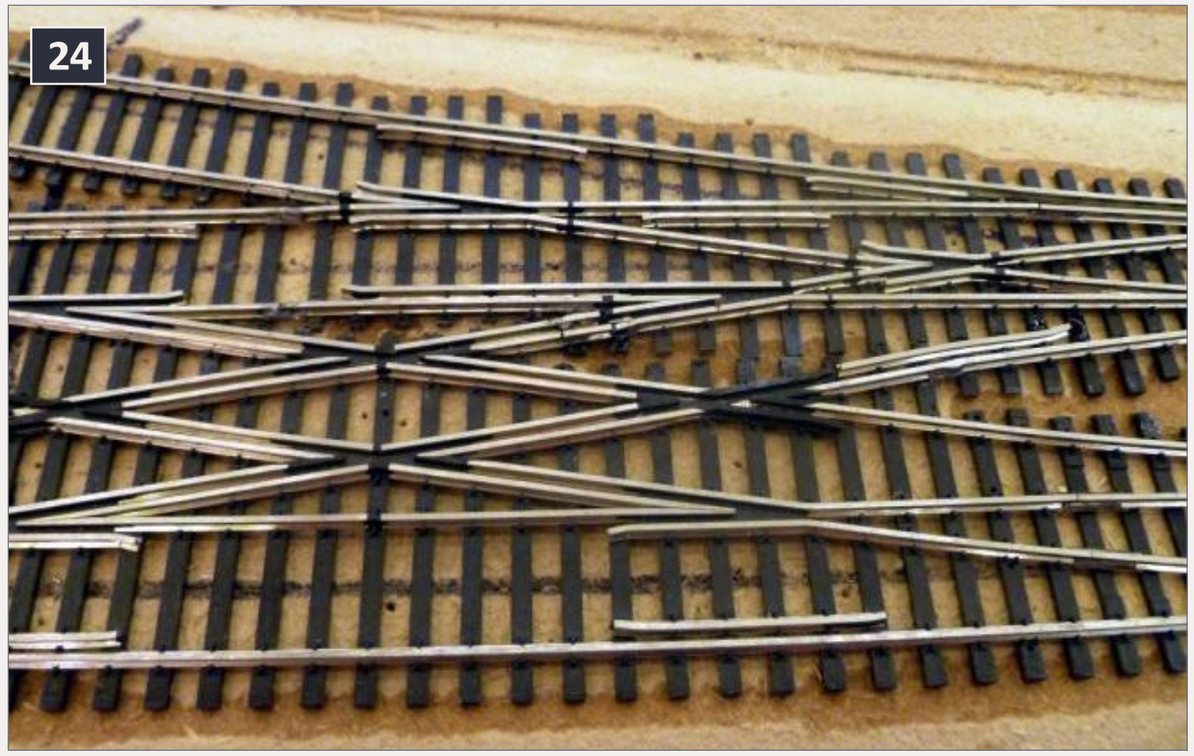
One key to making this work was the use of half-sections of rail joiners. Many of the locations were too tight for a full-length rail joiner.

The same approach was used to create the throat at Shreveport Union Terminal.

On my layout, adjacent to the town of Rhodessa, Louisiana, will be situated the Godchaux Sugar Mill. The scene will include a 30” narrow gauge sugarcane railway. The track was laid using HOn30 flex track and turnouts from “Tillig HO Bahn, HO Gleiss-System,” The photograph shows the contrast in size between the standard and narrow gauge track. The contrast between the locomotives and rolling stock is even more impressive!



23. The completed throat.



24. The completed throat, detail.

25. HOn30 Sugar Cane Railway.

The Cane railway will feature an animated sugarcane train, which will run forward and backward along the narrow gauge track, on a three-minute cycle.

That's it for this installment! Next time we'll be adding the switch machines, wiring, painting, and weathering to the track. ☑

Reader Feedback
(click here)

26. "Tillig HO Bahn, HO Gleiss-System."

Ken and Dirk collaborate

Photos and video of superb models

Reader Feedback (click here)

What's neat this week column

by Ken Patterson

1

1, Dirk Reynold's Union Pacific Fountain, IL bridge.

To start this month's video, I talk about making your model photos more interesting by simply adding the human element, people, to your photos. Model photos look dead and uninteresting without people in them. Simply adding one figure or a group of people can be the difference between a good photo and a great photo.

See the two Canadian locomotive shots on the following page. One photo has no people and the other has two folks looking at the locomotive. The first shot looks sort of boring, and the shot with the figures in it looks more pleasing to the eye.

For the next segment of the video, I shoot a bridge that Dirk Reynolds built. It represents a bridge at mile post 17.4 on the Union Pacific's Chester sub, at Fountain IL. Included in the text of this month's article are two model photos of Dirk's bridge,

... On to next page of text ➔

Playback problems? Click to try a different version.

← back to previous page of text ...

with some wonderful Athearn ACe diesels flying across the model bridge. Also included is a prototype photo of the real bridge for your comparison and review.

3. The scene without people.

4. The scene *with* people.

I will let Dirk describe the construction of this project in his own words in the mini-article following my column.

Last, this month I want to talk about electricity and lighting your layout. Recently I have switched from halogen lights to LEDs. Instead of burning 50 watts per bulb, I now burn only 3 watts per bulb.

When you quantify it, 50 heads burning 12 hours a day every month was a lot of power used at 50 watts each – about 2500 watts. Now I am using fewer than 200 watts for all 50 heads. I don't heat the basement any more, but I have been able to save $83 on my electric bill each month for the past three. That is a savings worth looking at for your layout, if you have as many lights as I do.

5. Two 3-watt LED bulbs (left), next to a 50-watt halogen bulb.

6. Ken's studio lit with 3-watt LED bulbs: a savings of 2300 watts and $83 on his monthly electricity bill.

Here are two photos: one photo [4] shows a pair of 3-watt LED bulbs and the 50-watt halogen bulb that I replaced.

The other photo [5] shows the overall room, with many 3-watt LED bulbs lighting up my studio. It's normal for me to have the lights on for 10 to 14 hours a day while I work on my various projects. I can now save significantly on the wattage demands and get a very noticeable drop in my electric bill! ☑

Reader Feedback (click here)

Dirk Reynolds' special mini-article continues on the next page ➔

What's neat this week mini-article ...

Building UP's Fountain, Illinois RAILROAD BRIDGE

by Dirk Reynolds

To begin this prototypical build of the railroad bridge at the Fountain, IL levee, I took 202 pictures of the bridge and the landscape around it. Over a one-month period of time, every angle, every piece and every sign was photographed. I then measured every piece of the bridge and all of the landscape, and where the bridge fit into it.

The initial build took a little over eight months. I began with three pieces of 2” pink foam glued together. I had to add two more pieces later to keep the module from bending and breaking the bridge parts. I molded the land to fit the bridge, applying the measurements taken of the prototype.

The wooden part of the bridge was built first. I had to first build a jig to fit the complicated pieces together. Ken Patterson loaned me his HO-scale caliper to measure the scale lumber. Next was the steel girder bridge section. This was accomplished by cutting down two Central Valley girder bridges and attaching them together.

7. The wooden trestle supporting the approach span contrasts with modern segmental concrete work supporting the steel through-deck bridge. Dirk Reynolds photo.

The bridge pilings were donated by Scale Segmental Bridge Company. They have the true octagon shape, like a stop sign. I ran into a problem with the casting of plaster they are made from. They are very fragile. My solution was to cut down square wood pieces into eight-sided pieces, without cutting my fingers.

I then encountered the same problem Union Pacific’s bridge builders had when they built the first side in 1982. The other side was completed in 1983, as shown by the cornerstone dates in the bridge piers. I knew the length of the bridge, but this did not match up on the north side. I knew I needed seven bridge segments, but this did not add up right to reach the girder section. I then learned why they used I-beams to span the gap. The eighth segment was too short. Notice the short red segment to the left of the main span in the lead photo on the previous pages.

This is also why I wanted to model this particular bridge, since my photos show four different types of bridge spans in its consist. Now, unfortunately, it has been retrofitted, and contains only three types of the modern concrete type segments and a lot less personality.

This type of bridge uses “floating ballast track.” This means the ballast literally holds the track in place while it floats inside the bridge deck segments. In modeling, however, you have to use a different approach to laying the track. I made the mistake of trying to lay the track on wood and then liquid ballast it. What a disaster! I had to rip up three hours of work, rebuild the wooden section with styrene, silicone the track to it, and then liquid ballast it down.

The concrete section also worked differently. The prototype track is placed inside the segments. On the model, the track is on top of the ballast while inside the segments. A bit of painting

and weathering on the piers, I-beams, and girder section finished the bridge itself.

The final step was the landscaping. I poured my Enviro-Tex resin for water, and added my ground cover and trees along the banks to finish.

It took a lot of patience and perseverance to finish the build. I displayed it at the St. Louis MO prototype modelers show and received rave reviews. ■

8. Union Pacific ACe diesels race across Dirk Reynolds' ballasted deck bridge. His scratchbuilt model looks just like the prototype photo at [7].

MRH HOBBY MARKETPLACE - 1

MRH HOBBY MARKETPLACE - 2

MRH HOBBY MARKETPLACE - 3

MRH HOBBY MARKETPLACE - 4

Nibblers

A special tool for a specific need ...

by Jack Burgess

Reader Feedback (click here)

The proliferation of wood laser-cut craftsman structure kits over the past couple of decades has probably resulted in a lot less scratchbuilding in our hobby. But if you want structures which reflect your particular prototype or area being modeled, you might eventually need to scratchbuild at least some of the structures needed for your layout.

I enjoy scratchbuilding and realized that all of the structures on my layout would need to be scratchbuilt when I picked the Yosemite Valley Railroad to model 40 years ago. Back then wood was the preferred material for scratchbuilding both structures and freight cars.

The articles written by Al Armitage on scratchbuilding with styrene in a 1959 *Model Railroader* magazine influenced me. After unsuccessfully trying some of Al's suggestions on scribing sheet styrene to produce V-groove siding, Evergreen Scale Models came to my rescue with their line of plain and scribed styrene sheets as well as dimensional strips.

Probably 60% of the 100+ structures and bridges on my layout were scratchbuilt from styrene. One of the more time-consuming steps in scratchbuilding any structure is cutting out the window and door openings.

When I started scratchbuilding, the standard approach was to cut out the sides for the building and then lay out all of the windows and doors. After deeply scoring all four sides of each window and door, an "X" was cut across the opening and the four triangular pieces were carefully pried out.

This approach generally worked but was time-intensive since you need to cut nearly completely through the wall to be able to force out the center, especially with the .040" material I use for all of my styrene buildings. It was also very easy to get outside the scribe lines while making deeper cuts, which could mean the need to scrap the piece and start over.

I can't remember how I came to purchase a nibbler. I think it was back in the days when the model railroad magazines

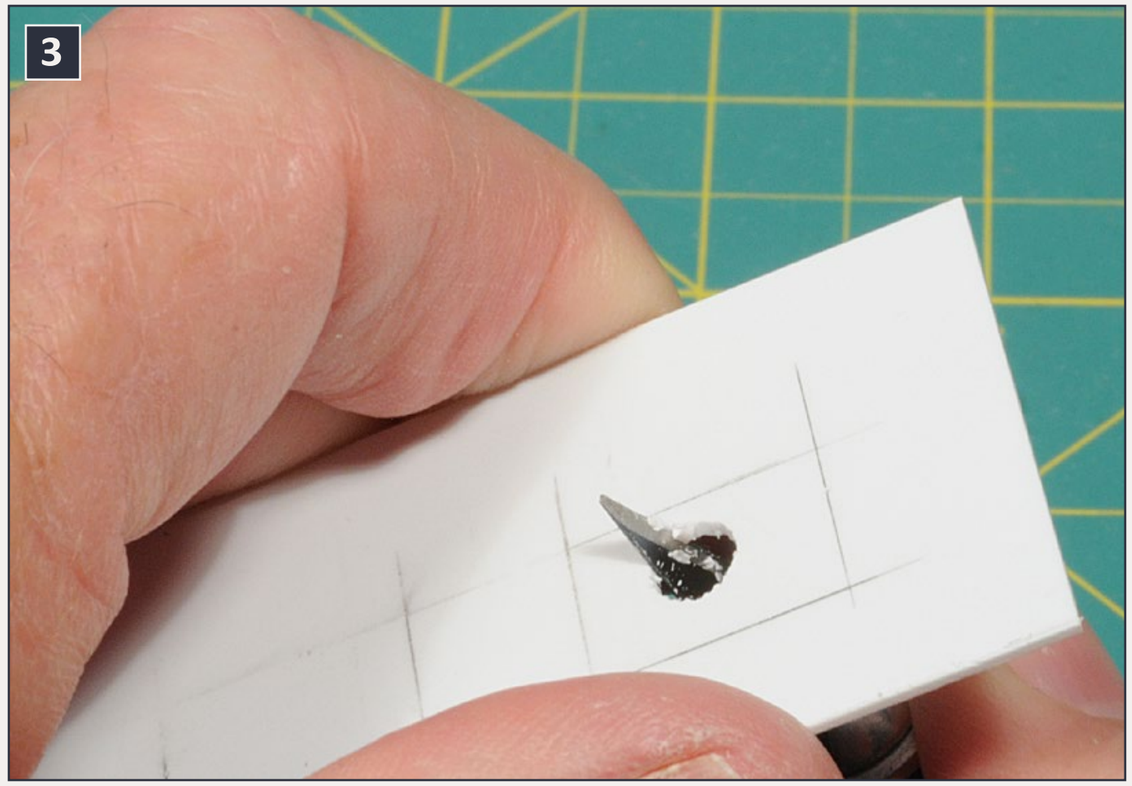
1. This is my nibbler. If purchased from Radio Shack, it is a "nibbling tool" but if purchased from Micro-Mark it is a "nibbling cutter." They appear to be identical.

included plans for transistorized throttles and other electronics. Nibblers were sold by Radio Shack and others primarily to cut openings in aluminum panel faces to mount volt and amp meters. I purchased a nibbler and used it occasionally for that purpose before realizing that it could make it much easier to cut door and window holes in styrene.

I purchased my nibbler [1] from Radio Shack which still sells them (search for “nibbling tool”). They are also available from Micro-Mark. Search for “nibbling cutter”. They cost between $13 and $17; the one from Micro-Mark is a little cheaper.

2. Start cutting a hole for the nibbler head using a No. 11 blade in a hobby knife. Push down as you twist.

To use a nibbler to cut out a window, first lay out the window opening with a pencil. I



3. Once you have a small hole, you can start carving it larger with the same hobby knife. Be sure to stay inside the pencil lines for the window opening.

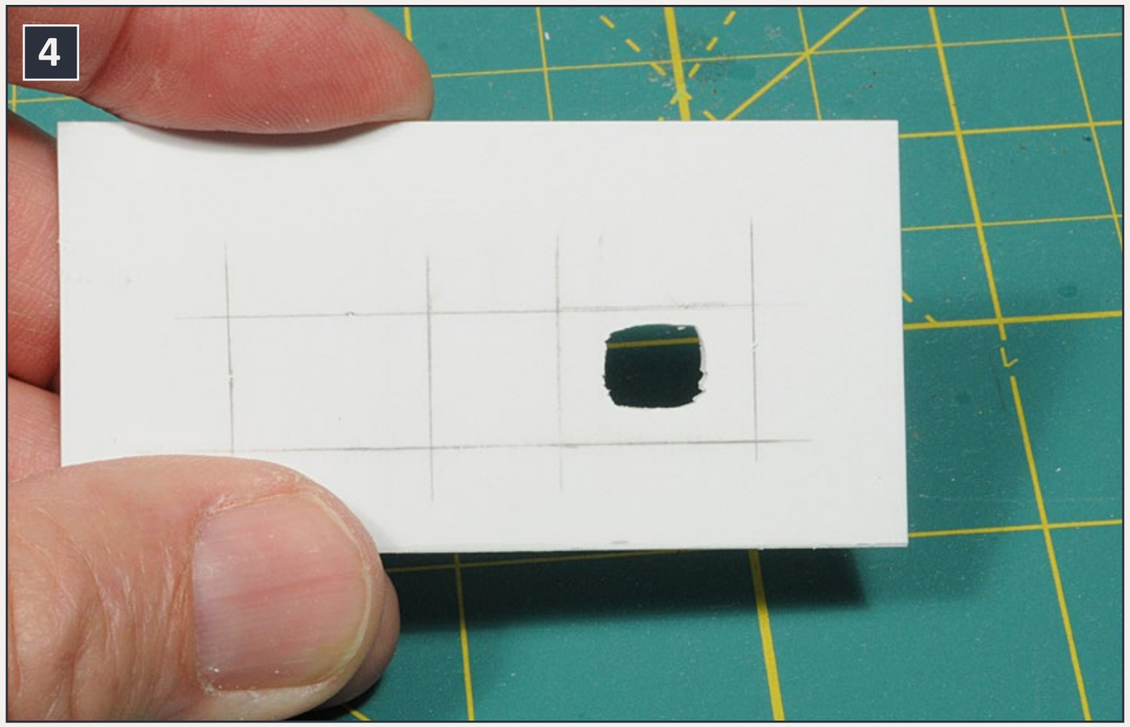
use a 0.5 mm mechanical pencil to lay them out to minimize the width of the pencil lines. These pencils are available at stationery and art supply stores. I then make a rough-cut opening large enough to insert the head of the nibbler (the head is 3/16” long by 1/4” wide) into the opening and then “nibble” the opening out to the limits of the window.

While it might seem logical to make that initial hole with a drill bit, it is actually easier and faster to use a No. 11 blade in a hobby knife. I hold the knife vertical to the styrene [2], roughly centered in the window opening, and simply push down and twist it. After a dozen or so turns, the resulting hole will be large enough to start simply carving it out large enough to fit

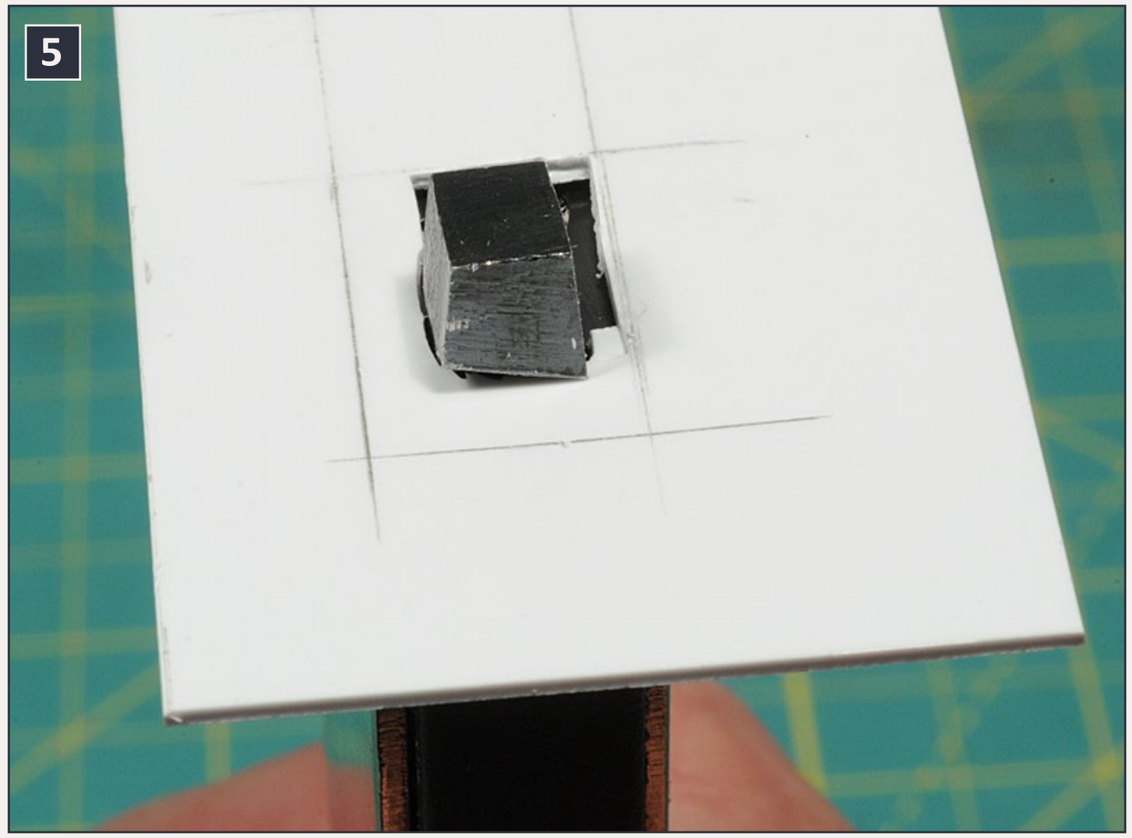
the nibbler head [3]. Be sure to stay clear of the pencil lines as you enlarge the hole.

Once the hole is large enough to insert the head of the nibbler [4], you can start cutting out the opening [5]. I usually nibble my way to one of the sides, cutting right up to the pencil line. This is easy because the cutting face of the nibbler is straight. The sides of the nibbler cutter are also square to each other, making it easy to turn the nibbler 90° and cut right up to a corner. The nibbler won't make very narrow cuts very easily, so it is better to nibble to within 3/32” of a line, and then cut right to the line with the nibbler for the last cut.

If you are careful, very little cleanup will be needed to have the window casting fit into the hole [6]. I tend to cut just slightly



4. Here is the hole after carving. Since the nibbler head is a rectangle, squaring up the hole will let the nibbler head fit with less carving.



5. Here is a close-up of the nibbler cutting head.

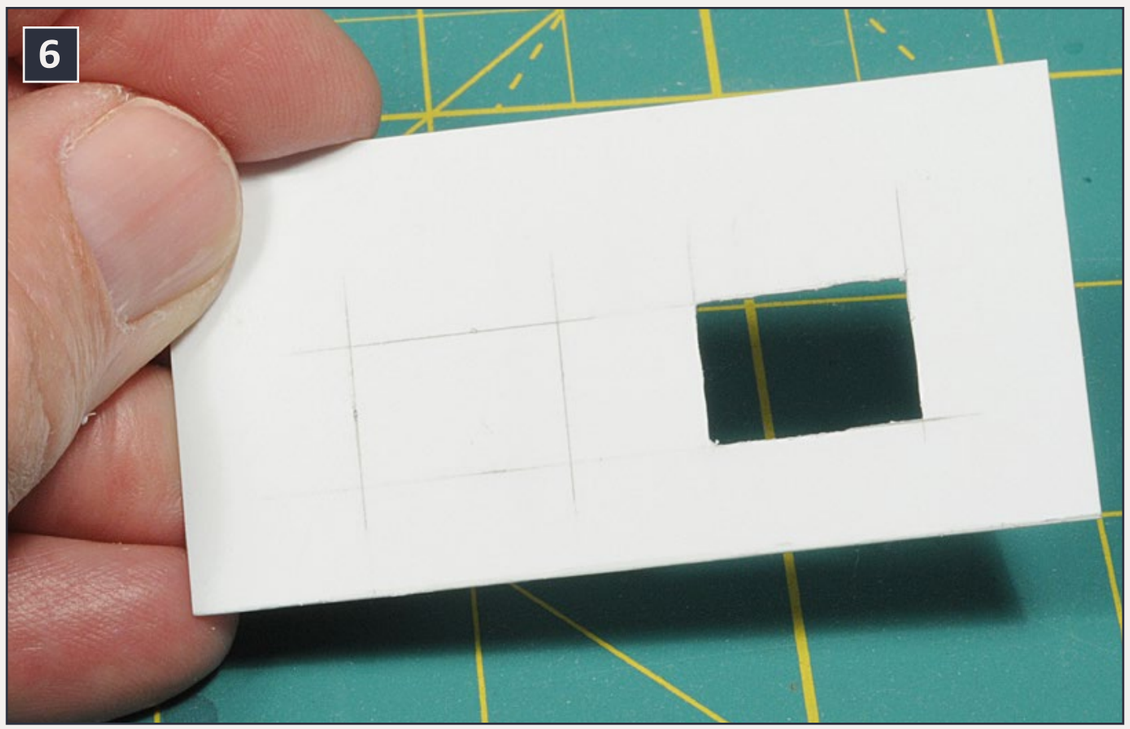
wide so that I don’t need to do any cleanup. Any minor irregularities in the opening will be covered by the outside trim around the windows. Note that this approach works only when you are using windows with trim. Windows in masonry buildings normally don’t have trim. It also won’t work for small windows if the nibbler head is larger than the opening needed for the window casting.

Once you’ve finished with the nibbler, check to see if the casting will fit in the resulting hole. If it doesn’t quite fit, fine-tune the hole with the hobby knife, carefully carving or scraping as needed. To see where material needs to be removed, insert the casting as far as it will go and look from the inside of the wall to see where it is binding.

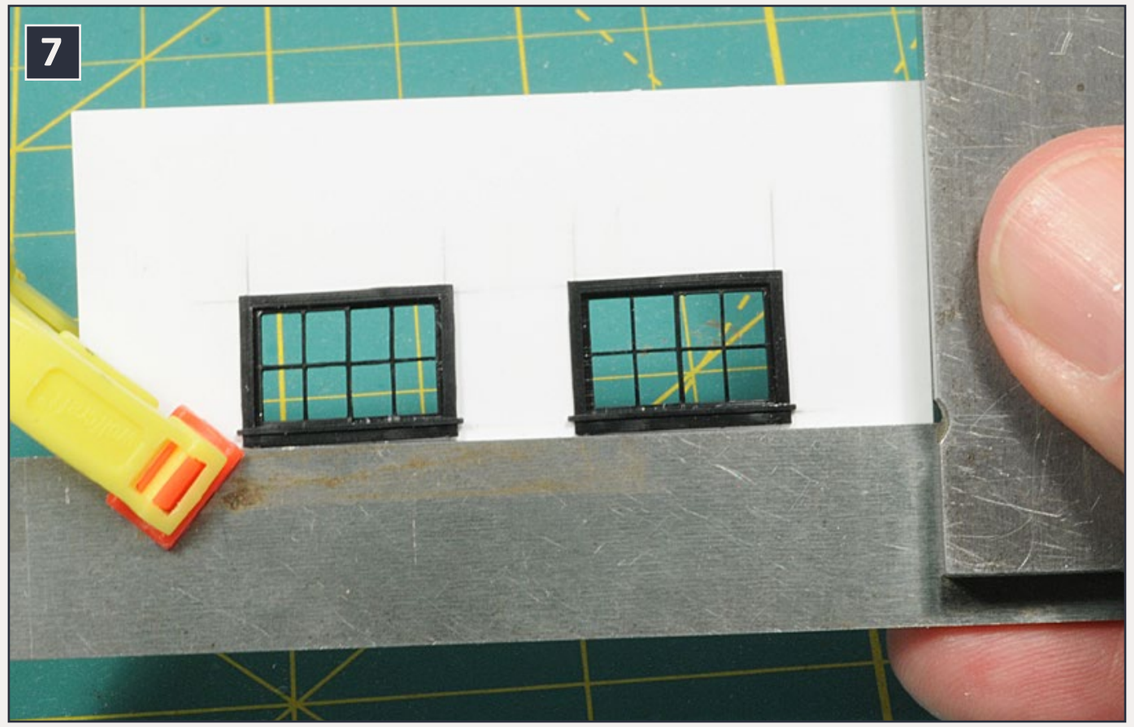
After the window casting fits the opening, use a small machinist's square to make sure that it is plumb (vertical).

If there is more than one window on that side of the building, place a straight edge along the bottom of the window castings to make sure that they are all level to each other [7]. Unless the castings all fit tightly, I clamp the straight edge to the building wall while spot gluing them at the top of each window to make sure that none of the castings move out of alignment. I then remove the straight-edge and finish bonding them in place.

While doing the photos for this article, I checked how long it took to complete a window opening from start to finish using a nibbler. Without rushing, it took just over a minute to "drill" and carve an opening for the nibbler head, and the same



6. This photo shows the resulting hole for the first window casting.



7. When using more than one window casting, use a straightedge to make sure they are all level and aligned.

amount of time to insert the nibbler and cut out the opening. It then took just over a minute to fine-tune the opening to allow the window casting to fit. All together, it took about 3½ minutes total per opening.

While this method won't work for every building, it is a quick method for cutting out openings for windows with exterior trim.

Disclaimer - I love good tools and don't hesitate to invest in them. ☑

Reader Feedback (click here)

The Indiana Northern

L&IN

Tom Johnson's Logansport and Indiana Northern

– By Don Hanley
Photos by author & Tom Johnson

Modeling on a shelf layout ...

Reader Feedback (click here)

In the middle of an Indian corn field near Kewanna, Indiana, sits a modest home that houses one of the most detailed layouts built to date. The layout is of none other than Tom Johnson's Logansport and Indiana Northern. Many on the MRH forum have admired and envied of Tom's work on the MRH forum. I had the privilege of spending an afternoon with Tom discussing his approach to model railroading.

MRH: Tom, as a transplant from Indiana, when I see your work it brings back memories of my many years living near Fort Wayne. Let's start with the basic question. How did you get started in the hobby?

Tom: I got started when I was in the 5th grade, with an American Flyer train set followed by a Lionel FA Texas Special. I sold the Lionel train to help fund an Athearn set with the old rubber-band drive Santa Fe F unit. I purchased the Athearn set from the City News Agency hobby shop in Plymouth, Indiana. I didn't have enough money so I put it on layaway. At the time,

Lead photo: L&IN #29, a former Lehigh and Hudson River Alco C420, is passing the approach signal for the crossing with the former Erie Lackawanna main in Delong IN. The Farm Bureau Co-op fertilizer is in the background.

1. It's mid-morning and 29 idles patiently, waiting for the crew to finish office work in the yard office.

2. The yard office in Logansport is a nondescript metal building that serves the L&IN very well.

I earned $2.50 a week sweeping the floors of my cousin's barbershop and used my earnings to get the Athearn set out of layaway.

My first layout, built on the typical 4' x 8' sheet of plywood, I operated throughout high school. After graduating high school I attended Manchester College. There was no time, or room for model railroading during my four years in college, so I sold them, and purchased a stereo system to put in my dorm room.

3: Van Tower has been abandoned and sits forlornly at the crossing while Norfolk &Western hoppers rumble over the diamond it once protected.

4. Lucerne is a typical rural town in Indiana with mini mart to take care of the few locals' household needs and a grain elevator. The brick building houses the offices for Kent Feeds. The L&IN blocks South Street as the brakeman connects air hoses. The PRR cast iron crossbucks give clues to the heritage of the line.

A couple of years after graduating college I began working for the Plymouth, IN school system as an art teacher, and I rediscovered the hobby. This time I began building shelf-type layouts and have built that type of layout ever since.

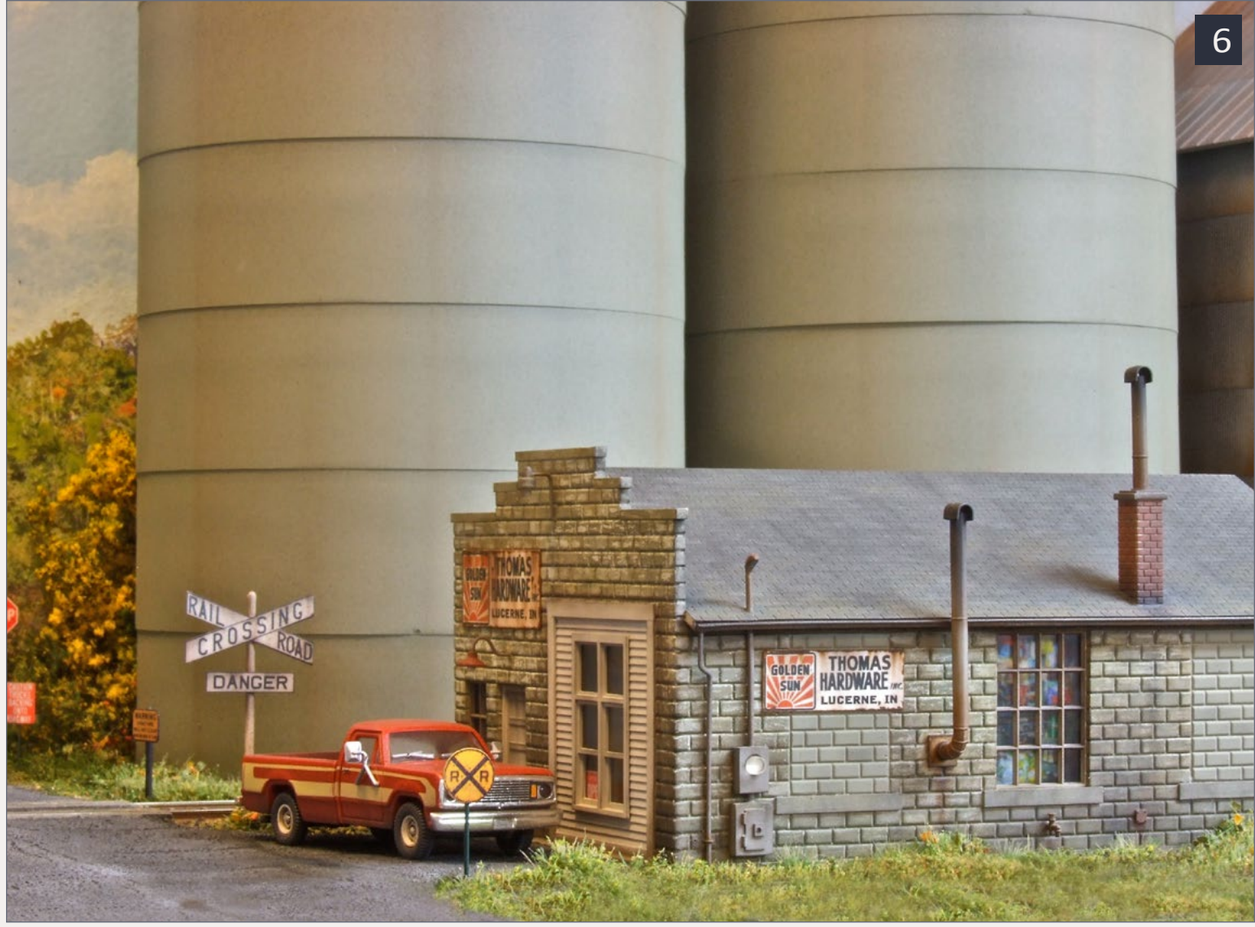
MRH: What time period have you chosen to model, and what lead you to this time period?

Tom: I model the 1980s. I love farm scenes and covered hoppers. Jim Six and I go back and forth about boxcars vs. covered hoppers servicing elevators. Jim is a member of the boxcar

camp, and I belong to the covered hopper camp. We go back and forth about it but all in good fun.

I also choose this time frame because it was before graffiti become a dominant feature of many freight cars. I don't like the graffiti on the cars, so that was also a determining factor of the era. During this time many short lines (some with very short lives) were created as the class 1 railroads spun off many lines that were not profitable or marginally profitable. Here in Indiana there are many old secondary lines that were spun off

5. It's harvest season and three farmers are talking about the weather, crop yields, and politics, oblivious to the L&IN crew picking up carloads of grain behind them.



6. Thomas Hardware is the other business still in operations. The locals provide just enough business to keep it going, but no one is getting rich.

and abandoned. So I stitched together a short line based on an old abandoned Pennsylvania branch line in northern Indiana.

MRH: Why did you choose to model typical Indiana flat land?

Tom: I grew up in Indiana, it's home, I know it, and I like modeling what I can see. This is farm country, I love the grain elevators, small towns, and rural areas of the state. When I want to model a particular structure or scene, I can go out and photograph and measure it. If I were to model say something in the Southwest, it would require special trips to go and photograph the area and structures.

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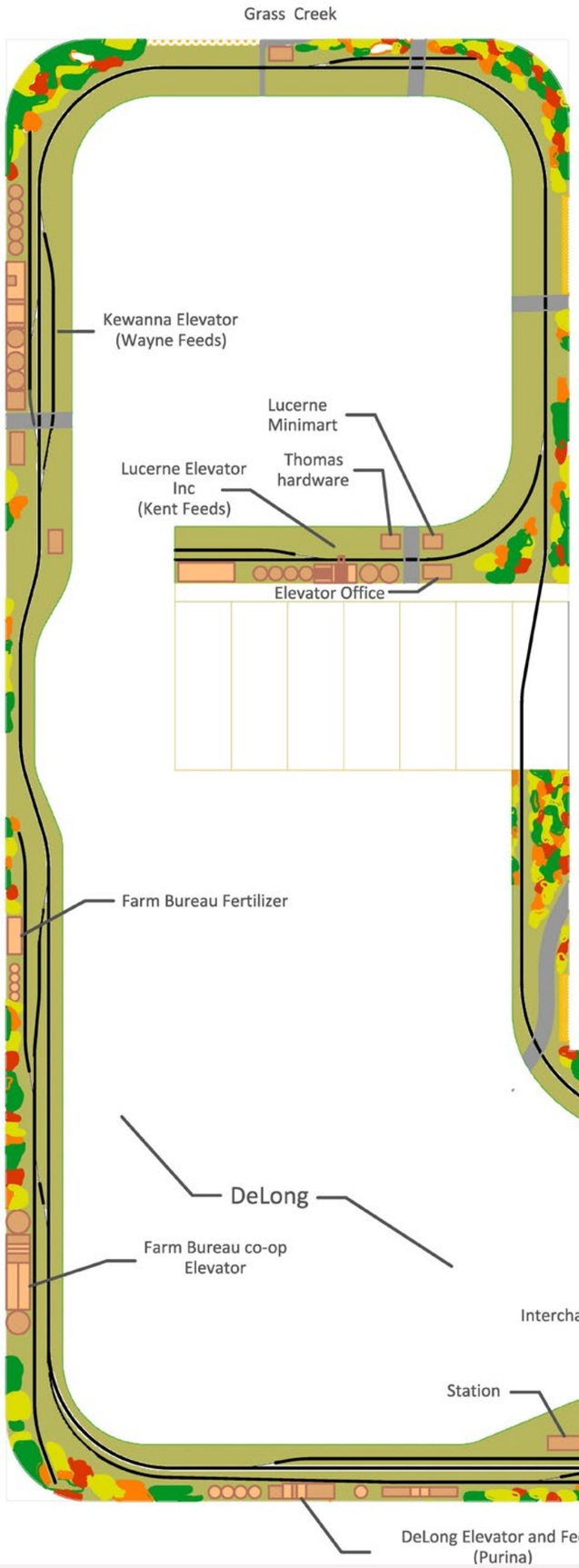

7

8

8. L&IN 29 is just easing across CR 650 S at a blistering speed of 10 mph. Even with a short train it takes a little time for it to clear the crossing.

To view the track plan details, please zoom in.

back to previous page of text ...

It would be very difficult for me to create the feel of the Southwest when I live so far away.

Modeling the area also has its own challenges. Like how do you hide the entrance and exit into the area under the stairway? If I were modeling a mountainous area, it would be a simple, make a tunnel. The key was to align the track in such a way as

9. The passenger station at Grass Creek sits in the weeds boarded up. Its days are numbered. If the railroad doesn't knock it down, Mother Nature will slowly do the job.

10. 354 is going through typical Indiana landscape of corn, fences and numerous small wooded areas.

to block the view as much as possible. The view block is also enhanced by having the line go through a wooded area.

MRH: Modeling to your passion, it keeps you focused and enthused with the hobby. Could you tell us some of your thoughts on model railroading?

Tom: Wow, that can cover a wide range.

I believe it is important to focus in on a specific era. Pick a range of two to three years. Next is the season you want to model, winter, spring, summer, or fall. Finally pick a location. When you define these parameters, it will help you focus in on what you are attempting to create. It also has an added benefit; it keeps you from purchasing a lot of unnecessary things.

11

11. The elevator at Kewanna is a part of the Wayne Feeds group. During harvest season elevator sidings are full of hoppers waiting to be loaded with either soybeans or corn.

Be sure that you are modeling what you really want to model. Pay attention to what you like and what gets you excited. I choose what I like, and I haven't been bored with the layout. I believe that the same will be true for everyone.

I also like to keep the layout simple. I finally converted to DCC and onboard sound. When I was using my DC system, I used an old PBL sound system and ran the sound through eight speakers located under my layout. I like the effect from the larger speakers. There is a lot more range and richness of sound that come from the larger speakers compared to the small speaker in a locomotive. I simply felt that DCC is the present and future of model railroading and it was time to convert. I do like the sound coming from the locomotives instead of under the layout. But I will admit the under-layout speakers had great sound.

As a former art teacher I view model railroading as painting in 3D. You have to think about the composition of the scene, the focal point, the peripheral areas of the scene and so forth. It is also important to have your lighting in place. Colors change depending on the light on them. (Tom turned some lights off and then back on, and the effect on the scenery blending in with the backdrop was very noticeable.)

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12

12. Here is an nice view of the Kewanna elevator. It is typical of most elevators that have grown over the years as crop yields have increased.

13. The DeLong Farm Bureau CO-OP fertilizer plant is in the foreground and the elevator behind. The PRR standard signal is the approach signal for the crossing of the former Erie Lackawanna.

14. The Farm Bureau CO-OP is typical of many grain elevators in the Midwest, which starting as a single structure and expanded over the years as crop yields improved.

back to previous page of text ...

Overall I would say my philosophy is model what you love, and less is more. I like to keep it simple. Even a simple layout can keep you busy for years. As I said before, I love the rural Indiana country and I am still excited about the layout.

MRH: You answered my questions regrading your control system and your sound system. Could you tell us a little about your operating sessions?

Tom: There are times that I will begin an operating session switching Logansport and put my train together, then head north to Delong. I will stop the train under the stairway where it is hidden from view to simulate time and distance, and go do chores. I will come back later in the day or evening and finish the operating session. I also allow the engine to sit and idle by a country store while the crew goes inside to grab a snack and a bottle of pop. These operating practices help increase the size of the layout.

15. RI 507841 sits on the siding of the Farm Bureau CO-OP fertilizer facility waiting to be unloaded. Fertilizer and herbicides are a part of the farming industry and are used in large volumes in the Midwest.

16. The station at DeLong shows its heritage with the PRR Keystone station sign. L&IN now uses the station for maintenance-of-way storage. The port-a-john, spare crossing guard, and pallets along with numerous barrels complete the scene.

The trains are run slow, like a typical short line operating on less than ideal track. My train lengths average about five covered hoppers. Sometimes, I might only have one or two. Yes I do have other types of cars. I will spot a tank car at times for anhydrous unloading at my Farm Bureau CO-OP fertilizer facility.

MRH: A lot of readers who have seen your posts in the forum have made very positive comments about your weathering of

rolling stock. Do you have any tips that you could share with our readers?

Tom. I gave into the prototype weathering bug a while back. The key to making it look realistic is to follow photos. It really makes the weathering much easier. I also use photos, lots of photos, to get a good visual of how the prototype is weathered. Then I follow the same patterns for weathering the structures that I use on the layout. Then it becomes a mater of replicating what I see. The weathered equipment really adds to the scene as the train rumbles through it.

17. Grain hoppers wait at the DeLong Elevator for pickup, a scene typical during harvest in Indiana.

18. Mr. Jones and a customer enjoy the autumn weather and watch L&IN 29 approach. Their conversation will take a brief pause while the locomotive blows the horn for the road crossing.

MRH: Any final comments that you would like to share with our readers?

Tom: Many modelers, once they have built their layout, they are not all that happy with it. They will settle with what they have until they get totally fed up and tear the whole thing apart. Instead, don't be afraid to remove or renovate portions of your layout that you don't like. I have rebuilt several sections and permanently removed track and structures in others.

19. Looking east down the former EL main we see 29 continuing on its journey north towards Culver, IN and more switching. Harvest time means lots of business for the L&IN and overtime for the crews.

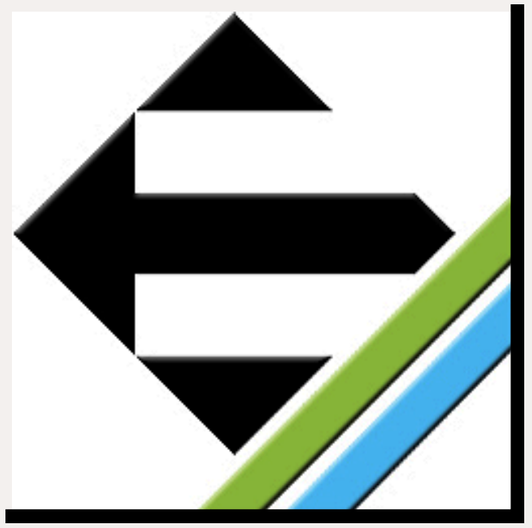
By removing some of the clutter it actually makes the layout better.

Finally, I really like the magazine and the way the MRH uses photos that really helps tell the story. MRH is also a great resource for finding things. I have been able to find a lot of the detail parts as well as other things I need through the magazine advertisers. It is really a great resource. I make sure that I tell the manufacturers I saw their product in MRH.

MRH: Tom, thank you for your time, it's been a great pleasure. Thanks for sharing your layout with our readers.

Rewinding time to 1980

Since the interview with Tom, he has been busy rewinding the layout time period back four or five years to 1980-81, before the L&IN/INRAIL was incorporated. Who operates the line?



The Erie Western. What is the Erie Western, you ask. The Erie Western was a short-lived company that operated the old Erie/Erie Lackawanna line in Indiana:

"The line I model is based on the old PRR South Bend Branch (Vandalia Branch) that ran from Logansport to South Bend serving the Studebaker plant there. The Erie/Erie Lackawanna crossed the former PRR branch that I model at Delong. For me it was a simple matter of having the EW take over operations of the line after Conrail ceased operations on the branch in 1979.

"I wanted to move my short line closer to a prototype while still freelancing just a bit by moving to the Erie Western. I want my motive roster to be made up of only five to eight locos. During the process of back-dating and acquiring new locomotives, it was a great time to make some major changes. I moved

from DC to DCC and sound-equipped locomotives. I really like the DCC control and sound now that I have been operating with it.

“As I continue to up-date (backdate) the layout I will keep the MRH readers posted with updates on my blog. Until then, have fun with the hobby.” ☑

20. EW 1602, a former CNW RS-3, and EW 25, a former PC transfer caboose, are waiting by the yard office in Logansport for the crews to arrive.

21. 1602 has just picked up a hopper from the DeLong elevator and is coupling it to the train. A quick run around of the train, air brake check, and it’s time to head back to Logansport.

22. Next page. 1602 is crossing Olson Road. as it pulls a hopper from the DeLong elevator. The line goes along the east edge of town. After crossing the railroad, drivers have many miles of country roads before arriving at the next small Indiana town.

Playback problems? Click to try a different version.

23. It's early evening and the crew has a few more miles to go before arriving in Logansport and calling it a day. Typical of many a rural crossing, there are no warning lights for the crossing so drivers need to be alert for the trains.

Tom Johnson grew up along the Nickel Plate in Plymouth, IN. The PRR main out of Chicago and the South Bend Branch (Vandalia Branch) were each about two blocks away. Tom's family held reunions in Delong, IN at his aunt and uncle's farm located beside the Erie Lackawanna and PRR South Bend Branch diamond. The interchange track literally ran right through the front yard.

Tom has been involved with model railroading most of his life. His first serious layout was published in *Railroad Model Craftsman* in November 1985 and was also the Logansport and Indiana Northern. Tom later tore it down and built his current layout, which was first published in the 2008 issue of *Great Model Railroads.* Tom has since made several changes and improvements. Tom's latest change has been to switch over to DCC and modeling the Erie Western which served the former Erie Lackawanna. Tom reports he's having lots of fun with this latest change!

Reader Feedback (click here)

Yes, it's a model

Model Railroad Hobbyist's monthly photo album

1. Forum member Bernhard posted photos of these 66' gondolas that he scratchbuilt and detailed. The cars were ordered in 1899. He found a scale drawing of the cars in "The American Railroad Freight Car" by John H. White, Jr. To see more of these cars visit his blog at mrhmag.com/blog/20899.

Reader Feedback (click here)

2. CP 8759 is on the point of a general freight heading east. The setting sun has slipped under the clouds, making the sky look more foreboding than it really is. Forum member Andrew (AnEntropyBubble) shared this photo. He also has started many of the Weekly Photo Fun postings.

3. It's 1938 and DRG&W 451 winds it way towards Durango on the Silverton Branch in Colorado. The crew has the train well in hand as they work at a leisurely pace. Bill Beverly took this photo on the Slim Gauge Guild Model RR Club in Pasadena, CA. The locomotive is a brass model from PBL and the cars are built from kits. Sn3 is the scale for these beautiful models (next page).


453
Rio Grande
453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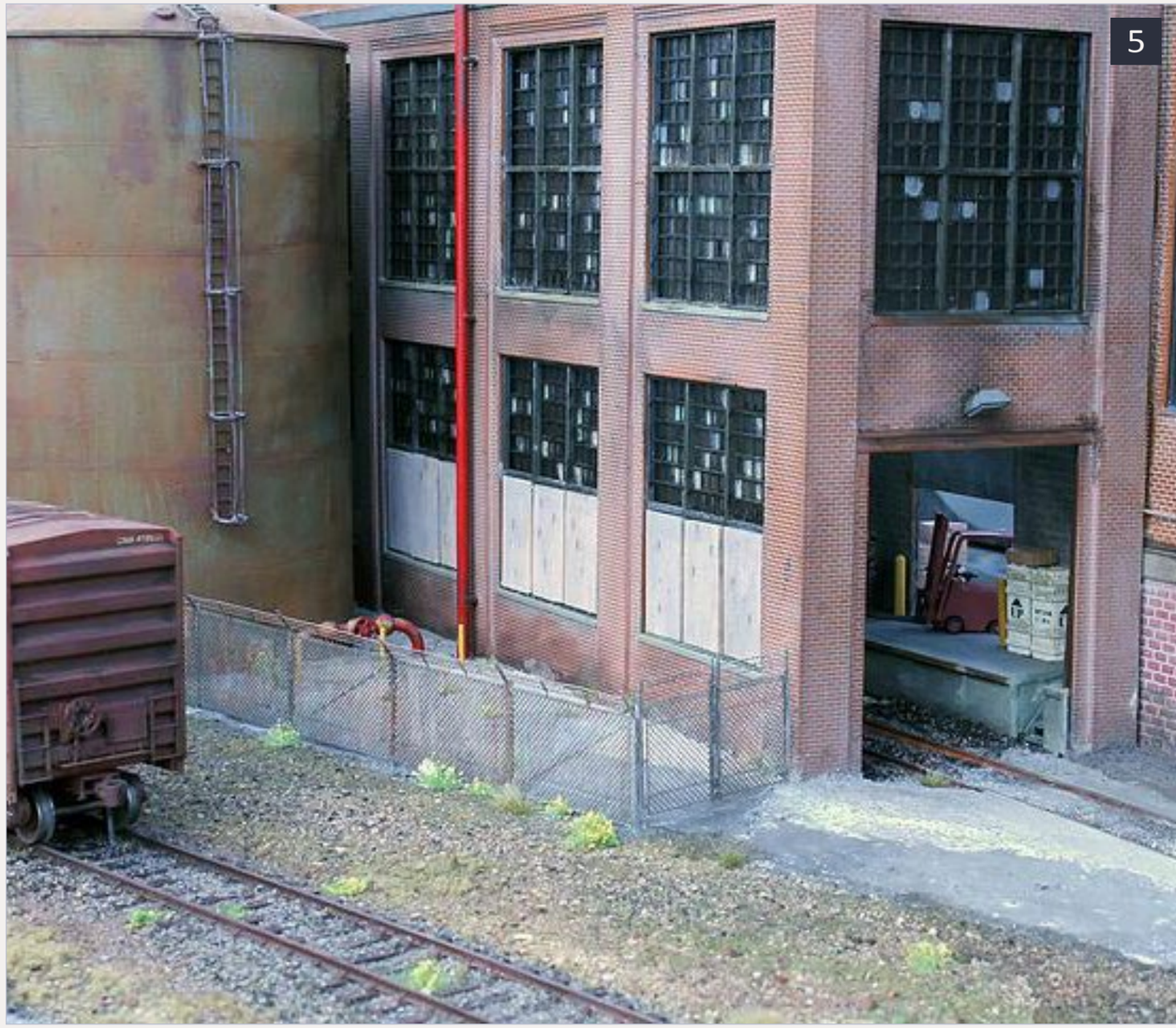
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4 - 5. A Railbox car is sitting on the siding waiting to be picked up with a load of furniture. The furniture is manufactured by Turko Brothers Fine Furniture. The attention to details in both pictures really makes the scene come alive. You almost feel as if you have seen this scene somewhere while railfanning. The photos were posted by forum member Sjuranics.

To see more of his work visit his blog at:
mrhmag.com/node/16678.

Reader Feedback
(click here)

6. The crew was not looking forward to consequences and attempting to explain the derailment of a BN hopper on their train. While contemplating their quandary, a giant hand came from nowhere and set the car back on the track. Should they let their boss know what happened? Would you?

Darren Larabee posted this fun photo on the MRH forum. The models and figures in front are O scale and the building and hopper cars in the background are HO. The use of the two scales forces the perspective, giving greater apparent depth to the picture.

Get your photo here!

Our *Yes, it's a model* monthly photo feature presents some of the most inspiring modeling and photos from the MRH website and other locations. If you'd like to get *your modeling* in our photo feature, just start posting your photos on the MRH website, especially in the Weekend Photo Fun thread created each weekend.

Many of the photos posted show HO modeling, but we encourage modelers in other scales to post on the MRH website as well. We don't want this to just be an HO photo feature!

For info on how to post photos to our website, **see this help how-to**. You need to be an MRH subscriber to post photos to our website, and becoming a subscriber is free, **just fill out this form here**.

All those windows and doors

So you can't find the correct windows or doors you need...

– By Richard Napper MMR
Model Photos by the author

Reader Feedback (click here)

I model the Frisco Railroad in HO scale. I found early on that all the structures for the Frisco use a six-over-six double-hung window not readily available in the model world. Besides, at the start of this, I was working toward my MMR. On the new structures judging form, under scratchbuilding, if you use commercial windows and doors, you automatically lose one-third of the total points for scratchbuilding. Under the new judging form, you can earn only a total of 15 points for scratch-building, and to my way of thinking, I could not afford to lose five of those points by using commercial windows and doors. Therefore, I concluded that I would have to build all the windows and doors for my Frisco structures.

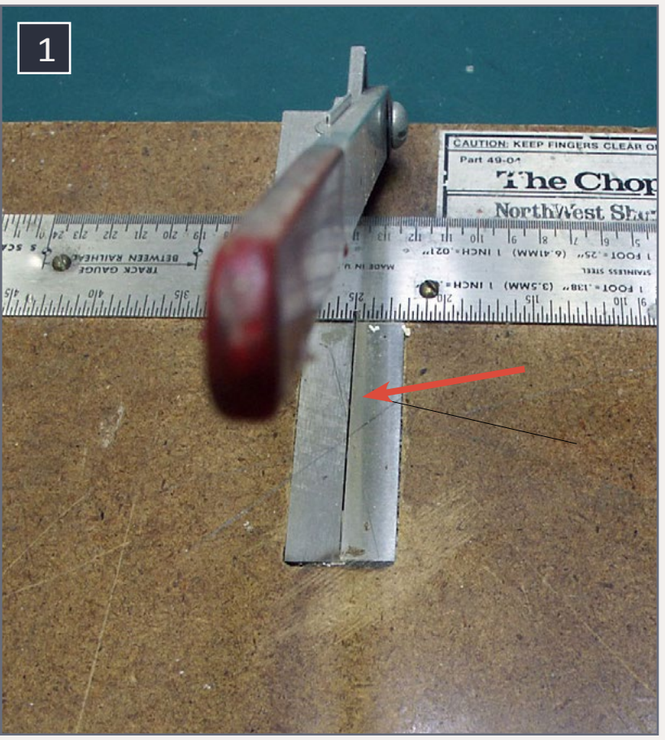
Improving the Chopper

I built all my structures from styrene. More years ago than I care to remember, I purchased the original Chopper from Northwest Short Line. I found out early on, that the hardboard (Masonite) base of the Chopper I does not hold up very well. After only one short project the base of the Chopper was ruined.

So in order to continue to use the Chopper, I would have to modify it. The picture below shows my modified Chopper.

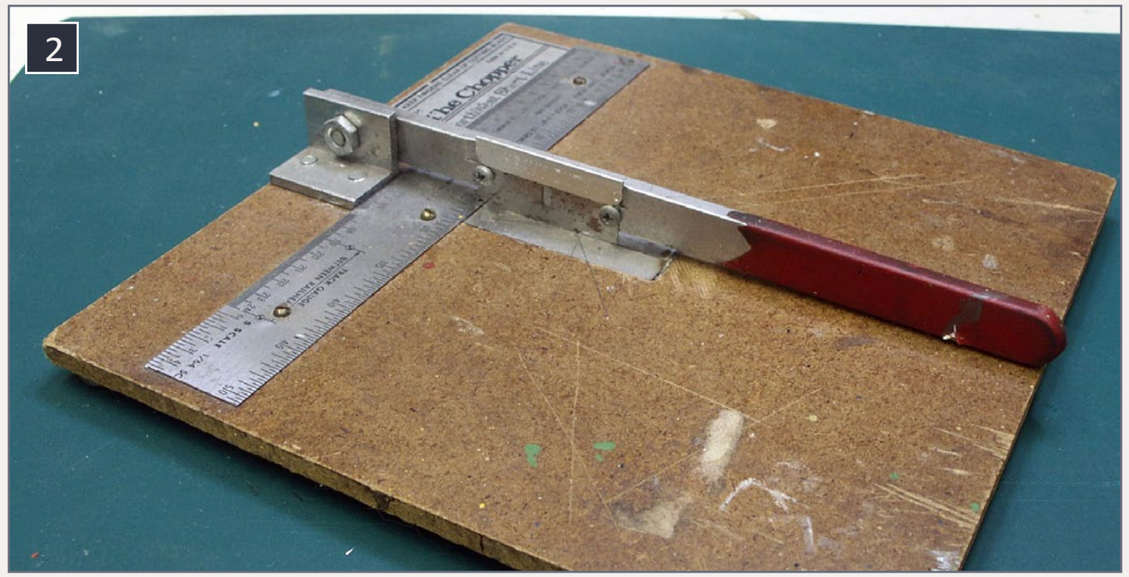
I do not remember where I got the idea for the modifications to the Chopper. But this is what I did: I purchased two square pieces of tool steel. I think they are 5/16” square, but any size will do. Any tool supply house should be able to furnish them. I got mine from McMaster–Carr in Chicago. The below photograph shows a closeup of the modifications that I made to the Chopper.

I mounted a General stainless steel HO scale ruler onto the base of the Chopper. Notice that I put a small slit in the ruler at the 25’ mark (black arrow above) so the razor blade would cut the material at that exact spot. It lines up perfectly with the slot between the two pieces of tool steel.



1. This is my Chopper that I modified. Two pieces of tool steel were placed on either side of the blade, creating a slot for the blade to rest in.

I super-glued two small pieces of .010 “ styrene between the two pieces of tool steel, thus creating the small slit for the razor blade when closed. Notice that the two pieces of tool steel with a slot are mounted up under the ruler. I used my Dremel tool to cut out the Chopper base. Be sure that the cutout is perfectly perpendicular to the ruler, and that the chopper razor blade falls into the slot between the two pieces of steel when closed. When



2. Here is my Chopper in the closed position. The slot created between the lengths of tool steel allows the blade to pass completely through the material being cut.

everything was correctly aligned, I used five-minute epoxy to secure the steel pieces to the base, making sure that they were flush with the top of the base. Since this causes the steel to protrude below the base, I epoxied four steel nuts to the bottom of the base, so the base would sit level again.

Since the cutting edge of the razor blade is now between the edges of the tool steel, I no longer have any problem with the base material wearing out as I use the tool. My modified Chopper tool has served me very well over the last 30 years, and shows no sign of deterioration.

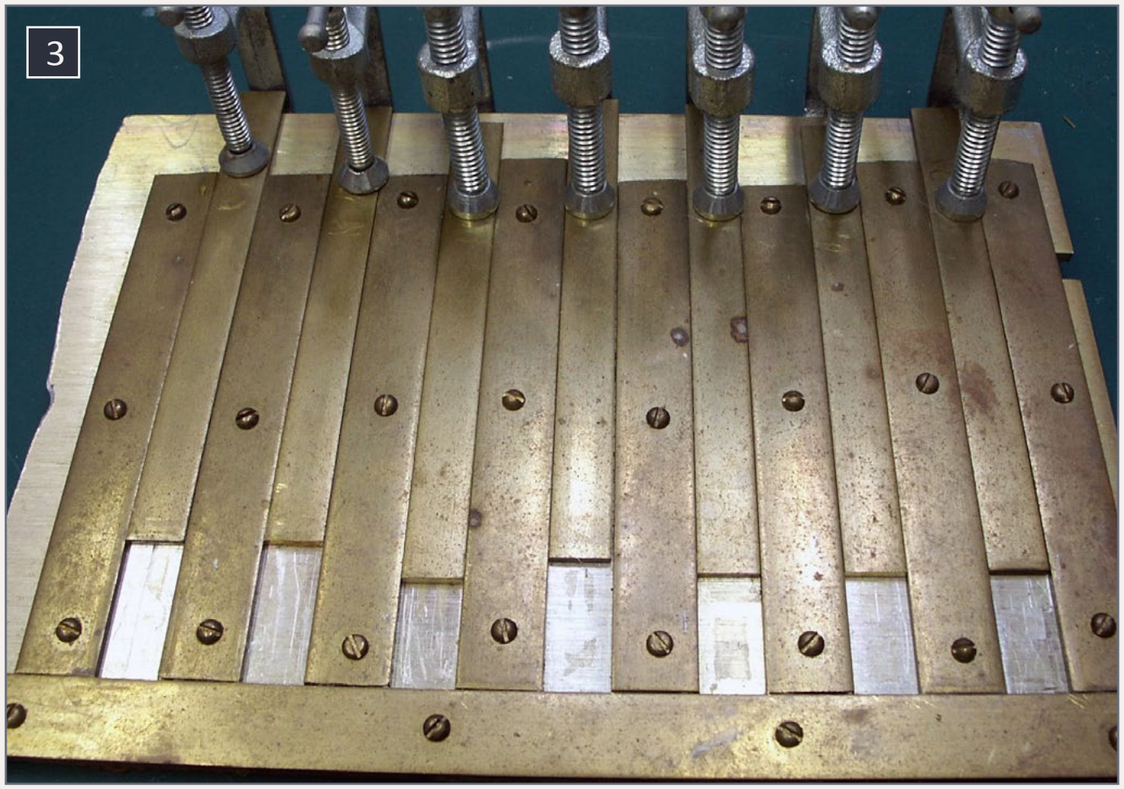
Making the jigs

Next I had to determine how to make jigs so I could construct all my windows and doors in them, and they would turn out square and true. I wanted to be able to make different sizes of doors and windows using these jigs in such a way that the

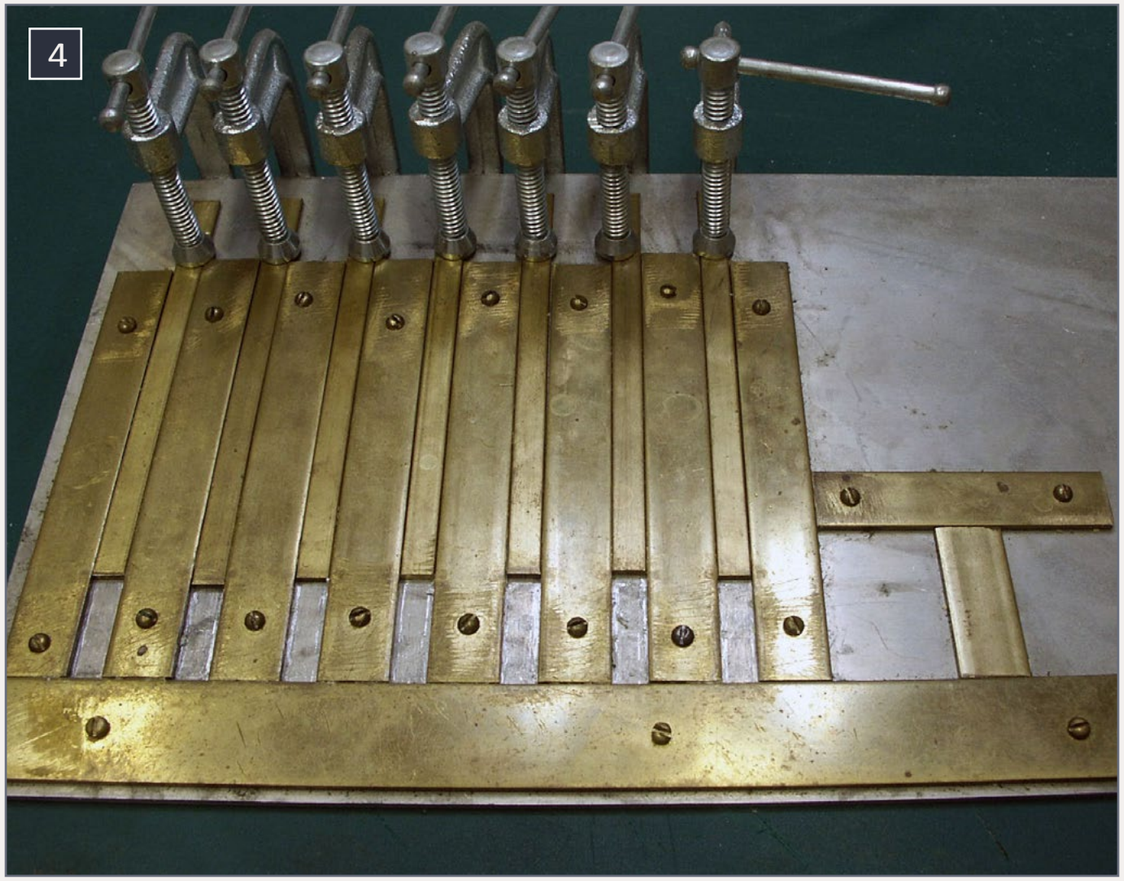
frame was also constructed around the door and window at the time of construction.

In HO scale, a 2’-wide window is almost exactly 1/4”, while 3/8” is just slightly less than 3’, and 1/2” is slightly less than 4’. The slight discrepancies are of no real concern because all the windows and doors will be built in the same jig, and thus will be the same size. No one will ever know that the windows and doors are not the exact size.

I purchased all of my brass in 0.064” thickness from K & S. The only size they did not have readily available was 3/8”, which I purchased from Custom Shapes. I purchased brass in 1/4”, 3/8”, 1/2”, 3/4”, 1”, and 2” widths. The 3/4” width translates



3. This is my 1/2” jig for making 4’ windows or doors. I can build up to seven windows or doors at a time with this jig.



4. This is my 2’ window jig. As with my other jig I can make up to seven windows at a time. The jigs are made so that I can adjust the height of the windows as I need for the structure that I am working on.

into 5-1/2” in HO scale. The 1” width translates into just over 7’ in HO scale. The 2” with piece translates into just under 15’ in HO scale. If you add together the 1” and the 3/8” pieces they translate into exactly 10’ in HO scale. The larger width pieces can be used to make such things as a double, double-hung window, or perhaps for six double-hung windows next to each other for use in an interlocking tower. Now I’ll explain how I construct my jigs.

For the base I use 1/8 “-thick aluminum. These are usually cut from what is called a rack panel. A rack panel is always 19”

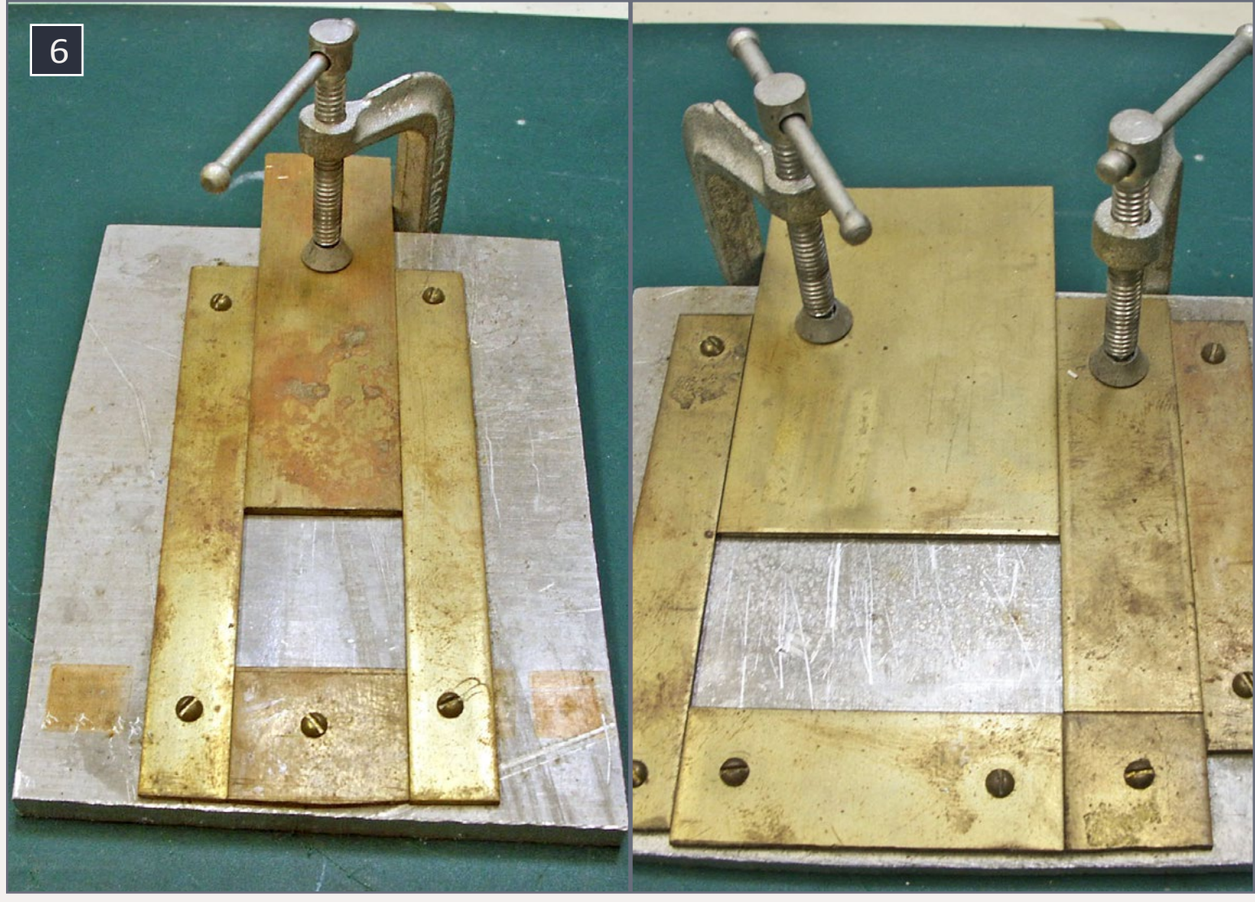
wide, and varies in height; the ones I have are usually 5-1/4 “ tall. You can purchase a rack panel from any electronics supply house, such as Allied Electronics.

You don’t have to use rack panels, but they are a handy source of aluminum. I use pieces 1/2”-wide and 0.064” thick brass to build the jig frame. I drill and tap through these pieces of brass and screw them to the aluminum base with 2-56 brass screws. As you can see in the above photo, I place sliding pieces of brass between the pieces I screwed down to the base. Using small C-clamps, I can adjust the height of the window or door I am making in the jig.

5. With this jig, the width of the window, or door is not limited as the other jigs. By arranging the pieces different widths can be made.

It is extremely important that the ends of the vertical brass pieces are perfectly square with the base piece running horizontally along the base of the aluminum. This ensures that the pieces that have been screwed down are perpendicular to the one horizontal piece, and therefore the sliding pieces will make a perfectly square window or door. I got the small C-clamps at my local hobby shop, or you can get them from Walthers.

Since I make most of the windows and doors using 1/4”, 3/8”, and



6. Here are my 1” and 2” jigs that are used for making large doors or very large windows.

1/2”, I have constructed jigs with multiple pieces of these various sizes. I have a jig with 3/4”, 1”, and 2” brass pieces. These are used to make such things as freight doors for depots.

As you can see, I also have made jigs with multiple-width pieces; these allow me to combine various width pieces of brass to vary the size of the opening I am building my door or window in.

I use the multiple same-width jigs the most, because my structures usually require many windows and/or doors. For example, my interlocking tower required 22 windows and two doors. I make all of them before I start construction of the structure. Using styrene structural shapes, each door or window costs about 15 cents.

Material stock

I try to keep in stock 10 packages each of the following Evergreen dimensional lumber and shapes.

Material stock kept on hand

#8102 1” x 2”	#8408 4” x 8”
#8103 1” x 3”	#8410 4” x 10”
#8104 1” x 4”	#8412 4” x 12”
#8106 1” x 6”	#8606 6” x 6”
#8108 1” x 8”	#8608 6” x 8”
#8110 1” x 10”	#8610 6” x 10”
#8112 1” x 12”	#8612 6” x 12”
#8202 2” x 2 “	#186 1/8” x 1/8”
#8203 2” x 3”	#291 0.060” Right Angle
#8204 2” x 4”	#292 0.080” Right Angle
#8206 2” x 6”	#293 0.100” Right Angle
#8208 2” x 8”	I also keep in stock Plain Styrene Sheet Stock in 0.010”, 0.015”, 0.020”, 0.030”, 0.040”, 0.060”, and 0.080” thicknesses.
#8210 2” x 10”	
#8212 2” x 12”	
#8404 4” x 4”	
#8406 4” x 6”	

7. Here are some examples of windows and doors that I made using the jigs. They still need to be cleaned up.

8. I have a glue station that I store my Tenax-7r and MEK bottles in. By having a large recessed stand to put them in the chances of knocking one over is greatly reduced.

Glue

For glue, I use Tenax-7R and MEK, (Methyl-Ethyl-Ketone). MEK is the same as Testors’ Liquid cement, but I purchase it by the gallon at a paint store.

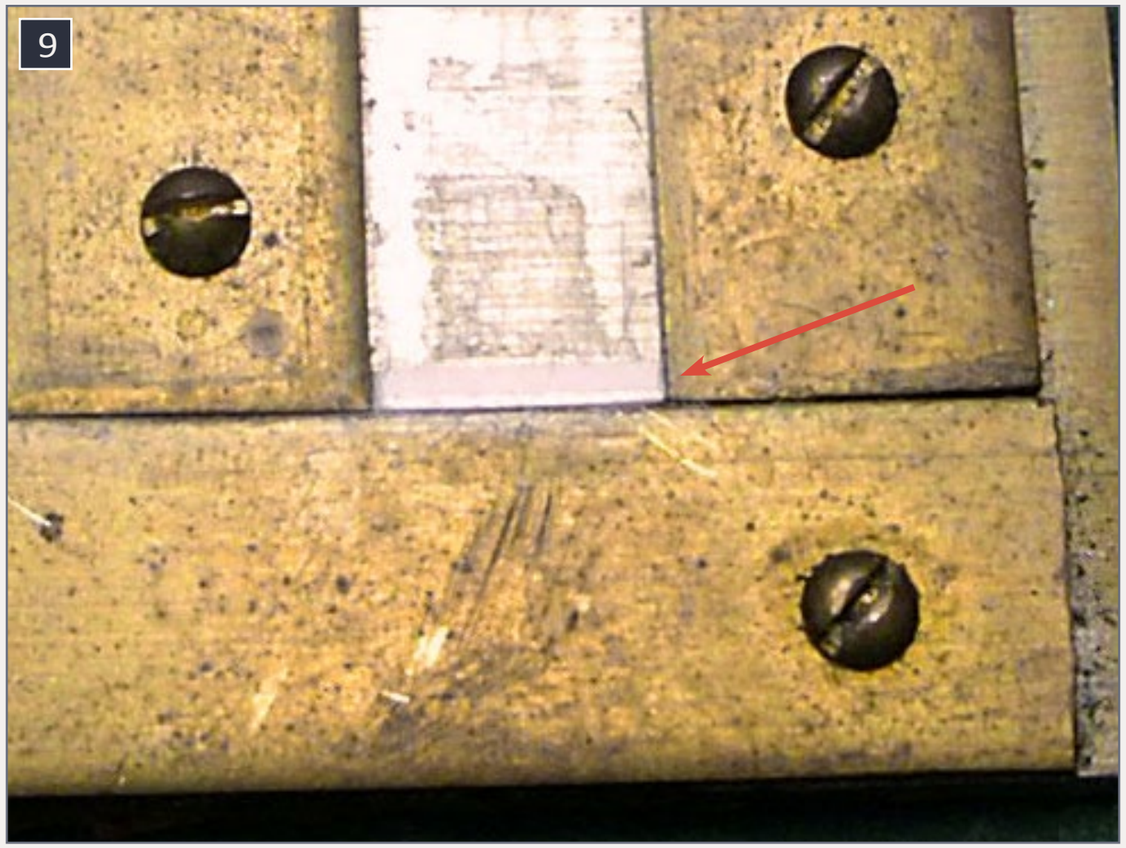
For building structures, I also keep in stock Evergreen’s clapboard, drop-siding, and board-and-batten styrene sheets.

Let’s start by building a double-hung window.

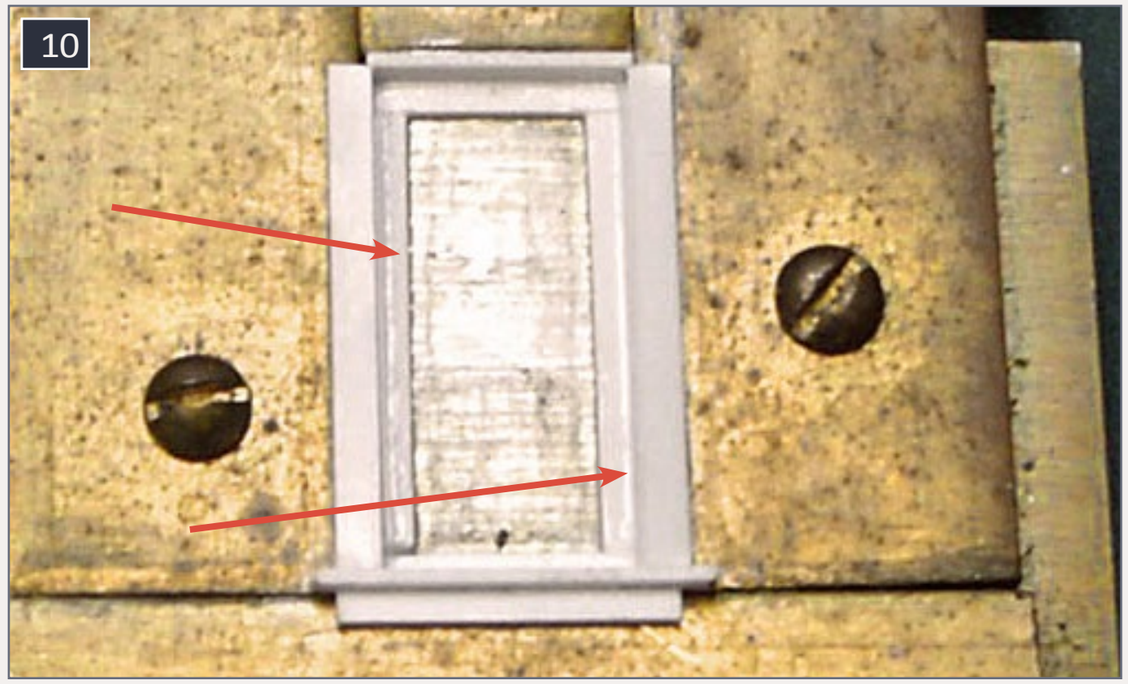
Open a package of Evergreen styrene #8206, which is HO scale 2” x 6” lumber. Eyeball-measure two pieces and mark them with a pencil. Cut them in the modified Chopper, and place them vertically at the top and

bottom of the window opening in the jig, as shown above. Notice that when you place the pieces in the jig vertically, they come up even with the surface of the brass strip; this is why I specified that you use only 0.064”-thick brass strips in the jigs. When using the Chopper, place the pencil mark on your piece of styrene over the slot in the tool steel, and cut the piece to length.

Now open a package of Evergreen #8204 2” x 4” scale lumber, and cut two pieces the same length as the 6x6s. Place them on-edge on top of the 2x6 and glue them to the 2x6, using MEK and a paint brush.



9. Begin by placing 2” x 6” pieces in the jig. The arrow is pointing at the header.

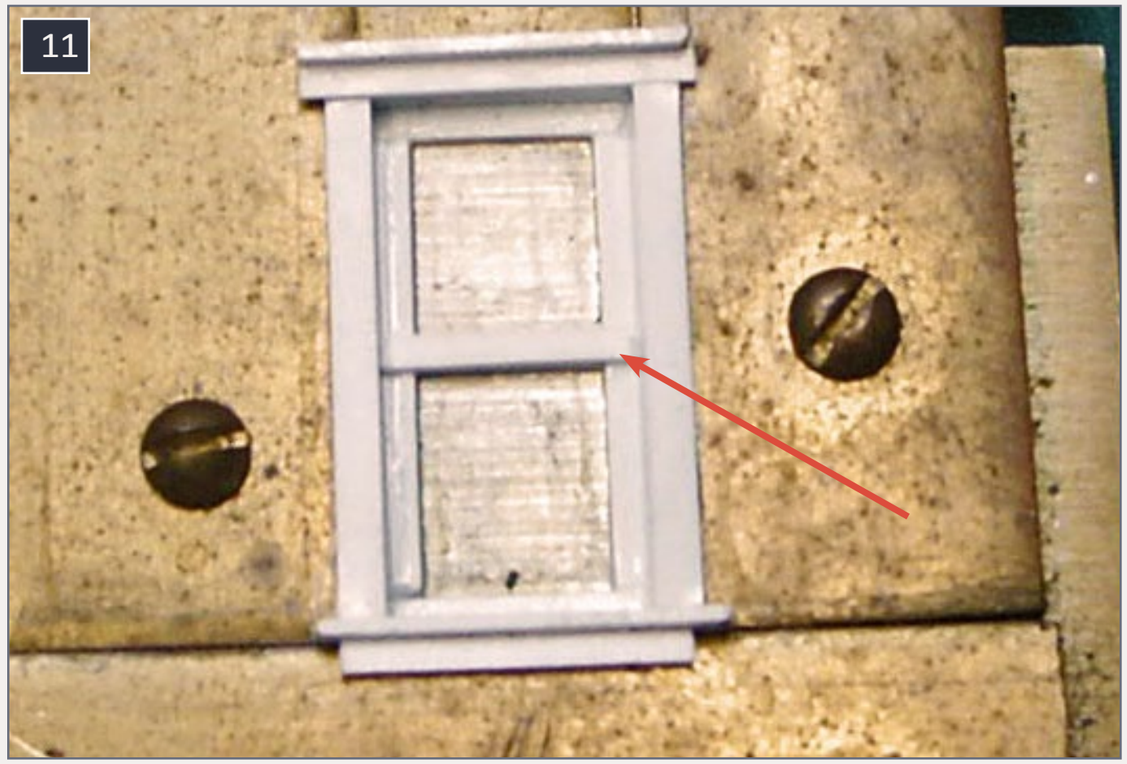


10. Here the window frame is almost complete, just needing the header. The side rails of the window are also in place. The arrows are point to the sides of the window.

I keep Tenax-7R, MEK, and styrene putty in clean, old Floquil paint bottles in holes bored into a block of aluminum on my workbench. I also store two paintbrushes in the block. To make this styrene putty, fill a paint bottle halfway up with MEK. Next add scraps of styrene to the bottle. The MEK will turn this styrene into styrene putty, which you can use to patch or fill any defects in your styrene structures. The beauty of this method is that styrene binds perfectly to styrene and does not shrink, allowing you to file or shape the patch, and then paint it.

In [8] you can see the bottle of MEK, the bottle of styrene putty, and the bottle of Tenax-7R in the aluminum block with two paintbrushes.

Using two 2” x 6” pieces of lumber, place them in the jig and glue them to the other pieces with MEK.



11. The center sill is added finishing the double-hung window.

Lay two pieces of Evergreen #291 Right Angle vertically in the jig on both sides, and glue them to the other pieces with MEK. Notice that the two right-angle pieces fit between the first two vertical pieces you put in the jig.

Cut a piece of 2x4 slightly longer than the distance between the two right-angle pieces, and glue it vertically in the jig at the bottom of the window; this is the window sill.

Glue another piece of 2x4 into the jig below the window sill; this piece is cut to the width of the window, even with the two right-angle pieces. This completes the lower part of the window frame.

A comment: By using the #291 right-angle pieces over the vertical 2x6 pieces in the jig, the window frame becomes all 2x4s.

Also, the side pieces are thinner. Again cut a 2x4 slightly longer than the distance between the two angle pieces, and glue it lying down in the jig at the top.

Glue another 2x4, cut long, vertically at the top of the window. The window frame is now complete.

Now we will finish the double-hung window. Again using a 2x4, cut it to fit, and place it in the center of the window; glue in place using MEK.

Glue another 2x4 over the piece you just installed, but be sure it is the full width of the window.

Glue a similar piece at the top of the window.

Glue two 2x4 pieces vertically on the top window. This completes the second of the double-hung windows inside the window frame.

You have now finished one double-hung window. Notice that the top window is outside the bottom window, just as it is on a real double-hung window. If you think about it, it's very easy to build this window with the bottom window open; you even can open the top window.

For window glass is use Microscale Kristal Klear; I like it because it puts the window glass in the window, not in front or behind it.

This is just one example of the kinds of windows you can build in these jigs. Your windows can be single-pane, or divided-light. All windows in Frisco depots were divided-light, 6-over-6 double-hung windows. These are made the same way, except you use 1x2s and 2x2s on edge to make the divided lights. These are difficult but not impossible to make;

I have to make such windows only two feet wide using my ¼" jig for the Frisco depot!

Making a simple door

Now let's make a simple panel door. You start out exactly the same way you did when making the window, using 2x6 pieces. Put them in the top and bottom of the jig to start the door frame.

The actual door is a piece of 0.020" plain styrene. Cut to fit and install in the jig.

Using Evergreen #291 Right Angle, measure the distance

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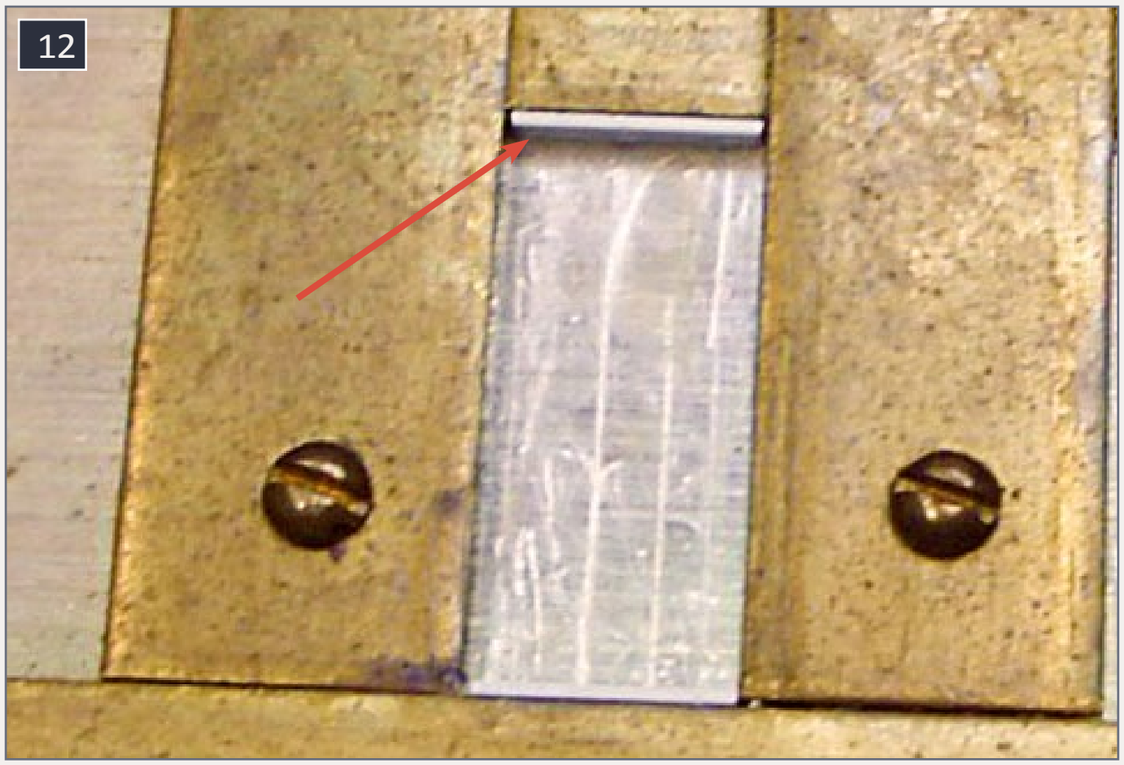
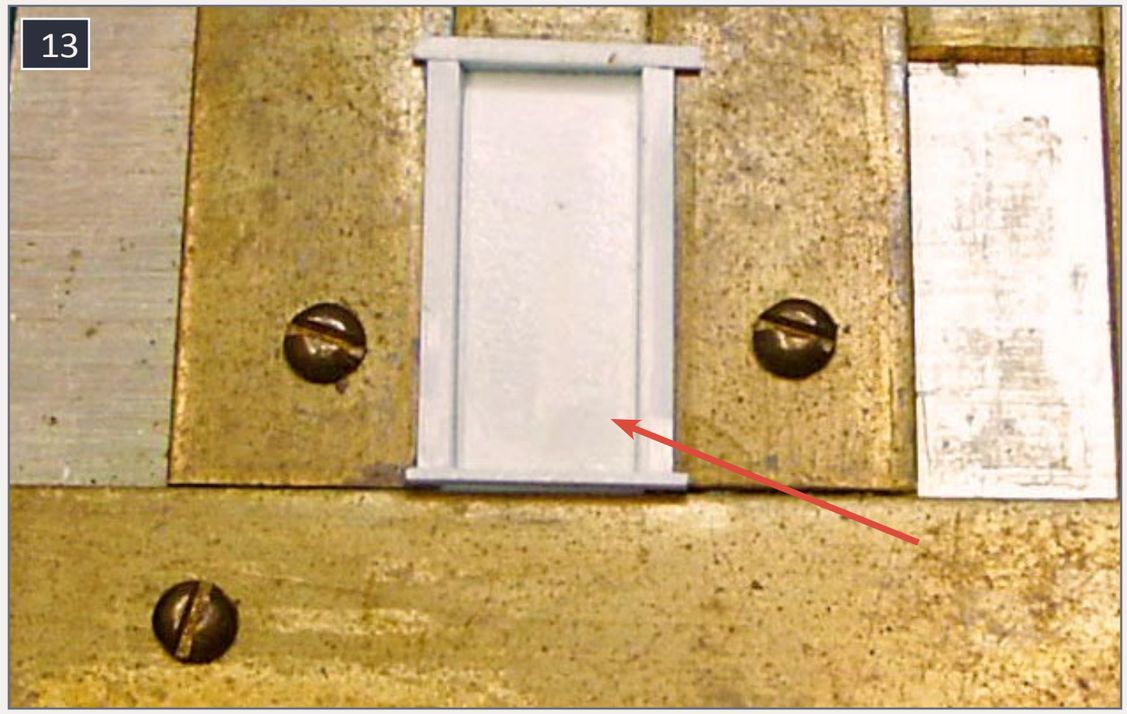
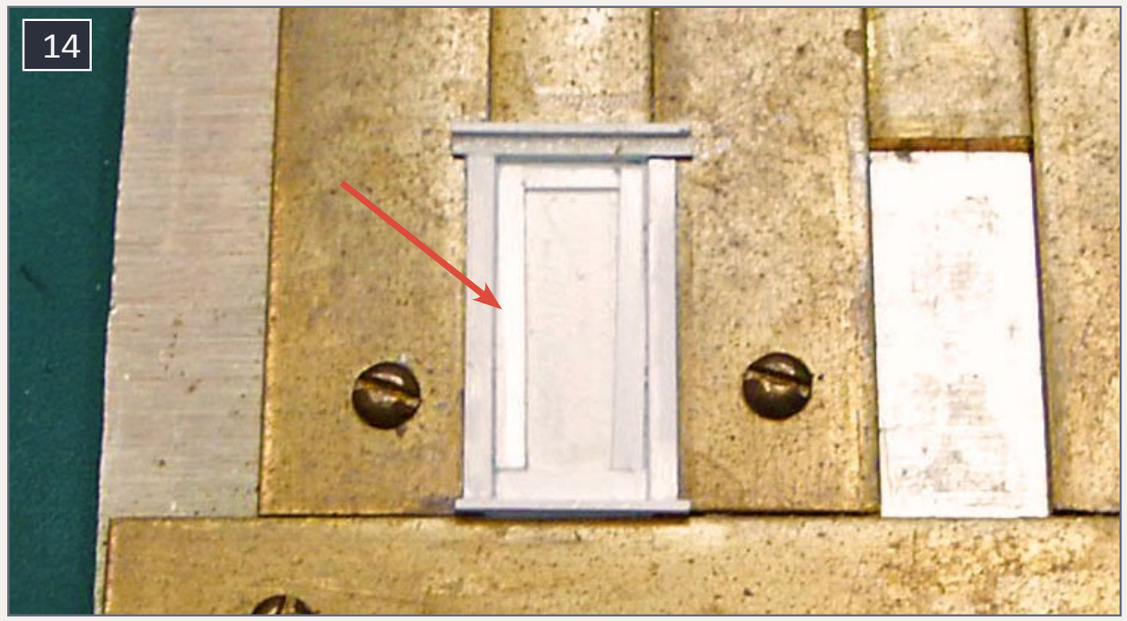


12. Begin by placing a 2 x 6 in the jig, the same as with the windows.



13. The door frame is complete. The door is a piece of .020" plain styrene cut to size.



14. The door is being built in the door frame. The door stiles have been added, but the bottom rail still needs to be added.

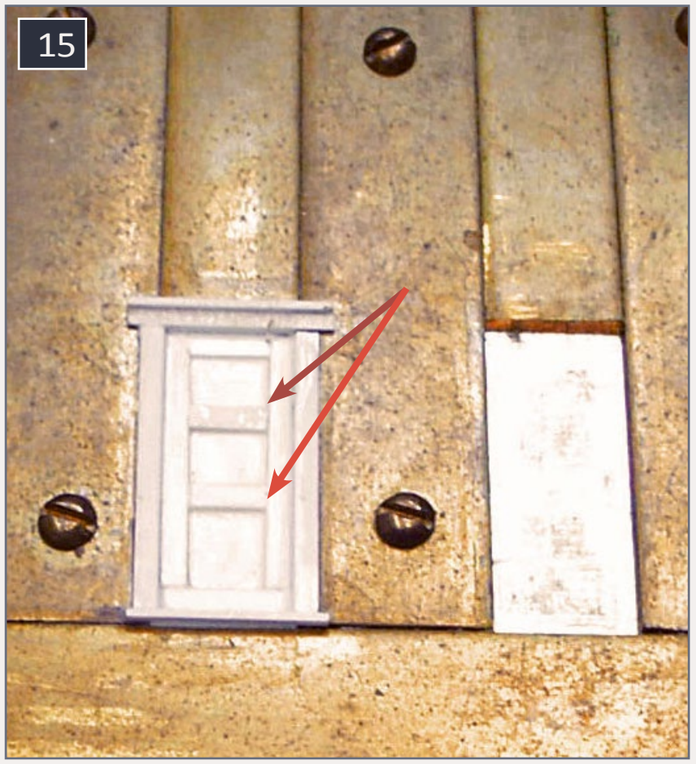
← back to previous page of text ...

between the upper and lower door frame; glue the right-angle pieces in the frame on the left and right side of the door. Here again, I used MEK.

Using a piece of 2x4, install the door's threshold at the bottom of the jig; there is no piece below the threshold.

Again using pieces of 2x4, install the rest of the frame above the door. Note again that these pieces are cut a little long.

The door frame is now finished; we shall now finish the actual panel door. Using a 2x8 piece, cut it and insert at the bottom of the door; this is usually referred to as a "door kick". Since all the pieces are made of white styrene, the door kick is a little hard to see in the photo, but trust me, it's there.



15. The rest of the door rails have been added creating the three panels needed for the door.

All the rest of the pieces for the door frame will be 2x6s. Install the two vertical door pieces inside the door frame.

I made this a three-panel door by adding three more pieces of 2x6. The door is now finished. I add a straight pin for a doorknob when I install it in the structure.

Using various jigs, you can construct any kind of door you want. For example, you can build a panel door with a glass top panel, as many doors are in homes. You can build a transom above the door. When building depots, I can build a 10'-wide freight door in another jig. You could build a double door if you wanted to install it in a business structure.

Let me add that these jigs are not scale-specific, I have been using them to build HO scale windows and doors, but they can be used in any scale. You could build in S scale or O scale by using the larger jigs. You can even build in G scale. However, only the smallest of these jigs would be useful in N scale.

Making stairs

Now let's take a look at a very special jig in which I build staircases. Many, but not all, stairs are built on a 41° angle. I used 3'-long pieces of 4x8s. The steps are made from 3 1/2'-long pieces of 2x10s.

How many steps are you going to need? Cut that many 3'-long pieces of 4x8 styrene. Stack the pieces horizontally on the base piece of brass, butted up against the 41° piece of brass. This time I used Tenax-7R for the steps; use it liberally to bond these pieces together to make the step treads.

The effect will be as follows: by butting the pieces up against the 41° angle brass you are creating both stair stringers at the same time.

Remember – use lots of Tenax-7R; this is no place to skimp on glue. Let the stair stringers dry for 24 hours. Now measure over 1-1/2' and make two marks at the top and bottom of the stringers. Line up your ruler and cut the stringers in half, cut slowly so the stringers come apart without the individual pieces breaking loose. You now

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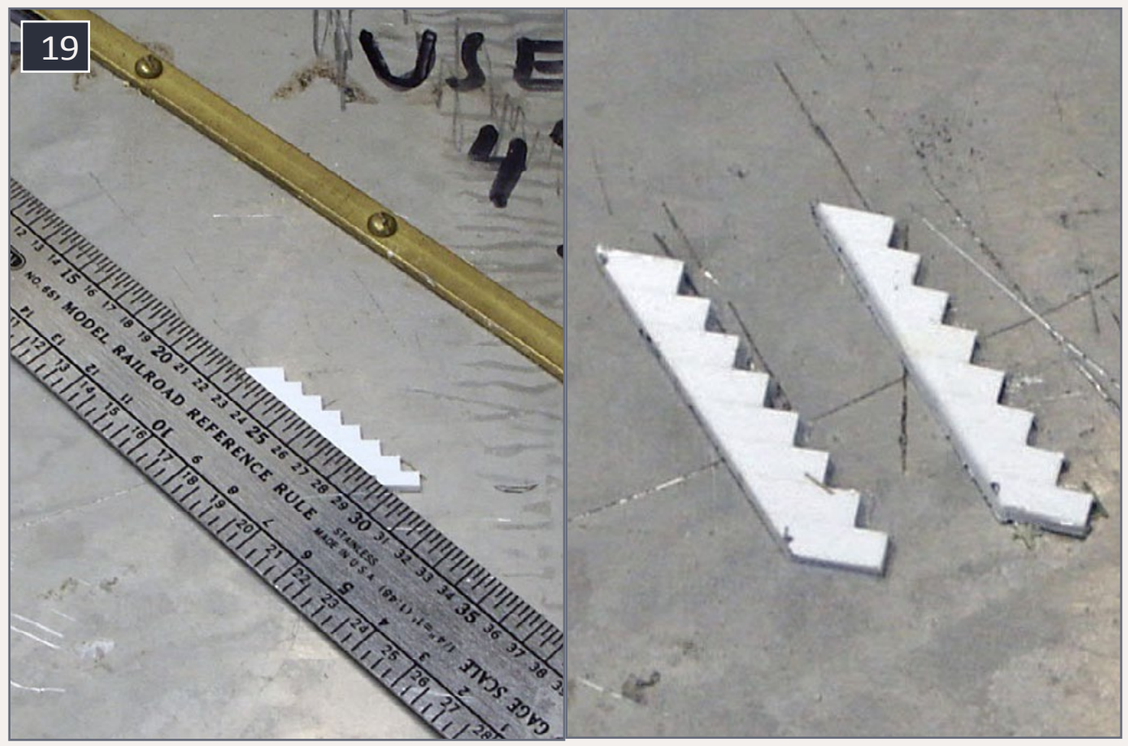
16. I made this jig for building stairs. The jig is at 41° typical of many stairs. I also made notes on the base so I wouldn't have to remember the sizes needed every time I made steps.

17. 4 x 8's are stacked against the edge of the jig until I have the desired height for the stairs.

18. After all of the 4 x 8's have been cemented together this is what it should look like.



19. The 4 x 8's are cut down the center creating the two stringers required for a set of stairs.

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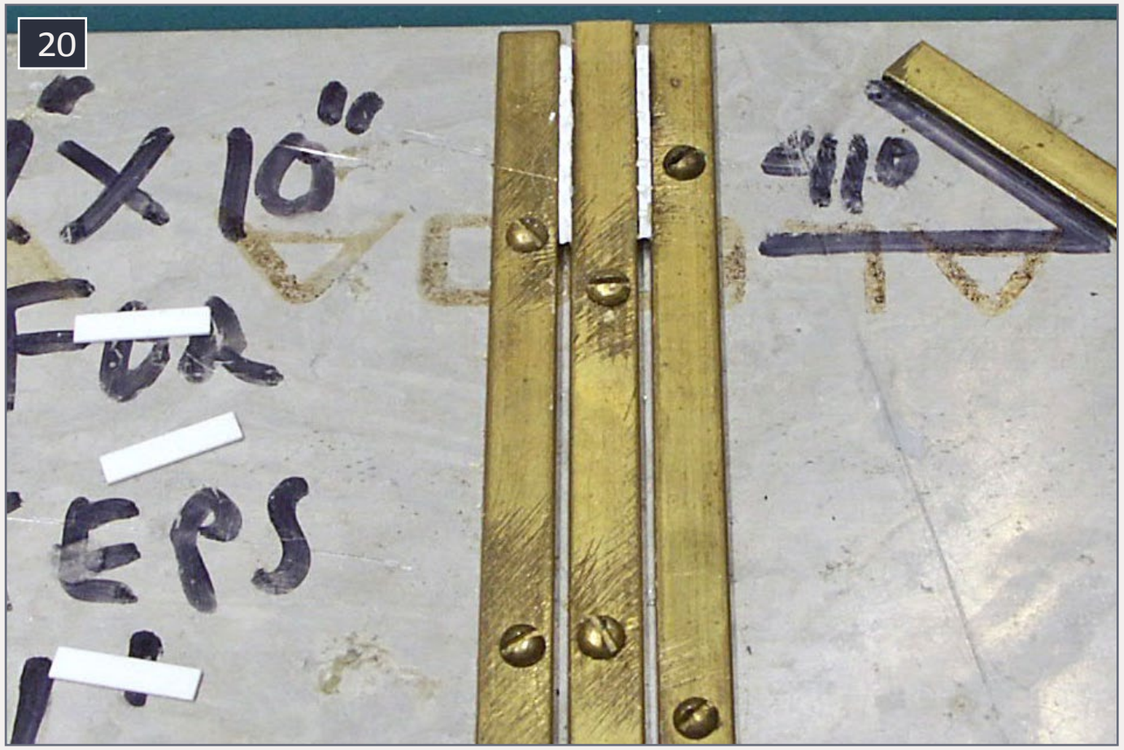
have both stair stringers for your steps.

Now we will use the second half of the stair jig. Mount the two step stringers, parallel to each other, in the two slots on the left side of the jig. Make your steps out of 2x10's.

Again using Tenax-7R, bond your steps to the stringers. Again let dry for 24 hours before removing your new steps from the jig.

Here are your new steps. Using this jig you can make stairways as long or as short as needed.

I hope you see how versatile my jigs are for making steps, windows, and doors. Some people will be critical of the piece sizes I use, thinking they are too thick, but I have never been criticized for doing so on my finished structures. Have fun, and remember the Frisco! ☑

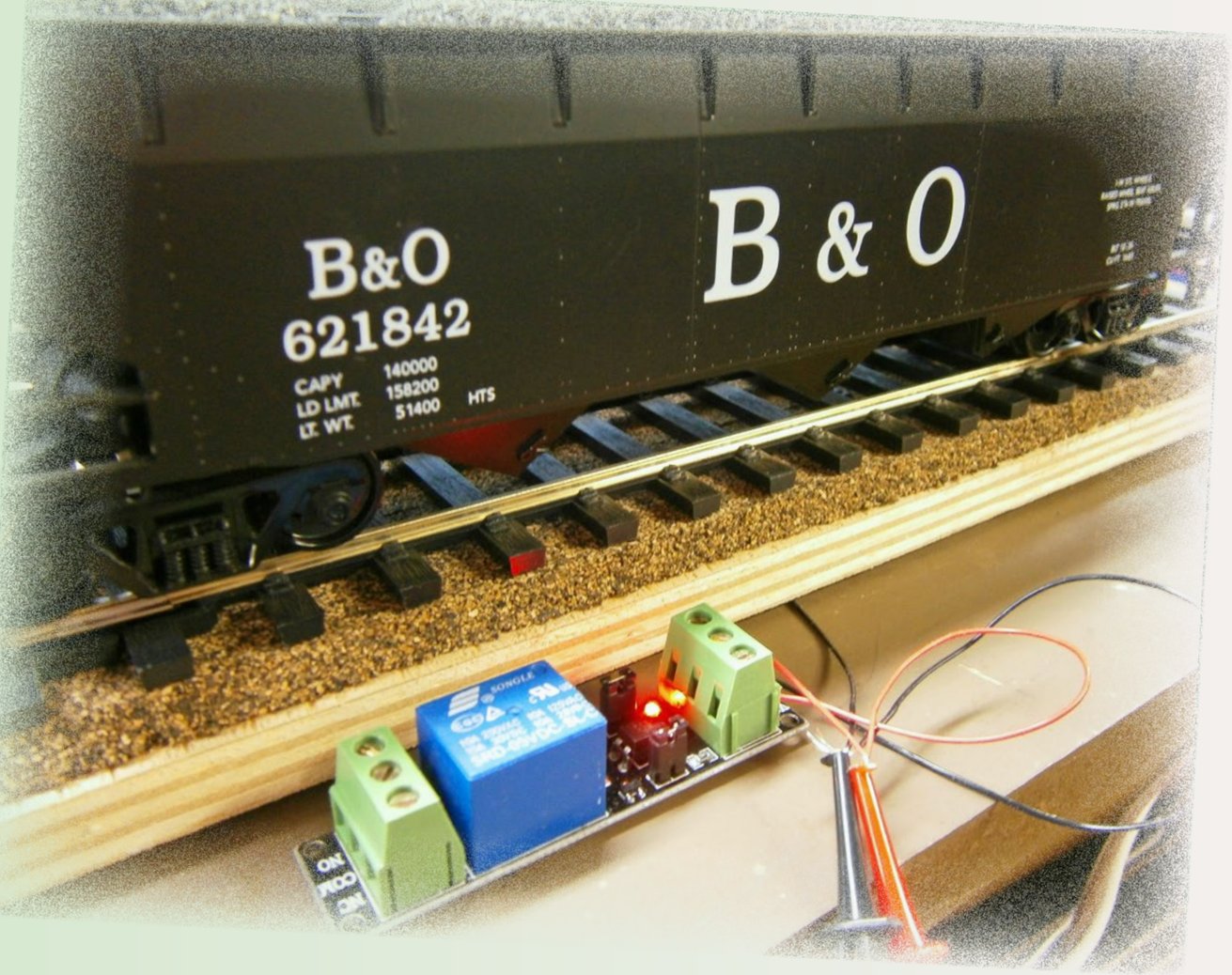


20. Part of the stair jig is this section I made to hold the stringers while the treads are cemented to them. This fixture is a must, as it is almost impossible to cement the treads to the stringers without it.

21. The finished stairs. A little clean-up and painting, and they are ready to be added to the structure.

Sadly, Richard Napper passed away in March of 2013. Richard had been a model railroader for about 50 years, modeling the Frisco, Missouri Kansas and Texas, Missouri Pacific, and the Chicago Rock Island and Pacific. Richard was a life member of the National Model Railroad Association, Mid-Continent Region, Kansas Central Division. Richard is greatly missed by those who knew him, and MRH is pleased to remember Richard by publishing this article from him sent shortly before he passed.

Reader Feedback (click here)



OPTICAL TRAIN DETECTION

Build a detector for $10

– By Terry Terrance
Model photos by the author

Build a detector by interconnecting pre-assembled modules ...

Reader Feedback (click here)

Being able to detect trains and rolling stock is necessary to implement automated control systems and prototypical signaling on your model railroad.

The cost and complexity of train detection deters many model railroaders from having a functional block signaling system, which should be a part of most mainline railroads. The trade-offs involved in choosing and designing a signaling system are often treated as a form of ”black art”, reserved for the adepts or the advanced modelers; but it need not be so.

Types of detectors

When I was designing my model railroad I spent a considerable amount of time determining how I would eventually signal the railroad. One key differentiating feature between signaling systems is how the trains are detected.

Detectors fall into two broad categories – electrical and optical. Electrical detectors come in many different configurations but all of them rely on detecting the flow of current between the rails.

Powered locomotives and lighted cars are readily detected because the motors have windings and the bulbs have filaments that allow current to flow across the rails. But electrical detectors cannot detect common rolling stock unless these cars are modified with special wheelsets that allow a small amount of current to flow between the rails.

Some of the electrical detector designs require that the current to the train pass through an electrical component in the detector circuit, typically a diode. That diode by its very nature causes a voltage drop in the block where the detector is installed.

Additionally, the diode must be sized to carry the full current available on the rails which, if you are in the larger scales or have a 10 amp DCC system, requires a pair of large diodes in

each detector. Most electrical detectors require that you make additional connections in the wiring to the rails, each one of which is a potential source of trouble.

Some electrical detectors will work with AC and some won't. Some will work with DCC and some won't. While we're talking about DCC, all electrical detectors require that the railroad be segmented into blocks. This isn't so much of a problem if you are already running DC, but it defeats the otherwise simplified wiring associated with DCC and requires the same amount of wiring complexity as DC.

Optical detectors, on the other hand, have certain advantages. Optical detectors will detect all rolling stock – powered or unpowered – without modification to the models.

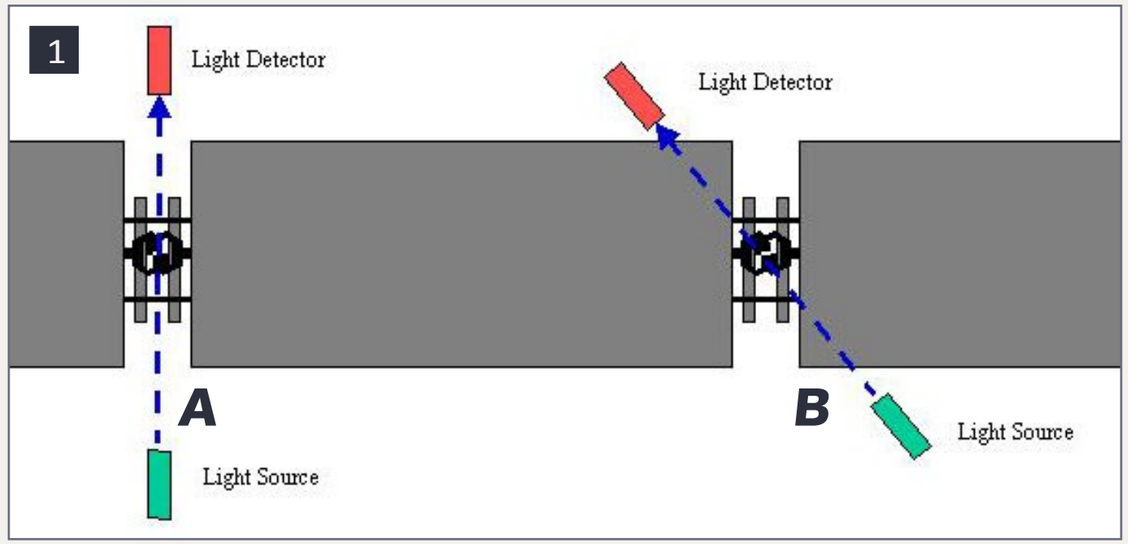
Because optical detectors are independent of the rails, they will work with AC, DC, DCC, MTH's Protosound, Lionel's Legacy & Trainmaster, 2-rail or 3-rail, even with catenary systems. Also, since the system does not detect the propulsion current you could be running a Z scale system at less than an amp or a large scale railroad at tens of amps – it makes no difference.

Since optical detectors have no connection to the rails, they cannot introduce any maintenance trouble spots or interfere with the operation of the trains. Finally, segmenting a DCC railroad into electrical blocks is not necessary and the simplicity of DCC wiring is maintained.

Optical detectors are not perfect however; and to understand their quirks we need to look at the three types of optical train detectors.

Types of optical detectors

Interrupter: I'll start with the type of optical detector that I'll call an "Interrupter", a light source (lamp, visible or Infrared



1. The "Interrupter" Optical Train Detector.

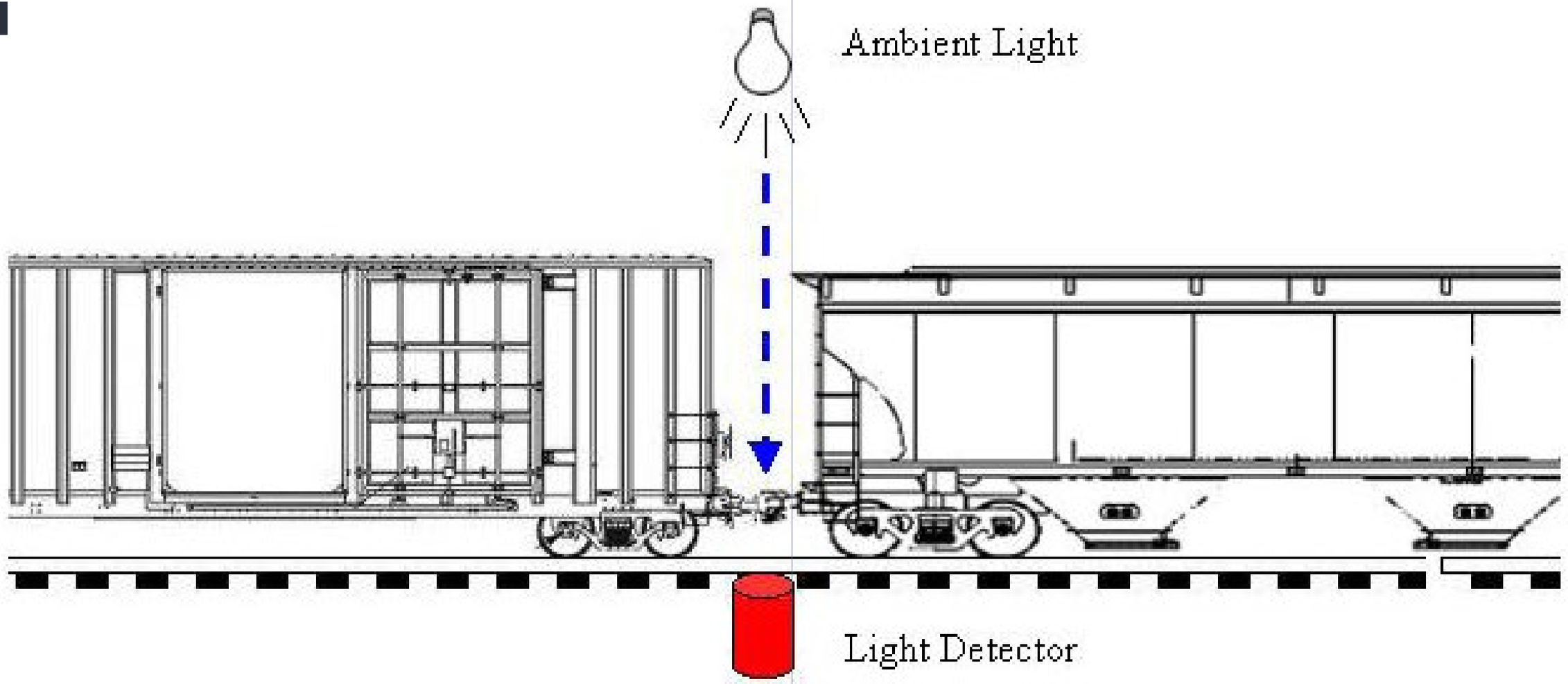
LED) is aimed across the rails. On the opposite side of the tracks from the light source is some form of photo detector (photovoltaic cell, photo-resistive cell, photodiode or photo transistor).

When the train comes along it breaks the beam between the light source and the detector and the train's presence is detected. Don't be put off by the technical terms within the parenthesis above; the key concepts are: light source, light detector and breaking the beam.

You can see the principles illustrated in [1]. In [1-A] the light source shines perpendicularly across the rails and is received at the light detector. The train comes along and breaks the beam, which results in the train being detected.

This illustration points out a shortcoming of the interrupter detector. At each gap between cars, the detector will "drop out" and give a clear indication. This can be addressed in a couple of ways:

2



2. The Ambient Light Optical Train Detector.

1. A delay can be built into the circuit or into computer logic down-stream of the detector to hold the indication for a time to allow the next car to move into position. When the train has finally passed, this delay will time-out and give the clear indication.
2. A strictly mechanical method to address the problem is indicated in [1-B]. The source/detector pair is set across the rails at an angle such that the largest gap between cars will not expose the detector. Setting up the source/detector pairs in this way avoids any further electronic or software complications.

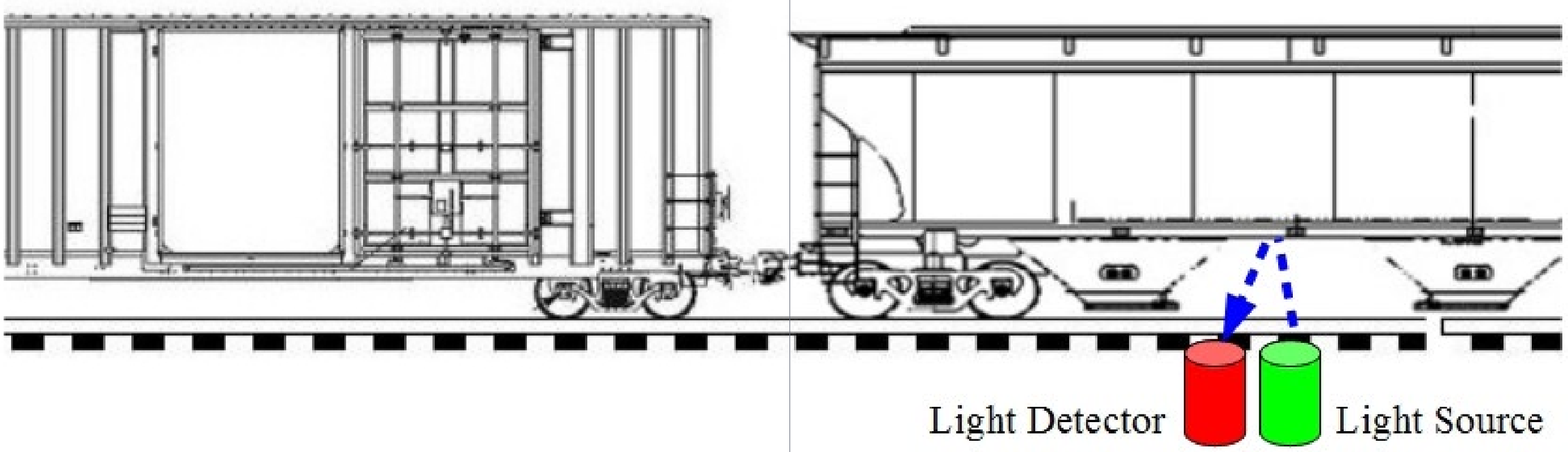
Aiming an interrupter detector can sometimes be a problem, especially with LEDs which can have a narrow beam. But this problem can be overcome.

A somewhat thornier issue is how to scenically camouflage all of the line-side light sources and light detectors. Some can be hidden behind relay cabinets, bushes, sheds, signs, etc.

But after some number have been hidden, the layout might become cartoonish for all of the clutter beside the track.

The problem is compounded if double or triple track has to be detected separately. All of these limitations can be overcome

3



3. The Reflective Optical Train Detector.

and an interrupter optical detection system can function satisfactorily on a model railroad.

Ambient light: A second type of optical detection system I'll call the ambient light sensor. In this system a light detector is placed between two ties and is facing upwards. The light detector is kept on by ambient room light. When a train passes over it and cuts off the ambient light, the train is detected. This arrangement is illustrated in [2].

Other than a small hole between two ties at intervals down the track, there is nothing to interfere with your scenery. The ambient light sensor does suffer from the inter-car drop out limitation; but that can be addressed with an electronic or software time delay.

So, is the ambient light sensor is the perfect optical train detector? No, not really. The ambient light sensor has its own quirk.

If you want to have night operations, and you turn off the room lights and/or the lights over the railroad, it's very likely that the ambient light system will cease to function because there's now insufficient light to activate the detector in the first place, and all, or almost all, of the sensors will indicate a detection all of the time. It has been suggested that a secondary, point-source light system be placed above each detector for just this reason. But this has its own problems.

For one, if your system uses visible light, the secondary lighting system will have to use visible light too. So during night operations there would be these spots of light at intervals down the track.

“Ambient light sensor detectors will work in hidden staging or anywhere else that the lights are kept on constantly.”

In the author’s opinion the secondary light source “solution” is more trouble than it’s worth.

However, if you don’t have night operations, and never want to have night operations, the ambient light system may be the perfect choice. Ambient light sensor detectors will also work in hidden staging or anywhere else that the lights are kept on constantly.

Reflective: The third type of optical train detector is generally referred to as a “reflective” detector. In the reflective detector a light source is mounted between the ties aimed upward. Next to it, and also looking upward, is a light detector.

Light is emitted from the source and, when no train is present, the detector sees nothing. When a train is present, the light is reflected off of the bottom of rolling stock and back into the detector, thereby signaling the presence of a train. This arrangement is shown in [3].

Like the ambient light system, the reflective system has no sensor mounting or aiming issues and nestles between the ties and does not interfere with scenery. Unfortunately, like the ambient light sensor, the reflective sensor has the inter-car dropout; which can be addressed in the same manner with a time delay.

Each reflective sensor has its own light source, so night operations are not an issue. Since the light source is pointed straight upwards and readily visible, a reflective system is rarely done in visible light. Infrared is almost always used; which also means that the detector is either a photodiode or phototransistor for maximum sensitivity.

The reflective sensor is not perfect, however. The detection range is usually limited (ergo the need for maximum sensitivity) and it is sometimes difficult to prevent the detector from “seeing” the light source right next to it and generating false triggers.

Installing optical detectors

By now it probably comes as no surprise that I decided to go with optical train detectors for my own railroad. I chose optical to preserve the wiring advantages of a DCC-controlled railroad and, as an O scaler, the immunity to high currents was another plus.

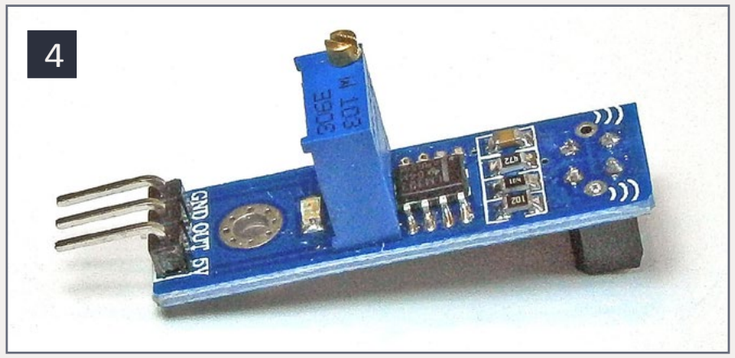
What may not be quite so obvious is that I chose the reflective sensors for their compatibility with night operations and easy concealability.

Having made the decision for optical detectors and having the sensors in hand are two different things. I had obtained a sample of at least one commercially available reflective train detector when I stumbled across something interesting.

The robot experimenter’s community has a number of modules available to them that allow the robot’s microprocessor to sense and detect the outside world. These modules are self-contained, easy to interface and generally inexpensive. Among these modules are reflective optical sensors.

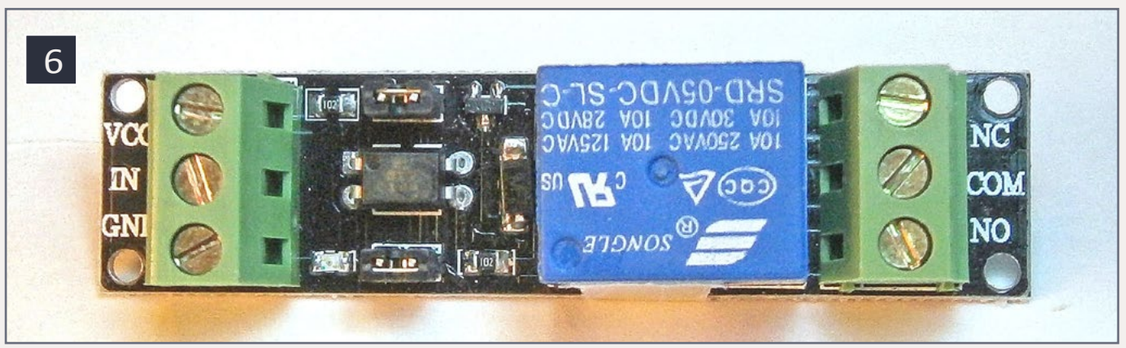
I found a reflective optical sensor offered by a company called Good Luck Buy (goodluckbuy.com) and it goes by the awkward title “Infrared IR Reflectance Sensor Module for Smart Car LM393” and it’s SKU 74447; cost is $4.59.

See: goodluckbuy.com/infrared-ir-reflectance-sensor-module-for-smart-car-lm393-.html.



4. Optical reflective sensor module.

5. The sensor side of the module.



6. The DC 5V relay control panel controller module with optical isolator.

The 1.26”x0.43”x0.79” board is dominated by a multi-turn potentiometer on one side (which adjusts the detection range) and on the other by the source/detector pair. Figure [4] shows the potentiometer side and [5] shows the emitter/detector side of the module.

This module has a hole that can be used for mounting. Hookup is via a three pin “header” on one end consisting of +5V, ground and output pins. In use, the source/detector pair would be inserted facing upward between the ties. When powered up and an object passes within the detection range the output pin goes to “logic low” (computer ‘logic low’ is between 0V and 0.8V).

Connecting to a signal system

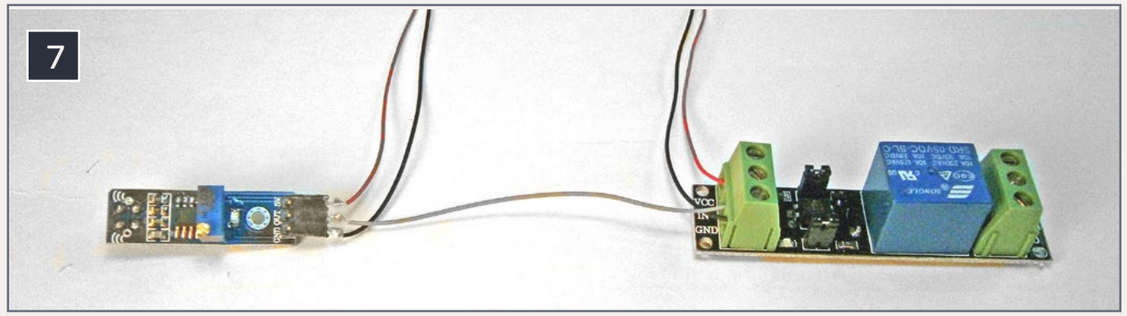
If your signal system can accept logic-level signals, then you supply power to the module, run the output to your signal system and you’re done.

But most signal systems are set up to detect a switch closure. In which case another module is needed. On eBay I found the following module which goes by the equally awkward name of “DC 5V Relay Control Panel Controller Module with Optical Isolator”; item #280823518850, from vendor “bosity”; price: $4.99

(ebay.com/itm/DC-5V-Relay-Control-Panel-Controller-Module-with-Optical-Isolator-/280823518850?pt=LH_DefaultDomain_0&hash=item416262d682).

This 2.8 x 0.7 x 0.8 inch module has a 10 amp SPDT relay and the interface circuitry necessary to read a logic low signal at it’s input. One end of the relay module has +5V (on the terminal marked VCC), ground and input screw terminals. On the opposite end are screw terminals for the normally open, normally closed and common connections to the relay [6].

To make the two modules function together each module needs to be supplied with regulated +5V (more on this later) and the output from the sensor is wired to the input of the relay module – that's all there is to it. To prevent soldering directly to the pins on the sensor module, I cut off 3 female sockets from a strip of header sockets (SAMTEC BCS-130-L-S-TE, for 0.01" pins on 0.100" spacing) and soldered to the sockets.



7. The two modules interconnected.

8. The sensor mounted below the track.

If you wield a hot soldering and solder quickly, there's no harm in soldering directly to the pins. On the relay module the wires go directly into the screw terminals. For how the detectors modules are interconnected see [7]. The red and black wires carry +5V and ground respectively to the modules and the gray wire carries the signal between the two modules.

Reading the LEDs

Both the sensor and the relay module have surface-mount red LEDs on them. When the sensor detects an object, the LED lights up. Similarly when a logic low signal appears on the relay module's input pin, it's LED lights up and the relay pulls in (which you can hear).

These LEDs are handy for troubleshooting, but the likelihood of having to troubleshoot this circuit is low. The potentiometer on the sensor board adjusts the detection range, turning the screw clockwise increases the range. At maximum range a white index card is detected at about an inch and a blackened card is detected at about half an inch.

The LED in the source is an infrared LED and, therefore, not visible when powered; but if you want to see the LED light up, look at it with your cell phone's camera or your digital camera; most of their sensors can 'see' in the infrared.

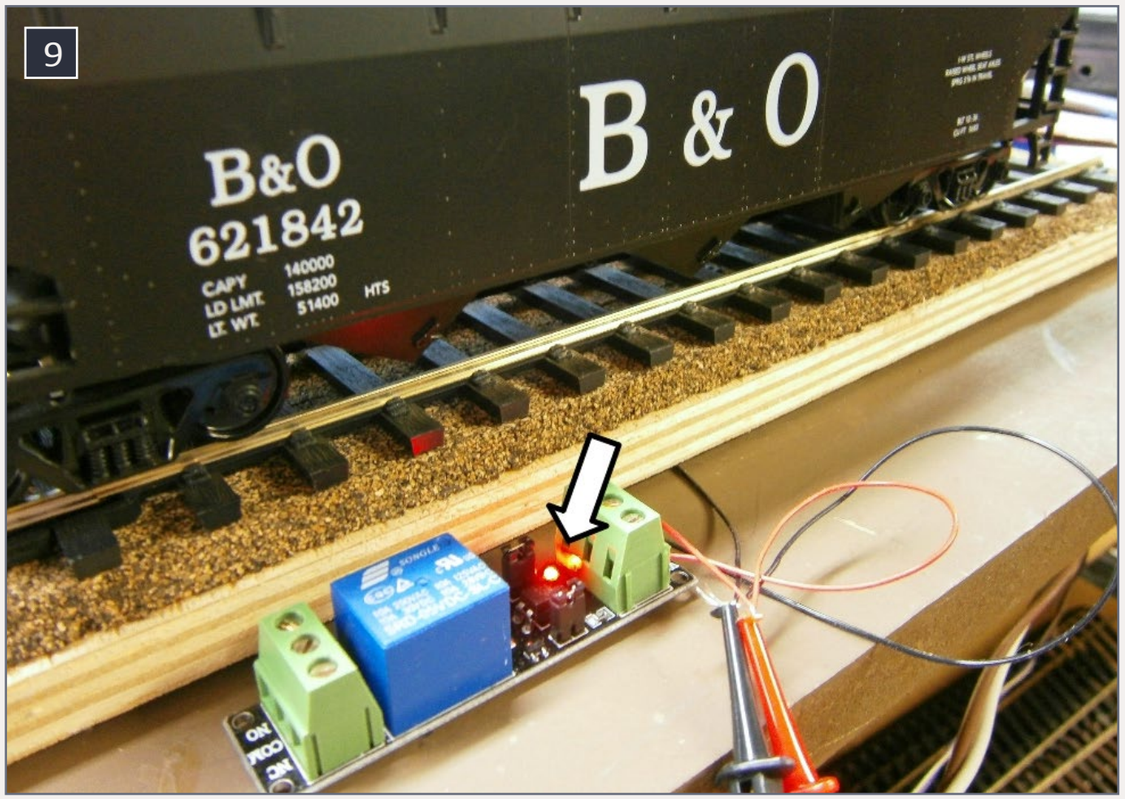
Connecting and testing the modules

The output of the relay will go to your signal system; either as a switch closure on detection (the normally open contacts) or as a switch opening on detection (the normally closed contacts). Since the relay module has a hefty 10-amp relay, this set-up can also be used for automation as it can switch track current

on and off, activate accessories (e.g. crossing gates/lights), lights, etc.

If you look at [8] you can see the sensor mounted between the ties of a section of O scale test track that I set up. The bulk of the sensor module is hidden below the cork roadbed. Position the top of the sensor level with the top of the ties to maximize the detection distance.

“Each detector draws about 10 milliamps steady state and 85 milliamps when a train is detected and the relay is energized. ”



9. The detector in operation.

The relay module should be mounted within several inches of the sensor module so that the logic level signal does not pick up any interference or is degraded. The light purple color that you may be able to see in the LED nearest the camera is the camera’s sensor seeing the infrared light being emitted by the LED.

Putting an O scale hopper over the sensor as in [9], the arrow points to the LED on the relay module that illuminates to indicate that the car has been detected and the relay has closed.

The 5VDC needed to power these modules should be reasonably well-filtered and regulated. While these modules do not use any critical digital circuitry, a power pack set to 5V is probably not the way to go to supply the 5V needed.

There are many options to supply clean 5VDC: bench-top and laboratory power supplies; open-frame power supplies and regulated plug-in wall transformers (wall-warts) are good choices (just be sure that the output of the wall-wart is regulated and DC, not AC).

Each detector draws about 10 milliamps steady state and 85 milliamps when a train is detected and the relay is energized. Therefore for each ampere that the power supply can provide will power up to 50 detectors or so, given that few will be energized at any given time.

A final word

Both of these modules are sold by and will ship from vendors in China. To allay your concerns: I have ordered many items from vendors in China with complete success and satisfaction. Chinese vendors offer products that are not available here and prices are very reasonable; plus shipping is usually free. I pay exclusively via PayPal.

With PayPal the vendor does not see your credit card information; PayPal also has a dispute resolution process as well as a refund

“Optical train detection offers several advantages over electrical detection of trains – particularly so for command control systems.”

process should you not receive your merchandise. Payment with PayPal is far safer for international payments than direct payment with a credit card.

The only drawback with ordering from China is the “free” shipping. Orders from China are sent via China Post – which gives new meaning to the term “snail mail”; so don’t expect to receive your order in less than three weeks, and five to six weeks is possible. But I haven’t lost an order in the post yet.

Optical train detection offers several advantages over electrical detection of trains – particularly so for command control systems, AC operators and high current systems.

A reflective optical detector can be constructed out of modules designed for the robotics/micro-controller hobbyist with just a few interconnections between them. The resulting detector can operate from between two ties and reliably detect trains passing above. Using this detector can help simplify the design and construction of a signaling or automation system for your railroad.

Give it a try; for $10 what do you have to lose? ☑

Reader Feedback (click here)

Terry Terrance has been a model railroader since receiving his first Lionel train set at age 7. The next couple of decades he spent as a 3-railer attempting to scale model in the days before 3 Rail Scale. Eventually, rather than go the HO route, Terry jumped into 2-rail O Scale where he has been ever since.

Currently Terry is building a model of the B&O “West End” centered around the M&K Junction helper station circa 1950/2 in his basement. The layout features the Cranberry (three-track) and the Cheat River (two-track) grades and is designed for helper operation closely following the prototype.

Terry’s blog (2railoscale.blogspot.com) features the construction progress as well as tips and techniques, articles and videos. Terry is part of the regular crew of the *Model Rail Radio* podcast and has also appeared on the *Model Railcast* podcast.

$500 Grand Prize MRH contest winner

1

Build this layout for less than $500 ...

– By Tyrone Johnsen

Illustrations and photos by the author

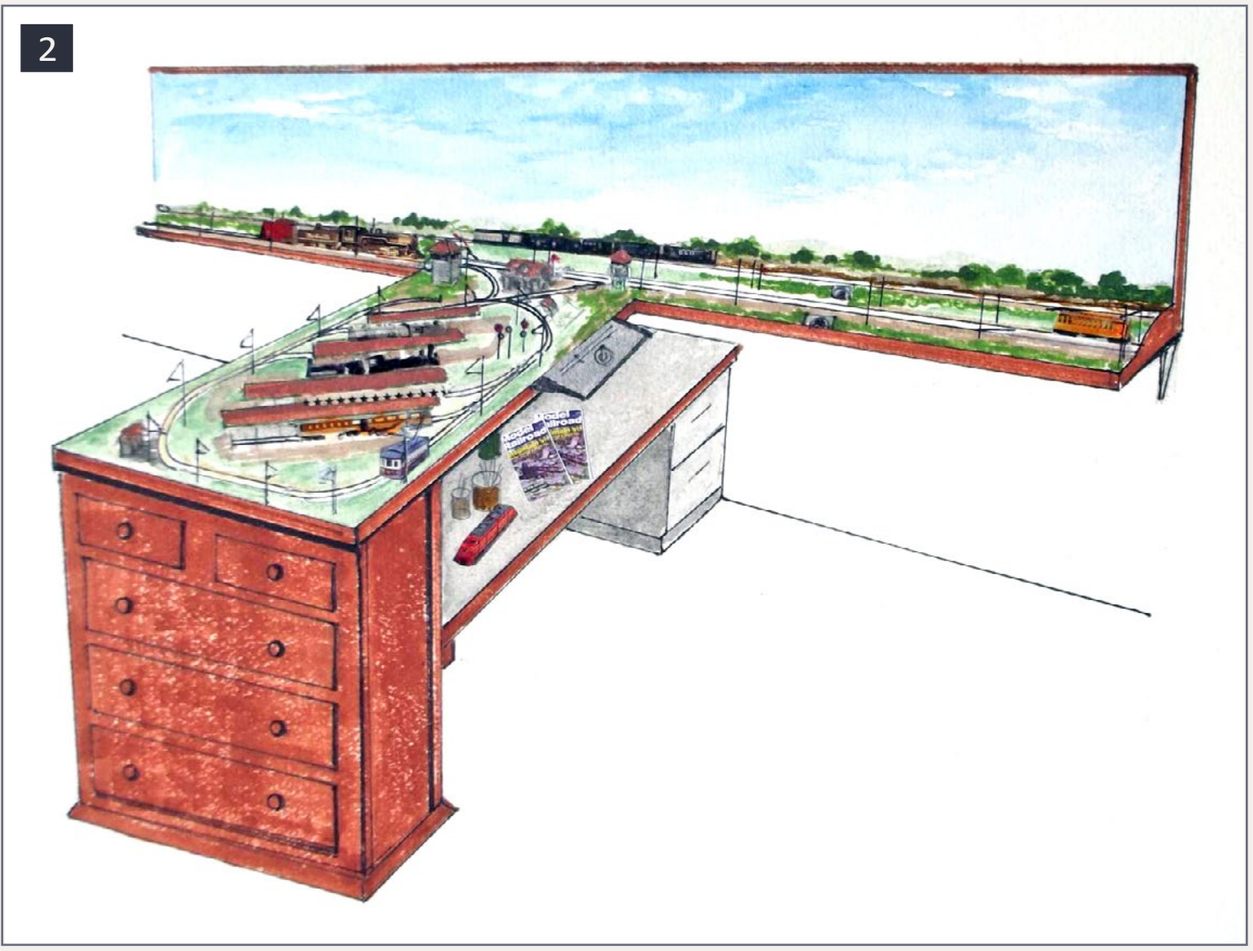
Reader Feedback (click here)

1. A Heisler pulls a train load of visitors in converted flatcar and gondola and various cabooses in Freeport, IL.

As I viewed a huge N scale modular layout with the vast array of train equipment marching past, I was struck by the idea that a model of the Illinois Railway Museum would be a natural to model, and would be very enjoyable. Of course the module would be compressed, as the IRM is actually a very large facility; but the basic concept, configuration, and operational elements could be used. The elements I was thinking of consist of the long straight museum run parallel to a still-functioning UP line (a former C&NW line), the trolley loop

around the storage and display areas, and the wye trackage connecting the two. Suddenly, I could have a prototypical setting to operate and display almost any type of railroad equipment and even some other transportation equipment, without upsetting my sense of time, and have a reason for multiple operational moves.

Imagine having a selection of trolleys, streetcars, and interurban equipment which you can run around the loop, stopping to pickup and drop off visitors at a couple of platforms with shelters, one near the main depot and ticket office, and a least a second one at the other end – say near the trolley barn. Also



2. Painting illustrating the finished layout and work table and storage concept. Jack Brand painting.

3. F units pass the tower at the east end of the wye and approach the depot platform at the Illinois Railway Museum.

an interurban will run down the straight "main," and duck into the passing siding for the riders to wait and view the steam train running up and back.

That steam train might be a nice steam loco like the IRM's 2-10-0 or on my model 2-6-0, 0-6-0, 2-8-0, or even a beautiful 4-6-0. Or I could pull out a Shay like the IRM would do. For diesel events, my choice might be an RS-1 or other B-B units suitable for the tight curves. So whatever the power is, steam or diesel, I have a wonderful chance to pull some interesting equipment.

I must have a variety of cabooses; including one of the old four-wheel cabooses. A number of distinctive steel cabooses are available, but a unique B&O or Milwaukee Road bay-window

cabooses would be desirable. A number of passenger cars are necessary. An open-vestibule wood coach would be great, along with the shorter steel coaches.

The longer passenger cars are typically too long for the curves, but those cars are a challenge to move through the tight industrial and trolley-type curves on the prototype. Where else could I realistically show such a variation of equipment? Where else could I justify so many movements?

Figure 3 shows the basic track diagram concept. It is based upon the IRM track plan, which can be seen at irm.org. My analysis of the IRM property map yields five track configuration elements which are:

1. The “trolley” loop;

2. The storage, display, restoration, and maintenance stub end tracks.

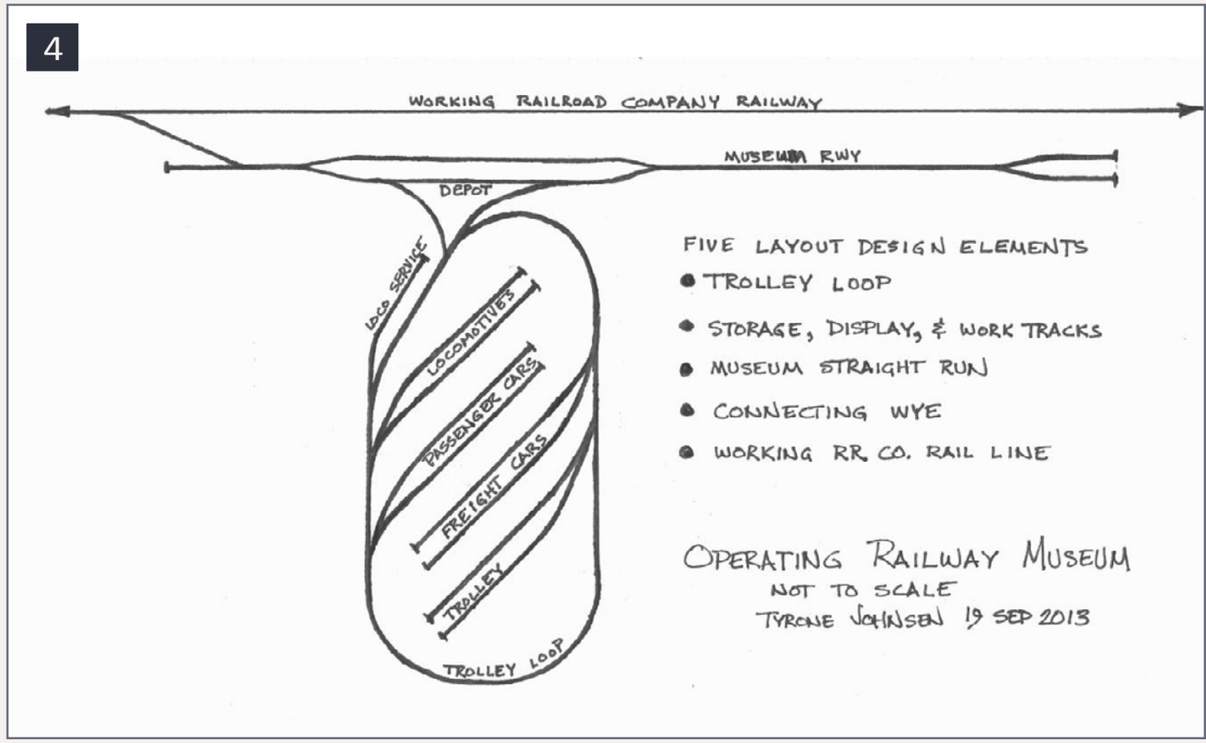
3. The straight track run with passing siding and double ended tracks at one end.

4. The “wye” connecting the “loop” and “straight run.”

5. And the optional parallel UP/CNW working line.

Design considerations

Due to space considerations, I chose to model in N scale, and to do it on a standard 36”-wide door as a table top for the “trolley loop,” with the storage tracks and the “wye” tracks connecting with the straight run. The straight run and optional parallel working rail line require the addition of narrow shelves along the wall, protruding from each side of one end. The preliminary layout concept is shown in Figure 3. The track turnouts are drawn with 12” radius, and the reversing section of the wye and the trolley curves are drawn with 10” radius. These are not necessarily accurate for any particular commercial track, but I consider them a conservative layout plan.



4. Simplified layout concept for the Illinois Railway Museum.

I intend to use commercial track switches, and the actual track plan can best be laid out only with them in hand, using them to establish the key geometry. With the track switches, I can start by laying out the critical wye trackage on the door table top. Once that is established, the rest of the loop with storage track switches can be laid out.

I also did a layout study of an HO version, where I increased the table size up to a standard 4’x8’ plywood table top; refer to Figure 6. For this layout, the wye was moved off the main line because the table top width could not accommodate the necessary wye configuration

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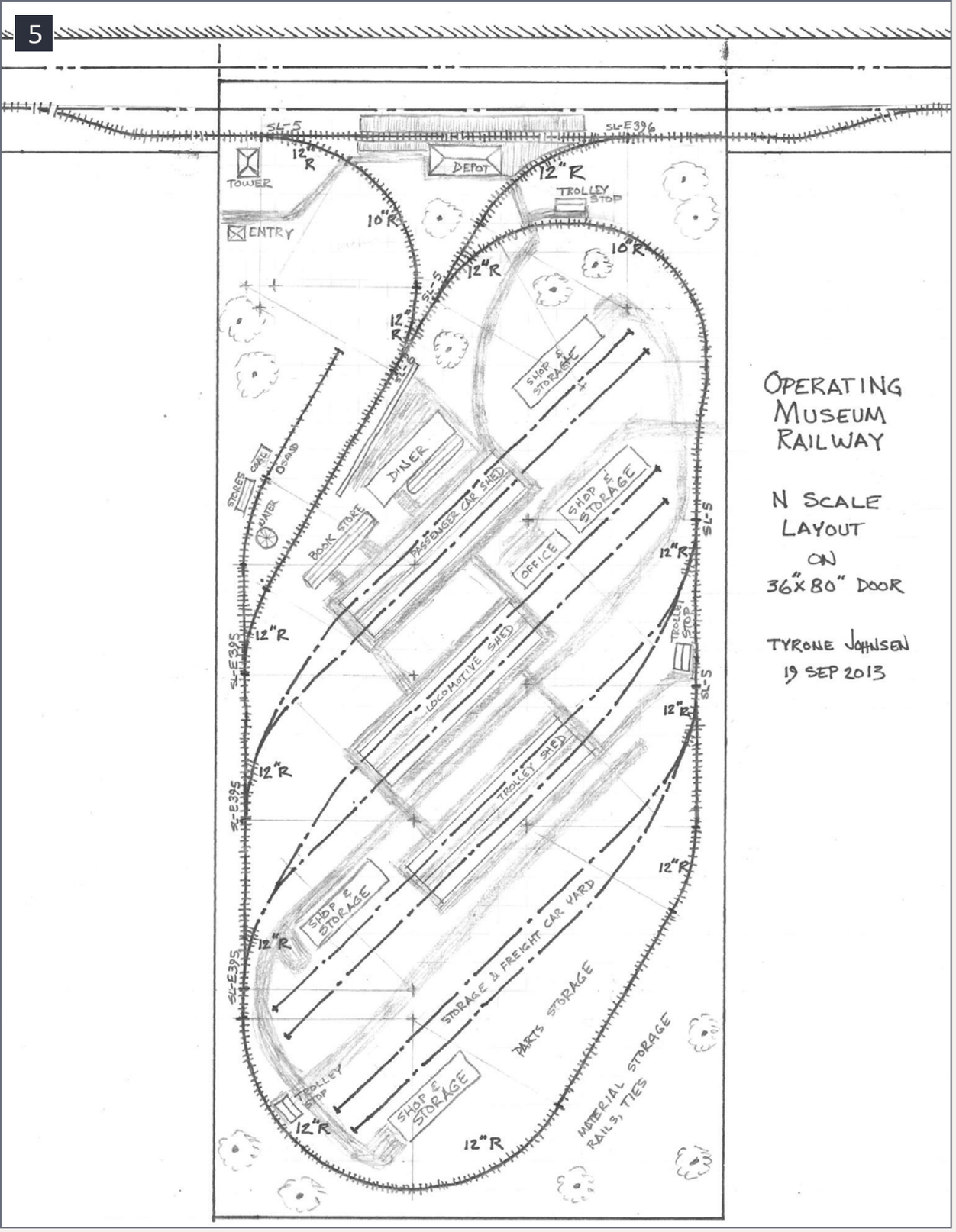


5. N scale layout plan with initial trackwork shown in solid lines and future trackwork shown by centerlines.

← back to previous page of text ... of the IRM and Figures 4 and 5 configurations.

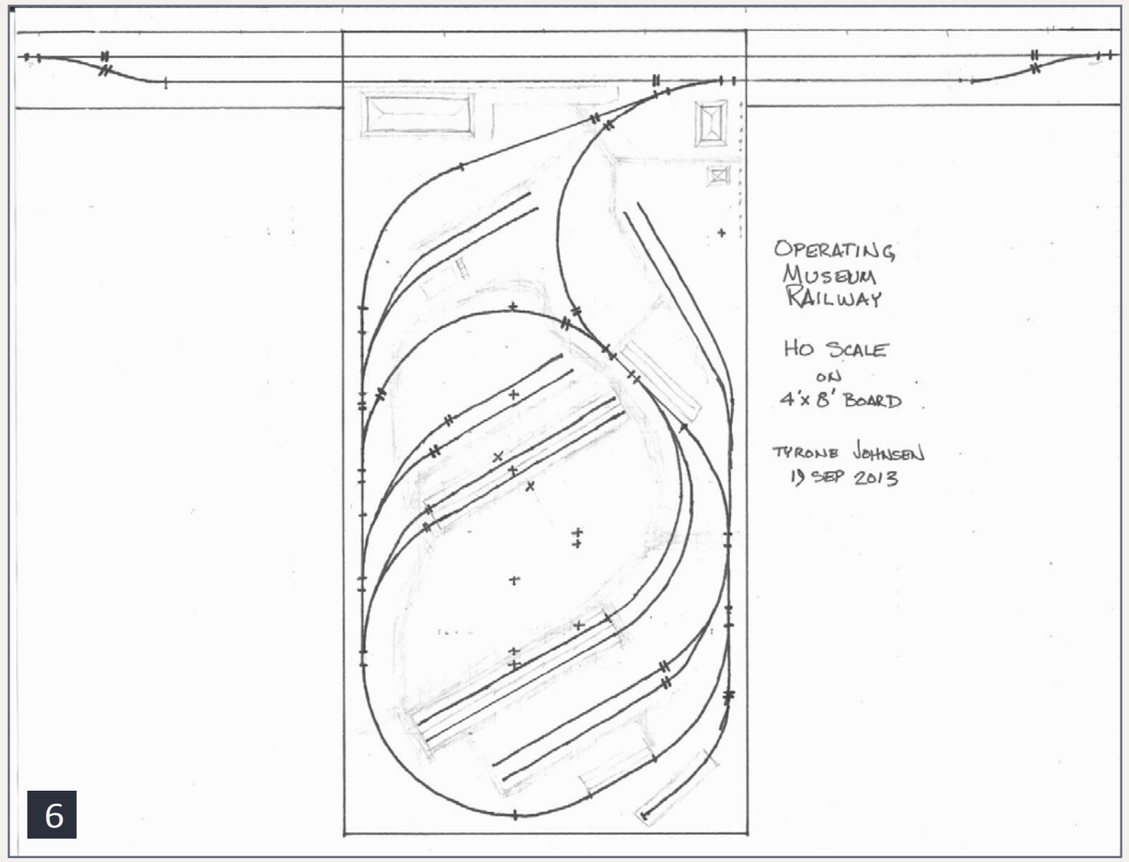
In some ways, I like the look of it and it, or some of its ideas might be desirable. The same concept can be used in the larger scales, but the space required will force greater space and materials, with associated costs, in addition to the generally higher cost of the large-scale equipment.

Even though it seems a simple flat table top and shelf layout, it can be finished to an attractive and realistic setting. An illustration of the finished layout is shown in Figure 1. Along the narrow wall shelf, the tracks should cross a small creek with a combination of a small timber bridge, plate girder bridge, or concrete culvert to add interest.

Layout structures

Buildings would include at least one station, an interlocking tower, office and storage, plus shop buildings, trolley stops, and covered sheds in lieu of enclosed buildings protecting some of the equipment. The addition of operating track signals along the operating lines, and a display of various signals will add interest, just as they do at the IRM. The IRM also has a wonderful display of signs, including old interurban railways, and even locomotive builder EMD and significant and architecturally pleasing portions of former railroad buildings.

A combination of all these features along with the more utilitarian office, storage, and shop buildings will add interest and character. Trolley poles will be added, including some with double poles with an adjoining span over the track. But I do not envision actually stringing wire, and don't think that will detract from the effect.



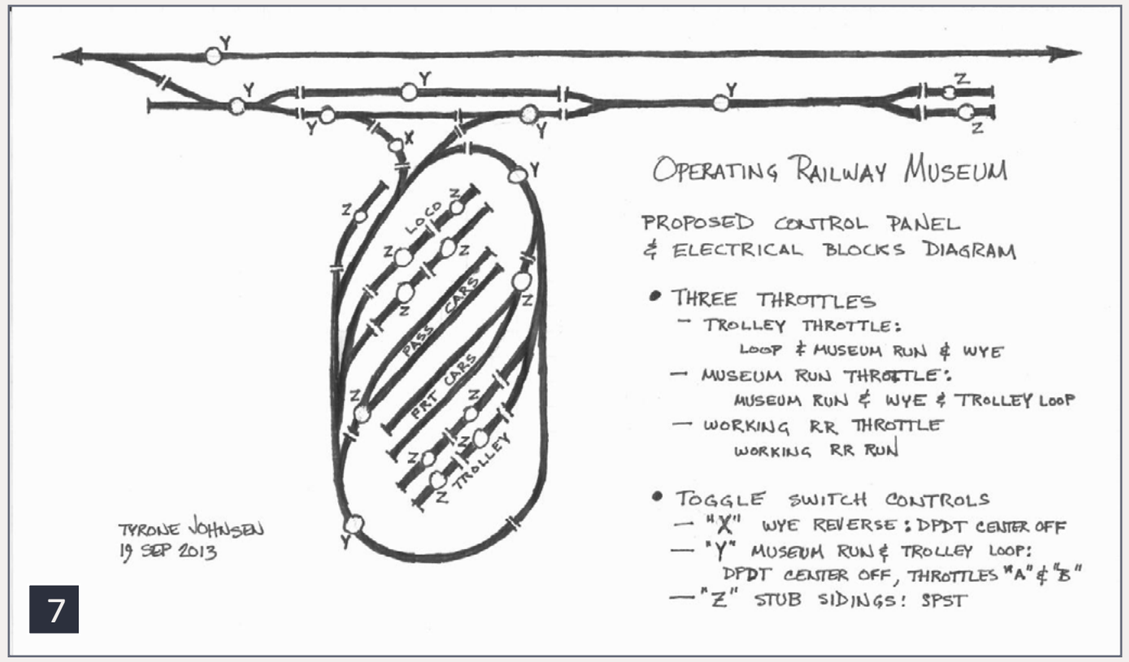
6

6. Layout plan for HO scale on the 4x8 tabletop.

Layout control

The layout throttles will be DC, with two-position toggle switches to control the electrical blocks. The eventual control panel will be done on in the conventional manner, using hardboard mounted into a used computer keyboard drawer installed under the layout table hear the edge of the wye throat. It can be slid under the layout when not in use. Three DC throttles will eventually be used, one mainly for the trolleys, one for the museum steam, diesel, and interurban runs out and on the straight run, and an optional third one to handle the working UP line.

I will start with a standard stationary “power pack,” which can continue to function for the trolley loop. But I would like to



7

7. Envisioned control panel and block toggle switches.

build or buy a corded throttle for the straight run. Figure 7 illustrates my proposed control panel layout, with the location of track rail insulators defining block limits, and the style of toggle switches to be used. To start, only one DPDT center-off switch is required, and that is to control the polarity of the reversing section of the track wye. The other switches may be added as additional throttles become available. All toggle switches might be DPDT center-off switches but all stub tracks require only a SPST on-off switch. Only one rail gapped, and more storage blocks than the two shown per stub will be desired. Wiring is all conventional, and space here does not permit covering it in detail.

Although I am not able to duplicate the IRM, I believe it is desirable to try to understand it to a reasonable level, in order to make my layout appearance and operation believable. Even in N scale, the loop would require the layout table to be twice the width and length, and the five-mile run would require 165 real feet. I continually refer to the IRM website, irm.org, where they

have a great deal of information on their collection of equipment and photos to aid my layout design and modeling choices.

Operations

Operation can include as many as four operators: trolley, interurban, steam or diesel engineers, and a dispatcher. Endless switching moves can be done in a session to pull equipment from the storage and display tracks so that the scale visitors might enjoy either riding in them, or just for viewing. It does not count against you if you switch individual tracks a number of times during a session.

For switching the storage and display tracks I could be looking for a small diesel. I like the little GE 44-ton diesel model, but a 45-tonner would be more interesting because of its side rods. Much of the fun comes from being able to watch

8. Vintage trolleys transport visitors around the loop at the Illinois Railway Museum.

the equipment move, and what better way than the wonderful movement of the side rods and mechanism of the steam locomotive?

Finding materials

Working on a budget means I have to be a good shopper, and manage and prioritize my purchases, not unlike the real IRM. See the sidebar for my proposed budget table. The prices shown are based upon two sources for simplicity, and reflect dependable prices and availability. I prefer to look at the possibility of used material and equipment, which saves me money for additional purchases.

Track switches are the single most expensive items, as there are so many. I do not expect to purchase all of them in the beginning, but I want enough to establish the key wye track configuration and trolley loop, and to minimize the need to later pull up the wye or loop tracks to install additional switches to connect the storage stub tracks. The additional switches will complete the sidings on the mainline straight run and the second stub track in the storage and display tracks.

My budget table shows the full retail price at Menards for a 36”-wide hardwood hollow-core door; however, this is an area to look for savings. Every shipment has a damaged door from packing or handling, which might be purchased at a discount. But my real savings came at the local ReStore, which had a large number of used suitable doors at $5 each.

The budget does include sufficient 2x3s and plywood to build and fasten legs to support the door, as the layout without the initial inclusion of the work desk or chest or bookcase.

Look for useful pieces of wood or structural items there, along with desk-top lights or surface-mount florescent lights. ReStore

is also where I found one of those used metal pull-out drawers for computer keyboards ($2), which I plan to use for my control panel. I picked up a quart of flat tan paint at Menards for $1, which I found in their incorrectly tinted clearance shelf. Harbor Freight Tools is a low-cost source. I get their coupons, and have obtained a free digital electrical meter, tape measure, and other stuff, when purchasing many tools and supplies at low cost.

Rolling stock

For the track and model train supplies, I did some looking around at local hobby shops. Two of the three hobby shops had consignment model trains that were mostly HO, but some N. One of the shops specializes in model trains, including some consignment N scale equipment, and the helpful owner offered me some answers and suggestions.

I found an MRC 1300 power pack for $10, and noted at least one steam loco and some cars I would like to get. One advantage is that he will run them for me to evaluate prior to purchase (unfortunately not through my tight turns and switches). He explained about the Atlas switch supply problem, and after discussion I felt my best track and switch option was to use Peco code 80 track.

The Peco switches have a built-in spring that eliminates the need to make or purchase some type of switch machine to hold the points in position. Also, their small-radius switches seem good for my tight space and especially suitable for trolley trackage. By limiting my equipment choice to B-B style diesels and smaller-driver steam locomotives I think the Peco small and medium radius track switches will serve well.

I then went to the Internet to do my price and availability shopping, and to establish my budget distribution plan. I found I liked NScaleYardSale (yahoo.com/NScaleYardSale). They seemed to list a great deal of equipment ,and covered my assumed track needs. I used N Scale Supply for targeted part numbers and budget prices. I have done a lot of looking and business on eBay and through NscaleYardSale, but any deals I find there I consider a savings, permitting money to be allocated elsewhere.

Trackwork

Construction started by laying out the track centerlines on the door. I left the (UP) working railroad line off the door because it can be added to a shelf section running between the door panel and the wall. I prefer to do the track layout with the door on the floor, where I find it easier to work. It is extremely important that the resulting rail joints are smooth, without any kinks.

Insulated joiners are required at both ends of the tight 9” to 10” reversing section of the wye, and also recommended at the two diverging ends of the medium-radius LH switch. This is the most critical portion of the layout trackwork. I adjust and test this until I am satisfied. From this point, the remaining track should go into place.

Note that the layout plan uses all switch radii of 12”, whereas Peco indicates a 9” radius on their small-radius switches, and a 12” radius for their medium-radius switches. The Peco website, peco-uk.com/pointplans, includes switch templates which I printed out. The medium-radius switches are meant for where their larger diverging-radius switches accommodate the longer-wheelbase locomotives and passenger cars along the route from the storage tracks, and the main route connecting to the straight running tracks.

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Material costs

Item	Source	Qty	Cost Per	Extension
Door, 36”x80”,				
flush panel, hollow core	Menards	1	$26.00	$26.00
2x3 x 8ft	Menards	4	$1.98	$7.92
Glue, wood, qt (Titebond)	Menards	1	$7.68	$7.68
Screws, drywall, #8x2-1/2”,				
1# box (about 95)	Menards	1	$3.79	$3.79
Screws, drywall, #8x1-5/8,”				
1# box (about 165)	Menards	1	$3.79	$3.79
Plywood, 1/4”, 4x8	Menards	1	$10.99	$10.99
Shelf bracket, 6”x8”,				
stamped metal	Menards	6	$0.60	$3.60
Screws, wood, #6, 1/2”				
to 3/4”, at least 12	Menards	1	$0.82	$0.82
Sub Total				***$64.59***
Track turnout, small radius				
LH (Peco SL-6)	N Scale Supply	1	$15.99	$15.99
Track turnout, medium radius				
LH (Peco SL-E396)	N Scale Supply	1	$20.99	$20.99
Track turnout, small radius				
RH (Peco SL-5)	N Scale Supply	4	$15.99	$63.96
Track turnout, medium radius				
RH (Peco SL-E395)	N Scale Supply	3	$20.99	$62.97
Flex track, 36”				
(Peco SL-300)	N Scale Supply	10	$4.80	$48.00
Rail joiners, NS, 24				
(Peco Sl-310)	N Scale Supply	2	$3.16	$6.32
Rail joiners, insulated				
12 (Peco SL-311)	N Scale Supply	2	$3.16	$6.32
Spikes, micro 3/16”, 1000				
Micro Eng MEE-30-108	N Scale Supply	1	$8.46	$8.46
Sub Total				***$233.01***
Electrical wire, 2conductor				
100 ft (speaker, 24 ga)	Menards	1	$4.69	$4.69
Electrical switch, DPDT				
center-off, “toggle”	Menards	1	$5.89	$5.89
Control, MRC 1300	N Scale Supply	1	$37.59	$37.59
Sub Total				***$48.17***
Loco, Atlas VO-1000 Milw Rd				
ATL-50039/40	N Scale Supply	1	$82.46	$82.46
Sub Total				***$82.46***
Saw, razor 52 tpi, Zona				
ZON-35-050	N Scale Supply	1	$5.85	$5.85
Precision knife set, 13-pc				
3-handle w/10 blades	Menards	1	$2.87	$2.87
Sub Total				***$8.72***
Total material cost				***$436.95***
Sales tax @ 8%				***$ 34.96***
Shipping & handling if needed				***$ 25.00***
Total Expenditure				***$496.91***

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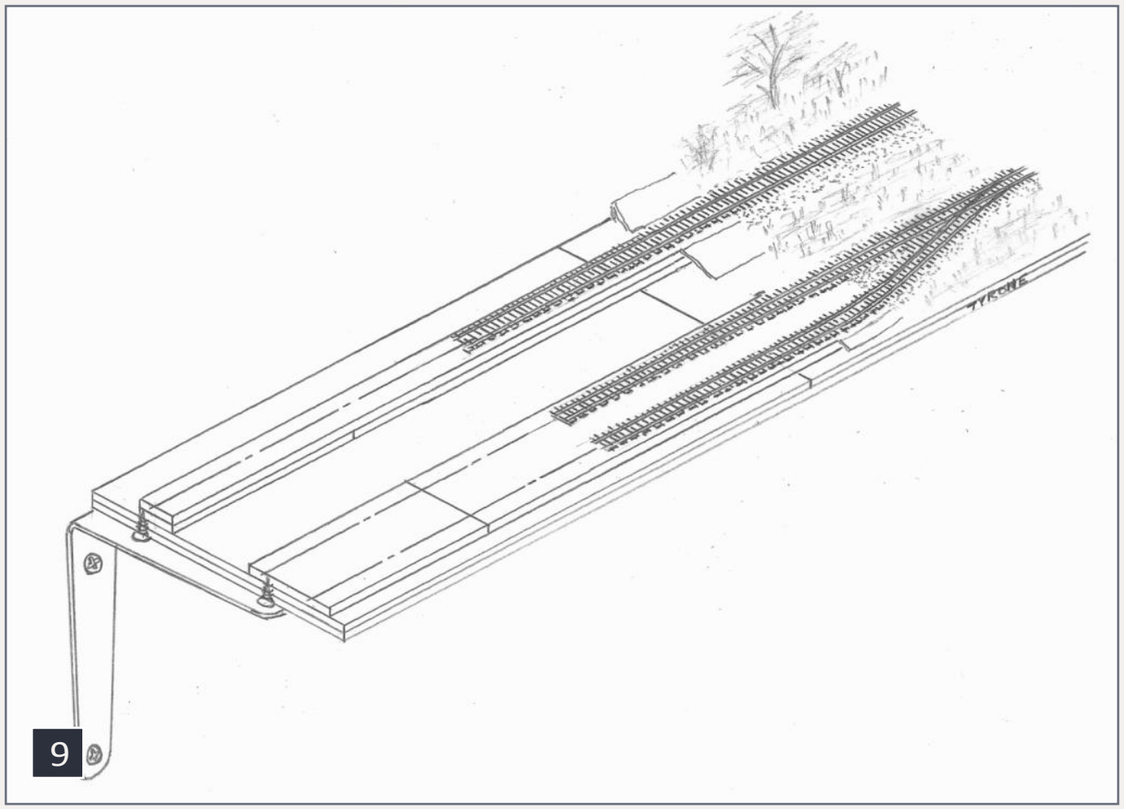
Building the actual track layout causes some adjustments and creates some opportunities. I solder about foot-long sections of electrical wire to the bottom of each metal rail joiner prior to using them to connect track. In some cases, I need to connect wires to the rails. Practice is needed to minimize damage to the track. Peco does show some connection clips which might be interesting to try.

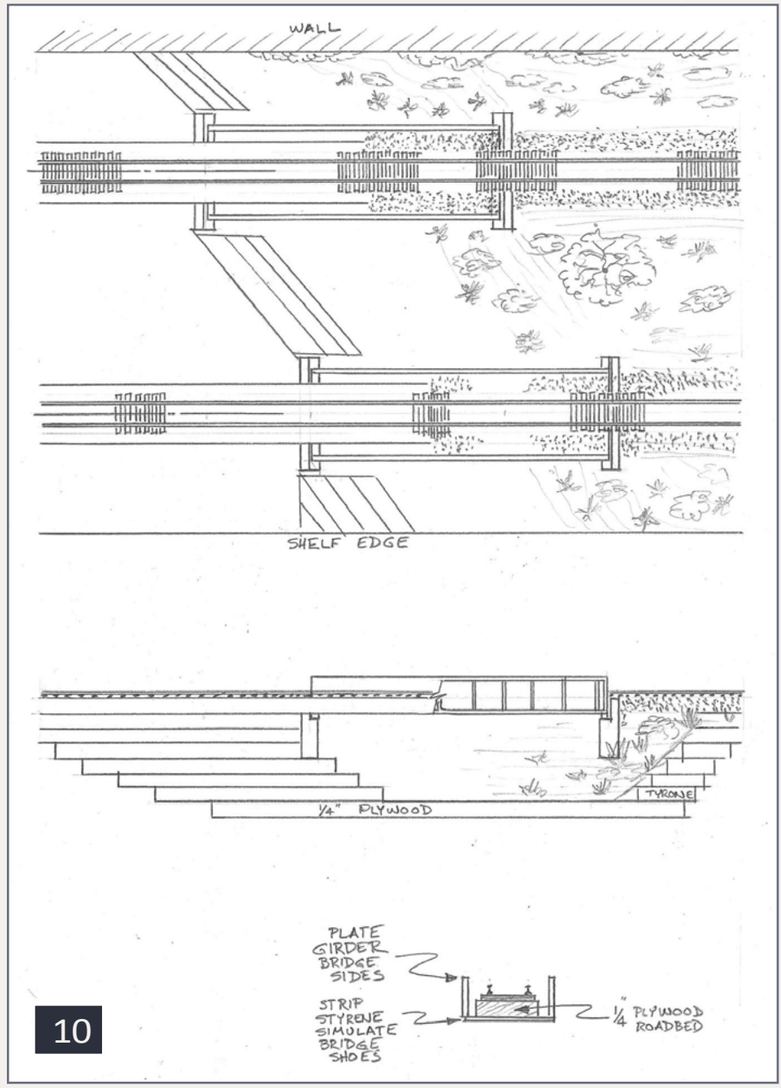
The DPDT switch will control the polarity of the tight curved reversing section of the wye. Some temporary method of fastening this switch (e.g., tape, glue, or a small board) will be used until a control panel is made at a later time. The electrical wires from the rails and rail joiners are generally run above the board, eliminating the problem of drilling through the door panel. The wires are held in place with quick-tack glue, and will be eventually hidden with both paint and ballast ,and other scenery.



9. This sketch shows my proposed construction of the shelf layout portion. I plan to use "L" brackets to support the shelf.

Layout construction

I cut some of the plywood into 8"-wide strips, six of them 4' long each. Cutting off the 4' ends is easier for me to work with and to cut with my hand saw. I also cut one 4' strip 2.25" wide and three at 1" wide. The first set will become the shelves when laminated to double thickness. The last narrower strips are the roadbed. The wider roadbed is for the double-track sections, and the narrower is for the single track.



10. This sketch shows construction details of the bridge.

These are then laminated in an overlapping fashion over the previously laminated shelves. The shelf brackets are attached through the drywall into each stud, such that the resulting roadbed surface was level with the door panel top surface.

Figure 9 shows a sketch of the shelf construction details. The door panel was positioned away from the wall to locate the two museum “run” track centerlines approximately 5.5” and 7” away from the wall.

The 2x3s and some of the plywood are used to make whatever support legs are necessary. I plan to attach mine to a heavy desk I purchased.

Future expansion

If I decide to add the UP working railroad later I will bridge the gap between the two shelf sections which exists between the door panel and the wall. I would run the UP RR line as close as 2” from the wall but another ¼” higher than the museum roadbed. This also leaves only 3” between the two rail lines, but that is enough for some bushes and occasional trees to disguise the close proximity.

More simulated vegetation would be used between and on the wall between the UP tracks and the wall. An occasional tall bush or tree, along with telephone, power, and trolley poles will help break up the view between the viewer at the shelf edge and the tracks. At least one bridge and culvert will be included. The museum line will cross a little creek on a wooden pile bridge, but the UP line will have a concrete culvert. Figure 10 illustrates the creek and bridging substructure construction.

Layout structures and rolling stock

I plan to start drawing and forming the proposed structures out of available cardstock or non-corrugated cardboard. Eventually the structures will be scratchbuilt from Evergreen styrene sheets and Grandt Line or Tichy Train Group windows and doors. Roadways and platforms will be made of cardstock and thin plywood scraps.

I use the old method of newspaper and paper bag pieces dipped into homemade flour-and-water paste, or coated with white or carpenter glue to form and blend ground contours. House paint, especially discounted earth-tone flat colors, will be used to color the ground. Fine sand and sawdust do well to add texture, when added to the wet paint. These can later be refined using current materials and techniques.

For ballast I plan to investigate the use of a fine paving sand that comes in 50-pound bags I saw at Menards. I am also excited about the chance to try to modify some of the used and low-cost trolleys into possible passenger and freight motors for interurban use. I plan to try to really distress some wood cars into simulations of equipment needing, or in process of, restoration. Some equipment is covered with tarps awaiting restoration, which lends more modeling opportunities.

Stacks of rails and ties and other supplies will be needed. The lines can be signaled to the extreme, with endless variety. Then there are the displays of signs, signals, and other equipment.

The museum must stockpile old parts to support the continued operation and restoration of vintage equipment. I can add sound, especially below the table. Crossing bells, whistles and horns, and steam and diesel sounds are just some of the effects available through solid-state chips such as ITT or an MRC unit. The list seems endless.

I see this as an opportunity to have a layout with long-term enjoyment in both modeling and operation. The layout, equipment, scenery, and operation can evolve over time, and include endless modeling opportunities. I believe this layout will give me a great deal of pleasure for a long time. ☑

Reader Feedback (click here)

Tyrone Johnsen had Marx and American Flyer toy trains through the 1950s as a child. He became interested in model trains when He first saw a copy of a Model Trains magazine in Dec 1959. His father was kind enough to trade-in all his American Flyer trains for a Varney HO starter set.

Tyrone's a Great Northern fan, likely helped by growing up in Fargo, ND. He has been a member of the NMRA for over 40 years and is a member of the Great Northern Railway Historical Society. Tyrone retired after more than 30 years with an aerospace company.

Upgrading Passenger car couplers

– by Dirk Reynolds
Model Photos by the author

A one evening project eliminating truck mounted couplers ...

1. New Kadee couplers for my SP GS-4 tender and REA baggage car.

Reader Feedback (click here)

Sometimes a model manufacturing company has a hard time evolving. In particular, their products might not lend themselves to prototypical operation. Being locked in the 70s can be a company's worst nightmare. I found such a company when purchasing the only great-looking Southern Pacific Daylight passenger cars on the market. Okay, they don't have interiors, but who runs along their layout looking inside their passenger fleet? 85' passenger cars in the "Daylight" scheme are almost non-existent. You can find "shorty" versions for the beginner and their 18" radius curves, but prototypical cars look better. I looked high and low, and even asked Walthers why they did not make them.

Well, I was told something about BLI coming out with some, but that was NOT what I was talking about. I needed some for an excursion train behind engine 4449.

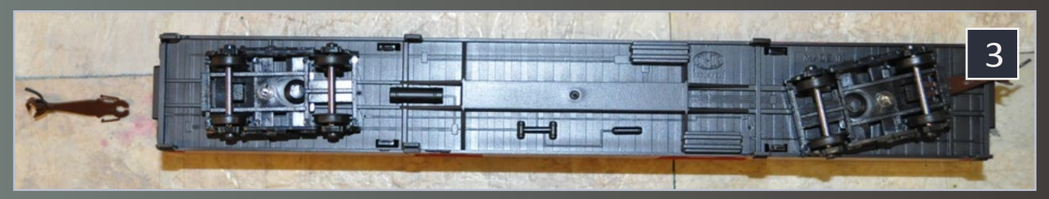
I discovered that Con-Cor made the 85' cars in the "Daylight scheme. So I ordered the cars that I wanted.

I got my shipment and looked at them in the box. They looked good! Good paint, good glass, and correct length. But then I noticed the couplers. I turned them over to find a 1970 coupling system! Not only old Rivarossi style stretch version but on the truck also! Oh my gosh! Derailments...couplers pulled out of their sockets....plastic couplers that stretch and come apart. What a mess! How do I fix this?

Well, here is how I did it.

STEP 1: Analyzing the problem

I inspected the cars and decided that the plastic couplers mounted on the trucks must be replaced with Kadee metal couplers installed on the bottom of the car body. I chose Kadee #5.



2-3. The Con-Cor dome car looks great in the SP Daylight paint scheme in the box. But turn it over and it's a different story with the old Rivarossi style couplers and trucks.

STEP 2: New coupler mounts

4. Midwest Products makes a Scale Lumber Gauge #1124 that shows the thickness of an item in HO Scale. I needed a thickness of 8 inches after some trial and error of different sizes.

The #5 coupler would need shims to support it at the correct height. I tested several sizes of strip styrene, and determined that an HO scale 8" thickness was best. The Midwest Products #1124 Scale Lumber Gauge shows thickness in HO scale feet.

I built an #5 box with coupler to be mounted on top of the shim. Because of the size of screw I used, I drilled a 3/32" pilot hole for it and also reamed out the #5 box hole so the screw would slide through. I then drilled a smaller pilot hole for the screw site.

Why not use CA or other glue? After years of building, I have concluded nothing beats a screw . Glue can find its way into the coupler pocket, seizing the coupler, or you may not have a good joint and the coupler pocket is pulled off the car. Also, how do you replace a broken coupler if everything is glued shut?

I painted the mounts black to hide them a bit better.

If you have several cars, such as the 72' baggage, 72' RPO, 72' sleeper, 85' dome, 85' slumber-coach, 85' 10/6 sleeper, and 85' observation, and the tender end, you can upgrade all the couplers in an assembly-line process. There you go, a simple easy one-evening project to improve the performance of your passenger cars.

STEP 2: New coupler mount *Continued ...*

5. Evergreen Scale Models 9080 Plain .080" thickness is what I used. I began by measuring the width that would be needed. I cut a strip measuring 4 1/2 scale feet. I then measured the depth to be 3 scale feet which proved to be too much for clearance of the truck. I then shrank it down to 2 scale feet.

STEP 2: New coupler mount *Continued ...*

6. I mount the coupler to the body with a screw. It is secure, and allows for easy replacement of the coupler if it should be damaged, something you can't do if it is glued to the body.

7. Old-school Bachmann horn-hook coupler on the tender of the SP GS-4.

STEP 2: New coupler mount *Continued ...*

8. I clipped off the sides of the old mounting area and the screw post mount to make a flat surface. I then assembled a #5 box with a #24 Kadee coupler. Kadee calls for a Bachmann GS-4 to have a #37, but the #24 is shorter and more prototypical. Again a screw is used. The hole was reamed with the 3/32" drill.

9. Finished tender coupled to the REA baggage car.

Reader Feedback (click here)

Dirk Reynolds has been model railroading since the dinosaurs roamed the earth. His family comes from Dupo, Illinois, and his Grandfather engineered the "doodlebug" motor car that ran from St. Louis, Missouri to Marion, Illinois.

Dirk also ran his own hobby shop for nine years in Dupo, under the name of Reynolds Railways. It closed in early 2010, but he is now operating out of his home in Columbia, Illinois under the name Dirk's Trains.

He attends all the local train shows, and runs The Warrior Express show that began in February 11, 2012 in Arnold, Missouri. Contact Dirk at comptrain2002@yahoo.com.

First Look

War World Scenic Static Grass

Video product review / how-to

by Ken Patterson

Reader Feedback
(click here)

Playback problems? Click to try a different version.

What better way to learn about a new static grass product than to have Ken Patterson show how to use the product? Watch and see the great results of using this static grass, from 2mm to 10mm in length.

To learn more about War World Scenic products go to: war-world.co.uk.

➔Visit pwrs.ca

Reader Feedback (click here)

Available in HO and N scale

NARC: BCOL/BCNE 4000 cubic-foot coal gondola

Over the next 10 pages, MRH presents a special product showcase of North American Railcar Corporation's 4000 cubic foot coal and sulphur gondolas. These click-n-spins are all of the same HO scale gondola family, exhibiting their variations available in both **HO and N scale**. Norm Skretting covered the story of these cars in the April 2013 issue of *Model Railroad Hobbyist*: **click here for more**.

NARC: CN (ex-Procor) 4000 cubic-foot coal gondola

The 4000 cu ft. gondola was the preferred car style of CN for transporting coal to either the west coast ports for export or to ports on Lake Superior (Thunder Bay, Marmion Lake) for use by Ontario Hydro. These cars could carry a cargo of 100 tons with a little room for overloads. When the maximum capacity was increased to 286,000 lbs, all cars had the load limit increased by 23,000 lbs.

➔Visit pwrs.ca

Available in HO and N scale

NARC: CN single-rotary 4000 cubic-foot coal gondola

The first cars were built by National Steel Car in 1970 for CN as 199000 series. The first eight in the series were built as double rotary cars with a rotating drawbar on each end. Since all port terminals used rotary dumpers, this necessitated the use of rotary coupling systems on the cars. The rotary coupler end of the car was indicated by a yellow stripe or stripes on that end of the car.

NARC: CN double-rotary 4000 cubic-foot coal gondola

Double rotaries had a yellow stripe on both ends, as well as two air hoses, one on each side of the drawbar. This made it easier to couple the train line to cars on either end as well as avoided twisting the air hose around the drawbar while being dumped. Prior to switching to aluminum equipment, CN had well over a thousand of these cars in service during the 1970s, 80s and 90s.

➔Visit pwrs.ca

Available in HO and N scale

NARC: CN (ex-Ontario Hydro) 4000 cubic-foot coal gondola

Other than Sultran equipment, the cars that ran as complete sets for the longest period of time ended up being the CNHX cars built for Ontario Hydro service. The balance of the cars got lumped together in a pool, making it possible to find any style and number series in any set of equipment (pwrs.ca – North American Rail Car.)

NARC: BCNE/CN 4000 cubic-foot coal gondola

The way these cars were operated allows the modeler to purchase a wide variety of these models to easily build a train longer than 12 cars for either coal or sulphur service, or run shorter cuts of cars to move other commodities such as coke, ties, or sulphur from smaller plants.

➔Visit pwrs.ca

Available in HO and N scale

NARC: Procor CN 4000 cubic-foot coal gondola

All of the coal mines on CN prepared the coal in a similar fashion. The coal was pulverized before being stockpiled and loaded. The mines sprayed each car with a latex spray to reduce the risk of coal dust blowing out of the cars. Each loadout used a hopper scale to weigh the coal before it was loaded into the cars.

NARC: Procor UNPX 4000 cubic-foot coal gondola

All locomotives on coal trains needed to have operating paceset-ter equipment, allowing the trains to move at extremely slow speeds (typically 0.25 MPH), a requirement of the loadout opera-tor. Frequent stops to fill the loadout hopper were common and unpredictable.

➔Visit pwrs.ca

Available in HO and N scale

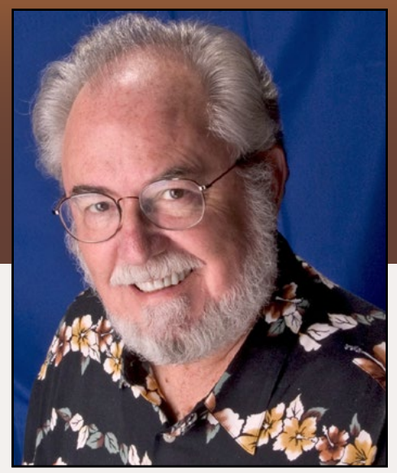
Reader Feedback (click here)

NARC: Sultran 3-line 4000 cubic-foot sulphur gondola

As large gas plants in Alberta began to accumulate large stockpiles of solid sulphur, the gas companies formed a sulphur marketing group, called Sultran, charged with selling this form of sulphur to the world market. Each gas plant has/had a flood loader capable of loading 100+ car unit trains made up of Sultran's bathtub and 4000 cu. ft. gondolas.

NARC: Sultran 2-line 4000 cubic-foot sulphur gondola

There were/are three sulphur loading gas plants northwest of Edmonton on the Sangudo Sub at Windfall, Benbow, and Kaybob. In addition, there are two sulphur-loading gas plants on the Ram River Sub west of Red Deer near Rocky Mountain House at Ram River and Strachan, and one plant at Bryan Spur on the Foothills Sub southwest of Edson.



The Old Yardmaster

Reader Feedback (click here)

May 2014:
The latest model railroad products, news & events

by Richard Bale and Jeff Shultz

End of the line for Model Power-Mantua

In a surprise announcement released at the end of April, Model Power said it has ceased all operations. Based in Farmingdale, New York, the company manufactured N and HO scale locomotives and rolling stock, and O-27 and G scale accessory items under the Model Power and Mantua brands. The company also marketed cast metal vehicles and aircraft. Its products were sold world-wide. Unnamed officials of the family-owned business expressed their thanks to employees and customers who have supported the enterprise for the past 50 years …

Trainfest updates

Ken Jaglinski has been appointed the chair person for Trainfest, the annual show presented by the NMRA Wisconsin Southeastern Division each fall. Jaglinski, a lifelong model railroader and long- time NMRA member, will take over the position from John Tews who retired earlier this year. Trainfest is among the nation's more important model railroad events and has

become an important public showcase for the hobby. Other Trainfest changes include the addition of inexpensive booths of reduced size for smaller exhibitors. The down-sized exhibit areas are seen as a way to encourage individual hobbyists or clubs to exhibit smaller layouts. Trainfest 2014 will be held November 8-9 at the Wisconsin Exposition Center in the State Fair Park in West Allis, Wisconsin. Additional information is available at trainfest.com …

Laurance Kline 1942-2014

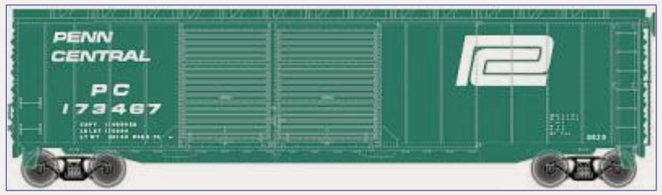
Larry Kline passed away from a massive stroke on April 17. He was 71. A native of Philadelphia, Larry graduated from Drexel University and went on to earn his masters and Ph.D degrees in electrical engineering from Carnegie-Mellon University. He gained international recognition for his research in plasma physics, artificial intelligence, and computer simulations.

Larry was an active member of the Pennsylvania Railroad Technical & Historical Society as well as the Pittsburgh & Lake Erie Historical Society. His extensive research and knowledge of the prototype led to co-authoring "The Postwar Freight Car Fleet" with Ted Culotta.

Larry was a dedicated railroad historian and accomplished railroad modeler throughout his life. He earned a Master Model Railroader award from the National Model Railroad Association in 2012. He happily shared his knowledge and experiences with fellow modelers and was a frequent clinician at various RPM meets including Naperville and Cocoa Beach.

Larry was liked, admired, and respected by the entire model railroad community. He will be missed. MRH extends condolences to Larry's wife Dana, and other surviving family members.

CLUB CARS

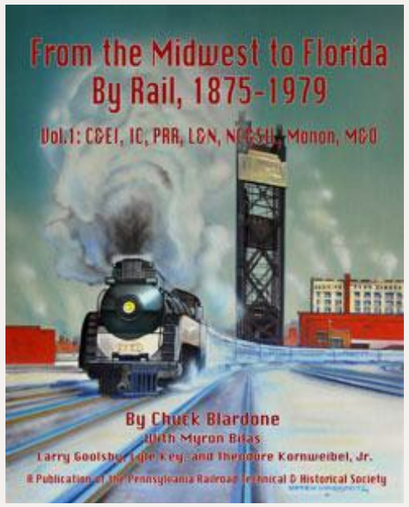


Penn Central Railroad Historical Society is selling an HO scale 50' PC double-door boxcar. Produced by Atlas, two road numbers are available at $30.95 each for members, $32.95 for non- members, plus $6 shipping per car. Visit pcrrhs.org to order.

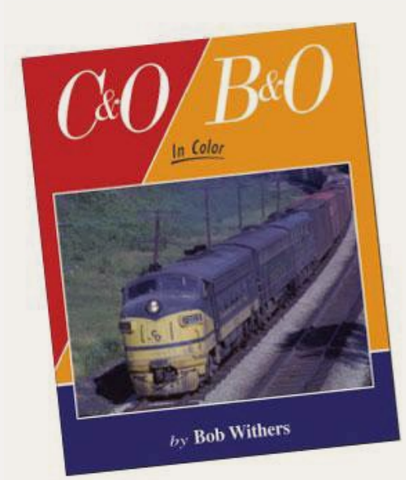
Thunderbird Model Railroad Club of Phoenix, Arizona, is selling an anniversary car based on an Accurail AAR triple-bay hopper with offset sides. The HO scale model is custom decorated for the Phoenix, Turnbow & Apache Railroad and includes 60th Anniversary logos of the club. The model is available ready-to-run with a coal load, metal wheels, and Kadee couplers at $25.00 each. The same model is also available in kit form, less the load and Kadee couplers, at $15.00. To order visit thunderbirdmodelrrclub.com.

NEW PRODUCTS FOR ALL SCALES

"From the Midwest to Florida by Rail, 1875-1979, Vol. 1 of 2" is a new book by Chuck Blardone, with contributions from Myron Bilas, Larry Goolsby, Lyle Key, and Theodore Kornweible, Jr. The book is published by the Pennsylvania Railroad Technical & Historical Society but is about much more than just the PRR.



This first volume covers service by the C&EI, PRR, L&N, NC&StL, Monon, CofGa, ACL, SAL, and FEC to all the resort cities of Florida. Volume 2 will cover the NYC, Q&C, Southern, Frisco, and Amtrak, as well as more PRR. This initial volume is 520 pages, hard-bound, with a list price of $109.99. It is available through the PRRT&HS eStore at **prrths.com/estore/index_estore.html**.



Morning Sun Books (morningsun-books.com) has released *"C&O/B&O, In Color"* by respected railroad author Bob Withers. The book documents the non-merger relationship between the Chesapeake & Ohio and the Baltimore & Ohio. Although not a true merger, the 1960s affiliation of "C&O/B&O" appeared on timetables, advertisements, corporate reports, and especially trackside where C&O and B&O locomotives operated side by side – all making for great photo opportunities.

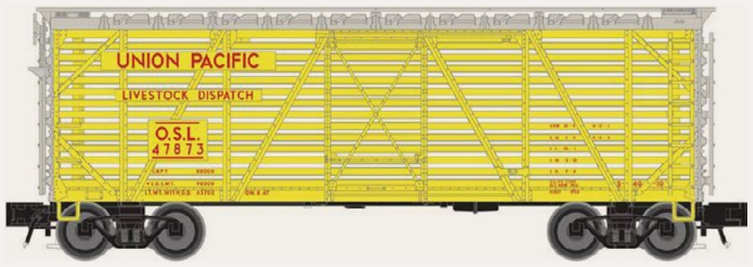
Also new from Morning Sun is *"Milwaukee Road Power In Color Volume 2: Freight Covered Wagons and Second-Generation Roadswitchers"* by Stephen M. Timko. This second volume deals with the covered wagons built by EMD and FM as well as the second-generation road switchers that ushered in the 1960s. The Fairbanks-Morse C-Liners are also covered, as well as EMD's F3s, F7s, F9s, and FP7s, plus GE U-boats. For additional information visit the above website.

LARGE SCALE PRODUCT NEWS

Accucraft Trains (accu-craft.com) is selling a 1:32 (45mm) scale model of a Southern Pacific 2-6-0 class M-6 Mogul. The beautifully handcrafted model is available for electrical (24 volt DC) operation or as a butane-fired live steam model. Visit the above website for more information and details on other large scale models.

O SCALE PRODUCT NEWS

Atlas O (atlaso.com) has scheduled three new models for release during the 4th quarter of 2014. They include a Trainman series bay window caboose decorated for Union Pacific with a "Trucking on Down the Track" slogan. Additional road names will be Baltimore & Ohio, Long Island Railroad, Nickel Plate Road, and two versions of Chessie System.



They will also release a Trainman series 40' stock car with a steel diagonal panel roof and Dreadnaught ends.

In addition to the UP version shown, the O scale ready-to-run model will be available decorated for Southern Pacific, and Texas & Pacific.

A 55-ton USRA twin-bay hopper will be available from Atlas O in the 4th quarter of 2014. Road names for the open top car will be Chesapeake & Ohio, Ontario & Western, Southern Pacific, Wabash, and Pennsylvania Railroad.

O scale models scheduled for release by Atlas O in the 1st quarter of 2015 include a 36’ wood-sheathed reefer from the truss rod era. Ice hatches and the type of truss rod on the Master series model will be appropriate to the road name. In addition to the NADX Frigicar shown above, decorating schemes will be C.F. Vissman & Co., Klinck Packing, Schott Brewing, Michigan Alkali, and Norfolk Poultry.

Also projected for release in the 1st quarter of next year is a Master series GP7 diesel locomotive. Body details and appurtenances of the O scale model will be for a Phase II version of the EMD prototype. Road names will be Detroit, Toledo & Ironton; Denver & Rio Grande Western; Union Pacific; and Erie Lackawanna (above). Two-rail and 3-rail models will be available as well as an unpowered version. Visit the above website for additional information and pricing.

S SCALE PRODUCT NEWS

P-B-L (p-b-l.com) has imported both standard and narrow gauge S scale models of this 70-ton class C Climax locomotive. The production models will be handcrafted in Korea by Boo Rim Precision. The model was scaled from an existing prototype in Willits, not far from P-B-L headquarters in Ukiah, California. Visit the above website for additional information.

HO SCALE PRODUCT NEWS

Accurail (accurail.com) current release schedule includes HO scale kits for a quartette of 40’ single-sheathed boxcars. First up is a CB&Q Burlington Route car with wood ends and National wood doors. The model represents a freight car built in 1918 and rebuilt in 1934.

The single-sheathed New York Central boxcar has National wood doors and Murphy corrugated steel ends. The prototype was built in 1919 and rebuilt in 1937.

The Detroit, Toledo & Ironton boxcar represents a car built in 1923 and rebuilt in 1948. It has the same ends and doors as the NYC car.

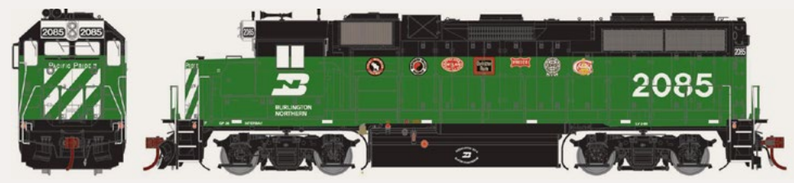
The Santa Fe car is based on a box car built in 1925 with Murphy corrugated steel ends and Youngstown steel doors.

Accurail's PFE 40' steel reefer with plug doors represents a reefer built in 1951 and rebuilt in 1966. It is available in a specially priced 3-pack. Check the above website for details.

The modern Bangor & Aroostook 50' insulated plug-door boxcar has a diagonal panel roof and improved Dreadnaught ends. It is based on a prototype built in 1970. Except as noted, all Accurail kits mentioned have an MSRP of $16.98.

Athearn Division of Horizon Hobby (athearn.com) is selling an HO scale 250-ton crane paired with a complimentary boom tender. Road names available are Santa Fe, Southern Pacific, and Canadian Pacific. The Ready-to-Roll set has an MSRP of $59.98.

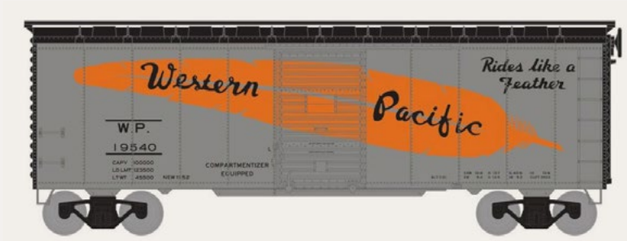
Athearn has scheduled another run of its Genesis series SDP45 diesel locomotive for release in November. In addition to the Erie Lackawanna Bicentennial scheme shown here, road names will be Southern Pacific with "SP" on the nose, plus BN, Conrail, and VMV Leasing (ex CR).



Also scheduled for release in November is another run of Genesis GP38-2 diesel locomotives. Road names on the Athearn model will include Burlington Northern (Pacific Pride II scheme, above), CSX YN2, Boston & Maine, B&M Bicentennial, Grand Trunk, Iowa Interstate, and Southern Railway.

The third locomotive in Athearn's November schedule is an Alco RS3. Road names for the Ready- to-Roll series model will

be New York Central, Central of New Jersey, Canadian National, Reading, and Gulf Mobile & Ohio.



Also due in November is an Athearn Ready-to-Roll 40' steel boxcar with an MSRP under $20.00. Road names with Youngstown doors will be Western Pacific (feather scheme), and Denver & Rio Grande Western (cookie box slogan). Road names with Superior steel doors will be New York Central (jade), Norfolk & Western (hamburger herald), Ferrocarril Méxicano, and Akron Canton & Youngstown.

During the Canadian Supertrain event last month in Calgary, Alberta, Athearn announced plans to release a new group of Genesis series locomotives in late December. They include two Canadian Pacific GP9s: one in the red, white and black Pac Man scheme, and a passenger version in maroon and gray with script lettering.

A Canadian National GP9 Phase I with road number specific details including a muffler-type spark arrester will also be in the December release, along with a yellow and blue Santa Fe GP7u with a Topeka cab.

Visit the above website for pricing information and other details on these newly announced Athearn models.

Atlas Model Railroad Company (atlasrr.com) has scheduled delivery of HO scale Fairbanks-Morse H16-44 diesel locomotives for the 4th quarter of this year. Phase II body types with sill-mounted handrails will be available for Santa Fe, Chihuahua al Pacifico, Erie Lackawanna (D&LW transition scheme), and MKT. Road names for Phase I early body types will be New York Central, Southern Railway, and New Haven. Details such as fuel tank skirts, headlight position, and the type of truck sideframe will be road-specific. The Atlas H16-44 will have an MSRP of $159.95 or $269.95 with a factory-installed DCC decoder.

Atlas has included a 40' plug-door boxcar in its final release for 2014. Road names will be Fruit Growers Express-RBNX (above), Fruit Growers Express-ACL, Great Northern-RBWX, Green Bay & Western, Mountain Pine Lumber, and Penn Central. Visit the above website for additional details including pricing information.

The next production release of Atlas' Thrall 53' triple articulated well cars has been scheduled for the 4th quarter of 2014. Interesting spotting features include angular wheel cutouts, wide flared bottom sections, and narrow side posts. In addition to the TTX scheme shown above, the HO scale ready-to- run models will also be available in the blue, white, and red paint scheme of Pacer Stack Train. The well cars will be sold as a triple set at an MSRP of $109.95. An undecorated set will list at $89.95.

Bachmann Trains (bachmann-trains.com) has new HO scale versions of the Pennsylvania Railroad class GG-1 electric locomotives. The ready-to-run model is produced from new tooling and features 12-wheel drive and twin operating metal pantographs. The locomotive can operate from overhead wire if desired. DCC-ready versions have an 8-pin socket for an aftermarket DCC decoder (not included).

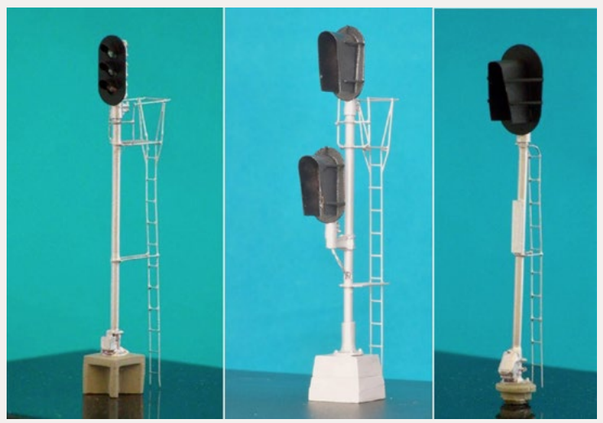
The GG-1 is also available in a DCC sound-equipped version that includes Bachmann Sound Value SoundTraxx. Sounds in the 16-bit sound package include motors with blowers, pantograph extension and retraction, air compressors, short and long horns, and a bell. Available decorating schemes include PRR in Brunswick green with a single gold stripe, PRR Brunswick green with five gold stripes (above), PRR Tuscan red with five stripes, PRR in congressional silver scheme with a red stripe, and Penn Central in black with white lettering.

An HO scale GP40 is also available now from Bachmann. Road names include ATSF, Conrail, Chessie, Amtrak, and MKT. Visit the above website for pricing.

As mentioned here last month, **BLMA** (blma-models.com) has announced the second production run of ATSF 60' Bx-166 double-door boxcars. BLMA will produce the HO scale ready-to-run model in both the as-delivered Super Shock Control (1974, lower photo) and Shock Control schemes (1982, top photo). The preliminary CAD drawings for the project showed the presence of Automatic Equipment Identification (AEI) tags on each side of the car, however, the 1974 version of the car will not have AEI tags. The models are planned for release late this year.

Broadway Limited (broadway-limited.com) plans to deliver several modernized versions of Union Pacific's 4-12-2 steam locomotive this summer. Alco built 88 of the huge 3-cylinder steam locomotives in the late 1920s. They met their goal for handling high speed freight on relatively flat country, but the third cylinder

was a constant maintenance problem. BLI's Paragon2 HO scale brass hybrid models represent modernized versions of the prototype. They will be available in four road numbers, unlettered, and in varnished brass. The MSRP will be $699.99. For complete details visit the above website. One prototype locomotive survives, at the Fairplex Museum in Pomona, California.



Details West (detailswest.com/signals.htm) has expanded its selection of assembled HO scale operating signals. The signals are produced from new tooling developed from manufacturer's blueprints and field photos. Construction is of cast pewter and brass with etched brass number plates. The assembled signals are fitted with three-color LEDs (green-yellow-red) wired for common anode. Resistors (not included) are required to connect to your choice of detection or other electronic circuit (not included).

Signals shown above are General Railway Signal (GRS) style D with individual visors (left), GRS double-headed 3/3 style D with snow shield (center), and Union Switch & Signal type W with snow shield (right). Visit the above website for an illustrated catalog of available signals.

ExactRail (exactrail.com) has introduced a Norfolk Southern Thrall 54' Protector Coil Car. The Protector name stands for PROtected TEmperature Coil Transport On Rail. Although these cars have the same body as the Conrail coil shield car, Thrall built the NS prototype with a distinctive aluminum insulated hood. The model comes equipped with Kadee #156 couplers and rides on ExactRail ASF 100-ton Ride-Control trucks with machined 36" wheels. The HO scale ready-to-run Platinum series model is available in 12 numbers at $46.95 each.

Funaro & Camerlengo (fandckits.com) is selling a resin kit for a Reading class XAd 40' auto boxcar. Reading Railroad Historical Society member, Dick Foley, introduced the kit during his presentation on Reading auto cars at the recent Valley Forge RPM Meet. The HO scale kit features a one-piece cast resin body; Allen Wood diamond-plate running board, diagonals and brake step; Duryea underframe;

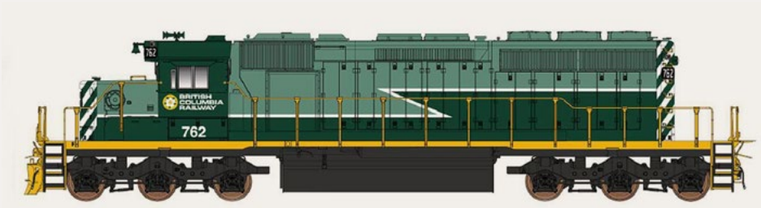
5-5-5 Murphy corrugated steel ends; and appropriate decals. The kit is sold less trucks and couplers at $44.99 each.

Joe Rutter, owner of **Full Steam Ahead** (fullsteamahead.ca) is selling an HO scale laser-cut structure kit dubbed Broderick's Bicycle Shop. The design of the limited edition craftsman style kit is based on an actual bicycle shop in San Jose, California. Proceeds from the sale of the kit will be used to help Rutter send a promising young student to a high-level volleyball camp this summer. Rutter told MRH that he and the student developed the kit over the last few months during their lunch hours together.

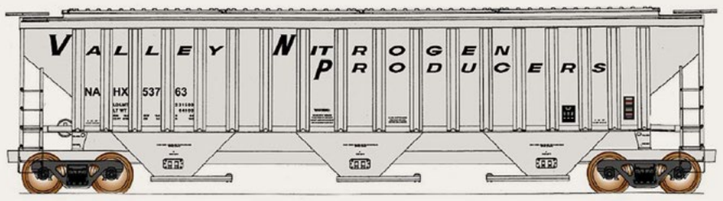
Components in the 8" x 3.75" structure include a metal chimney casting donated by Brian and Jill Bolinger of BEST Trains. Plastic cast windows and doors are from Tichy. The roofing material and interior walls, including wainscoting, are made of a new, easily applied laser-etched "skin." Also included are laser-cut bicycles, laser-etched sidewalks, appropriate signage, and an octagonal Victorian corner roof. The kit sells for $69.99 plus $10.00 shipping.

GLX Scale Models (glxscalemodels.com) is selling a kit for a brick storefront based on a turn-of-the- century Canadian structure in Beachburg, Ontario. Called Cameron Block, the shallow one-piece flat front structure replicates Victorian style brickwork with sandstone and brownstone ornamental details. The gable is capped

with metal dentils and metal ball finials. In addition to the one-piece resin cast front, components in the kit include metal, wood, and plastic detail parts for the railing, flag pole, columns, and windows. Both Canadian and American flags are in the kit. Signs shown in the illustration are not included. The completed structure measures 4.250" wide x 5" high x 1.125" deep. The MSRP is $39.99.

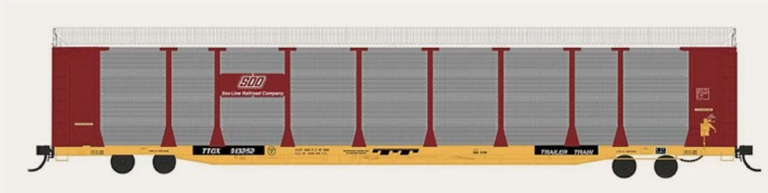


InterMountain Railway (intermountain-railway.com) is taking reservations for HO scale SD40-2 diesel locomotives for delivery late this year. In addition to the British Columbia Railway scheme shown here, locomotives will be available decorated for Conrail, MKT, Florida East Coast, Canadian Pacific, BBNSF Heritage III scheme that is commonly known as "swoosh", Rock Island, and Chessie System. Visit the above web site for additional details including pricing.



Also coming from InterMountain sometime in November or

December are 4750 cu. Ft. triple-bay covered hopper cars. HO scale ready-to-run models will be available for Reading, Blue Mountain & Northern; Albert City Farmers; Big 6 Co-op; Cook Industries; Aurora Co-Op; Lapeyrouse Grain Corporation; General Chemical; Percival Grain Inc.; Producers Grain; and as shown here, Valley Nitrogen Producers. The release includes an undecorated kit that will be sold without couplers. Visit the above web site for additional details including pricing.



HO scale ready-to-run models of TTX bi-level auto racks are scheduled for release by InterMountain late this year. Racks with TTX flats will be offered in four road numbers each for Union Pacific, Soo Line, B&O/Chessie System, Providence & Winchester, Ferromex, and Grand Trunk.

InterMountain's November-December production release includes another run of AAR Alternate Standard Twin-Bay Hopper Cars. In addition to the Litchfield & Madison car shown here, decorating schemes for the HO scale model will be Santa Fe, C&O (with Dreadnaught ends), C&O (notched arch ends), Chesapeake & Ohio (notched arch ends), Nickel Plate Road, Ohio State University, and Baltimore & Ohio (Dreadnaught ends). The ready-to-run model will have an MSRP of $39.95. An undecorated kit is currently available at $19.95 less couplers.

Kadee Quality Products (kadee.com) is quoting a June release date for an HO scale Central of Georgia 40' PS-1 boxcar. The decorating scheme includes a "Compartmentizer" banner on the right side and "The Right Way" slogan on the left. The model replicates the 10-panel welded sides and 7' Superior five-panel doors of the prototype.

Also due from Kadee next month is a Lehigh & New England 50-ton AAR twin-bay hopper car with flat ends and offset sides.

Kadee's July production schedule includes two 40' boxcars – a Union Pacific car with 8' Youngstown doors (above), and a Grand Trunk Western car with 8' six-panel Pullman-Standard doors (below).

Pricing and additional details are available at the above website.

KatoUSA (katousa.com) has added Union Pacific and San Luis & Rio Grande to its lineup of HO scale SD90/43MAC locomotives. Previously announced road names include Union Pacific (We Will Deliver slogan), Canadian Pacific (Golden Beaver),

and Indiana Rail Road. See you dealer or visit the above website for pricing and availability.

Nick & Nora Designs (nickandnoradesigns.com) is selling an HO scale kit for a maintenance of way shed. The lineside MOW structure has a footprint of 2.0" x 2.8125." Components include laser-cut walls, cast resin doors, and Tichy windows. For additional information including pricing visit the above website.

NJ International (njinternational.com) has added two new items for HO scale flat car loads. A 15' dozer blade (above left) is available now in a 3-pack at $15.99. The backhoe buckets are available in 5-packs at $17.99.

NJ International has also released a new run of crane sections. They come in a 5-pack at $17.99.

QConnection (qconnection.biz) is selling kits for a 1943 version of a CB&Q class HC-1 twin-bay 70- ton hopper. Priced at $24.95 each, the HO scale kit features Kadee #158 whisker couplers and Kadee two-piece self-centering National type B-1 trucks. Produced for QConnection by Bowser, the kit includes additional weight to meet the NMRA recommended practice.

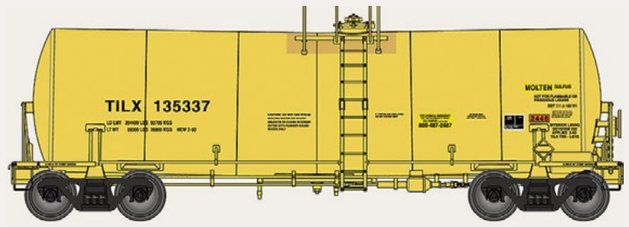
Rapido Trains (rapidotrains.com) has expanded the selection of road names on the next production run of its HO scale steam generator cars. New roads will include the Amtrak 2 scheme shown above, plus Spokane, Portland & Seattle; Ontario Northland (green scheme); and Canadian Pacific.

Road names from the first production run that are being rerun include CN (1954 green scheme), CN (noodle), D&RGW, GN, Milwaukee Road, Milwaukee Road (yellow UP scheme), NYC, NP, Ontario Northern (chevron scheme), PRR, ATSF, UP, VIA Rail Canada, and undecorated.

Rapido's steam generator car is based on a CN prototype built by General Motors. Rapido's HO scale ready-to-run model features working backup lights, complete underbody detail, and BX

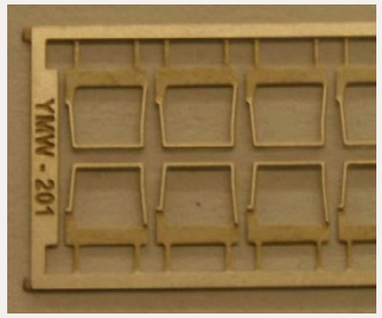
express trucks. A steam generating option is also available. The new run is scheduled for early 2015 at an MSRP of $79.95 each.

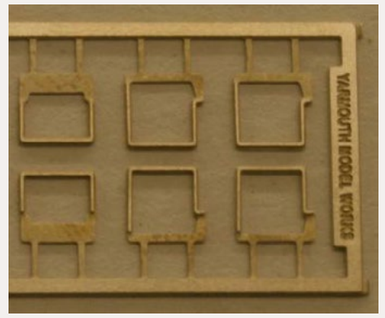
SoundTraxx (soundtraxx.com) has introduced CurrentKeeper™, a new device designed to insure continued operation of DCC-equipped locomotives during power loss. Measuring 40 mm x 6 mm x 11 mm, SoundTraxx reports that its new CurrentKeeper™ will maintain power to a DCC decoder for up to 10 seconds. The CurrentKeeper™ has an MSRP of $24.95 each.



Walthers (walthers.com) has scheduled a release date of July for the next run of its Trinity-built 14,000-gallon molten sulfur tank car. Road names for the ready-to-run model will be General American-GATX, First Union Rail-TEOX, First Union Rail-NDYX, Sulcom Inc-SUJX, Trinity Industries-TIMX and Trinity Industries-TILX as shown here. The Proto series model features see-through etched-metal walkways and end platforms. The MSRP will be $39.98 each.

Two Cornerstone kits for residential houses will be released in July at an MSRP of $24.98 each. They include a brick Cape Cod house with two optional front walls, and a frame ranch house that can be assembled with either a bay or picture window.





Yarmouth Model Works (yarmouth-modelworks.com) continues to expand its line of detail parts for prototype modelers with the release of five types of replacement stirrup steps. The HO scale etched brass steps are designed to replace the broken plastic stirrups on plastic freight cars. They can also be used for scratchbuilding and other applications. Item 201 on the left has 14 replacement steps for Red Caboose, Front Range, and InterMountain (IMRC) steel boxcars. Item 205 has 12 replacement steps for IMRC R-40-10 reefer cars. Additional replacement steps are available now for IMRC R-40- 23 reefers, IMRC type 27 tank cars, Red Caboose type 103W tank cars, and Proto 2000 type 21 tank cars. Each item sells for $3.00 and has 12 to 14 steps. Eleven more sets of replacement steps are scheduled to be released this summer. For additional information or to order visit the above website.

N SCALE PRODUCT NEWS

Atlas Model Railroad Company's (atlasrr.com) 4th quarter release schedule for 2014 includes another run of the popular Trainman series PS-2

covered hopper cars. In addition to the Stauffer Chemical scheme shown above, other road names will include Chicago & North Western, Chicago Great Western, Monon, Norfolk & Western, Southern Railway, and Southern Pacific. The N scale ready-to-run model will have an MSRP of $15.95. An undecorated version will be available at $12.95.

Atlas Trainman® series 20’ high-cube MSW trash containers are also in the 4th quarter release. Road names will be AWIO, DSEU, USWX and DSWU. The containers will be available in 4-packs at an MSRP of $20.95. To transport the N scale containers, Atlas will release appropriate 85’ trash flat cars. Road names for the ready-to-run open-deck flats will be Allied Waste, East Carbon-DSEX, and USA Waste. The N scale flat cars will have an MSRP of $26.95. An undecorated version of the ready-to- run model will list at $21.95. Speaking of trash, an informative reference guide to trash train operation is David Casdorph’s *“Railborne Trash & Waste Containers of New Jersey”*. For details on the 156 page soft-cover book visit **atlasrr.com/Books/dc-trashcontainer.htm**.

Additional N scale releases scheduled for the 4th quarter include an 89’4” flat car. It is based on an ACF prototype and will offer two styles of hitch. Road names will be Southern Pacific, Great Northern, ECDC Environmental, and Trailer Trains. Visit the above web site for pricing and other details.

Atlas has included a Trainman series 40’ plug-door boxcar in its final release for 2014. Road names will be Merchants Despatch-PVYX, Mountain Pine Lumber, Penn Central, Transport Leasing Co., and North American Car-MKGX as shown here. The N scale ready-to-run model will have an MSRP of $17.95. An undecorated version will list at $13.95.

The 1st quarter of 2015 will see the arrival of two popular Atlas N scale diesel locomotives. The Chicago & Illinois Midland Master series SD9 shown above will also be available for Elgin, Joliet & Eastern; Duluth Missabe & Iron Range; Denver & Rio Grande Western; Baltimore & Ohio; Norfolk & Western; and Pennsylvania Railroad. The ready-to-run N scale version of EMD’s six-axle workhorse will have an MSRP of $114.95. It will also be available with a factory-installed decoder at $149.95.

Atlas’ N scale version of a Fairbanks-Morse H16-44 diesel locomotive will be offered with a Phase I early body style with sill-mounted handrails. Road names will be New York Central, Southern Railway, and New Haven. Decorating schemes for

Phase II version will be Santa Fe, Chihuahua al Pacifico, Erie Lackawanna (D&LW transition scheme), and MKT. The H16-44 will have an MSRP of $119.95 or $159.95 with a factory-installed decoder.

Bachmann (bachmann-trains.com) has released its N scale Baldwin 4-6-0 steam locomotive in new road names. In addition to the Nickel Plate scheme shown here, the ready-to-run model is available decorated for Chesapeake & Ohio, Baltimore & Ohio, and Southern Railway in candy-apple green. Visit the above website for pricing information.

As mentioned here last month, **BLMA** (blmamodels.com) has announced the second production run of ATSF 60' Bx-166 double-door boxcars. BLMA will offer the N scale ready-to-run model in both the as-delivered Super Shock Control (1974, lower photo) and Shock Control schemes (1982, top photo). The preliminary CAD drawings for the project showed the presence of Automatic Equipment Identification (AEI) tags on each side of the car. In a recent announcement BLMA has clarified that the 1974 version of the car will not have AEI tags. The models are planned for release late this year.

InterMountain Railway (inter-mountain-railway.com) is taking reservations for N scale SD40-2 diesel locomotives for delivery late this year. In addition to the Rock Island scheme shown here, locomotives will be available decorated for British Columbia Railway, Conrail, MKT, Florida East Coast, Canadian Pacific, BNSF Heritage III scheme that is commonly known as "swoosh", and Chessie System. Visit the above website for additional details including pricing.

Also coming from InterMountain sometime in November or December are 4750 cu. ft. triple bay covered hopper cars. Ready-to-run N scale models will be available for Reading, Blue Mountain & Northern; Albert City Farmers; Big 6 Co-op; Cook Industries; Valley Nitrogen Producers; Aurora Co-op; Lapeyrouse Grain Corporation; General Chemical; Producers Grain, and as shown here, Percival Grain Inc. Visit the above website for additional details including pricing.

KatoUSA (katousa.com) has N scale models of both early (pre-1990) and mid-production (post-1990) versions of EMD's popular SD40-2 diesel. Road names for early units

include Wisconsin Southern, Pan Am Railway, Chicago North Western, and Union Pacific as shown above.

Mid-production SD40-2s have deck-mounted ditch lights, and road-specific horn and air conditioner placement. In addition to the Norfolk Southern Maersk unit shown above, road names available now for mid-production locomotives are Burlington Northern (standard scheme), Illinois Central, and ATSF. Additional information including pricing is available at the above website.

Micro-Trains Line (micro-trains.com) has released several new N scale ready-to-run models this month including an 83’ Pullman sleeper decorated for New York Central.

New freight cars include a 50’ Baltimore & Ohio double-door boxcar featuring a small dome herald and large, billboard style B&O.

This Chicago North Western 100-ton triple-bay hopper car includes a coal load. The prototype was built in 1966 and was most recently repainted in 2005.

Southern Pacific’s 40’ boxcar with aluminum sides and roof is available from Micro-Trains in two numbers.

M-T’s 39’ tank car is decorated for Canadian Industrial Alcohol Co. Ltd. The single-dome tanker is also available decorated for the U.S. Navy. Additional N scale freight cars released by Micro-Trains include a 36’ wood sheathed reefer with steel underframe decorated for URTC Heileman Brewing. The prototype was built by ACF in 1934. Also a 40’ Swift refrigerator car and a 61’ Union Pacific AAR class FB bulkhead flat car with a pipe load. For additional information including pricing visit the previous website.

Pacific Western Rail Systems (pwrs.ca) has contracted with Rapido Trains to create N scale Canadian Pacific Railway 10-5 sleepers. Like the prototype, the N scale models will be based on ex-New York Central Panorama cars. The ready-to-run

models will be available exclusively from Pacific Western Rail Systems. Pricing and release dates are expected to be confirmed soon.

Trainworx (train-worx.com) is taking reservations for an N scale ready-to-run four-bay hopper cars in the following road names: Rio Grande (the Action Road slogan), Mo-Pac (eagle), Mo-Pac (buzz saw), C&EI, TP, CTRN, Clinchfield (white), and Clinchfield (yellow). Delivery is planned for this fall.

Also due late this year from Trainworx is a run of GS general service drop-bottom gondola cars. The ready-to-run model will feature automatic magnetic knuckle couplers and Fox Valley solid bearing trucks with metal wheelsets. Road names will be Santa Fe, Northern Pacific, Norfolk & Western, Southern Pacific (with SPL circle), and Southern Pacific (without SPL circle). Visit the above website for additional information including pricing.

Woodland Scenics (woodland-scenics.com) has added two assembled N scale structures to its Built & Ready Landmark Structure series of buildings. Shown above is the Davenport Department Store, a three-story commercial Victorian structure with a corner turret topped with an octagonal roof. The large street level windows feature fashion mannequins. Additional features include roof detail, wrought-iron balconies and fire escape, appropriate signage, awnings, and light fixtures.

Also new is Home Sweet Home, an N scale Victorian home with a Mansard roof, vintage weather vane and intricately styled dormers with flowered window boxes. Other details are bracketed eaves, a storm cellar, woodpile, propane tank, and a back porch with propped open screen door. Visit the above website for additional information and pricing.

NEW DECALS, SIGNS AND FINISHING PRODUCTS

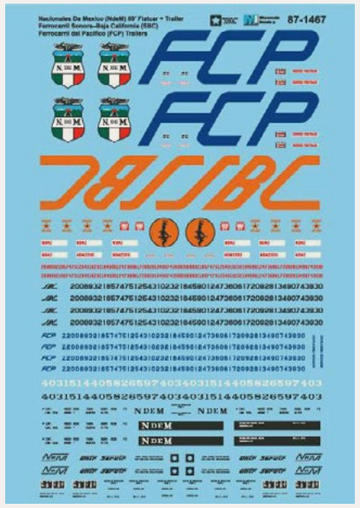
Hubert Mask of **Mask Island Decals** (maskislanddecals.com) has announced the availability of three new HO scale lettering sets. Each set has enough material to decorate two cars.

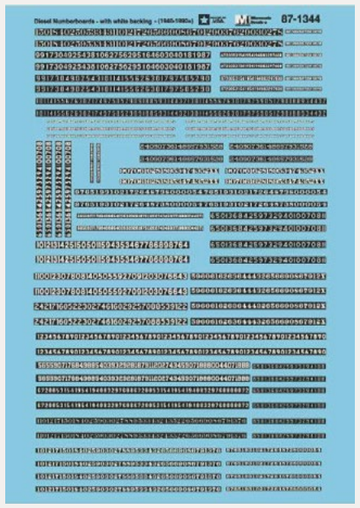
Set 87-256 is for Milwaukee Road flat car as rebuilt in 1981.

Set 87-257 will letter Rock Island "Route of the Rockets" 40' boxcar as painted in the road's Biddle Yard.

Set 87-258 is for Rock Island's 40' Rocket Freight boxcars from the 1949-era. Visit the above website for pricing and ordering instructions.

Microscale Industries (microscale.com) has introduced a new illustrated e-catalog with a dynamic index that will allow modelers to search for specific decals by road name or catalog number. The company plans to update the e-catalog monthly. To access the online catalog go to microscale.com/epubs/MSICatalog.





New HO and N scale decals from Microscale this month include Nacionale de Mexico - NdeM - 89' flat cars and trailers (above left), and number boards (above right) for diesels from 1940 to 1990. Also white lettering decals for CB&Q freight cars post 1968,and Carlon-CARX, and American Car & Foundry -- ACFX plastic lease hoppers cars with 4650, 5250, and 5700 cubic foot capacity. Pricing and additional details are available at microscale.com.

Mount Vernon Models (mountvernonshops.com/GPA.html) has released two new HO scale lettering sets for PRR Mow equipment. They include PRR's GP/GPa MOW ballast and cinder hopper cars. The set has sufficient material to decorated three cars and includes number prefixes for creating additional numbers. Also PRR MOW with black lettering for the early schemes (1937-1960) with sufficient material to decorated up to 11 cars and two snowplows. For additional information and pricing visit the above website.

DISCLAIMER ..

The opinions expressed in this column are those of the writer and do not necessarily reflect the opinion of Model Railroad Hobbyist or its sponsors. Every effort is made to provide our readers with accurate and responsible news and information, however, neither Model Railroad Hobbyist or the writer of this column can be held responsible for any inaccuracies or typographical errors that may inadvertently appear in this column.

Send us your product announcements

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

Reader Feedback (click here)

Briefly noted at press time...

. . . **Athearn** Brand Manager Shane Wilson will be leaving Horizon Hobby this month. Shane was based in the company's headquarters in Champagne, IL. Several key members of Athearn's Product Development Team, based in Long Beach, CA, have also submitted their resignations. Mike Hopkin – Director of Product Development, Joe Olvera – Graphic Design Manager, and Paul Ellis of the Product Development Staff will also be leaving the company this month. Chris Palomarez, cohost of the Model Railroad Hobbyist Podcast, recently joined Athearn's Long Beach Team as a technical specialist.

. . . **Atlas O** is liquidating a small trove of uniquely-decorated cars recently discovered in their warehouse. Free shipping is offered on orders of four pieces or more. The sale ends May 5th. For details visit shop.atlasrr.com/d-82-special-run-sale-items.aspx.

. . . The analog version of **KatoUSA's** HO scale GE Genesis P42 Amtrak 40th Anniversary Phase IV locomotive has been shipped to dealers. ESU, LokSound, or Soundtraxx Tsunami DCC should be available later this month. ■

Selected Events

May 2014

AUSTRALIA, NSW, ALBURY, May 24-25, Annual Train Show sponsored by Murray Railway Modellers, at Mirambeena Community Centre, 19 Martha Mews, Lavington. Info at murrayrailwaymodellers.com.

CANADA, ONTARIO, NIAGARA-ON-THE-LAKE, May 2-4, NMRA Niagara Frontier Region Convention, "The Grapevine Express", at Niagara College, 137 Taylor Road. Lodging on campus or at local hotels. Info from Mike Pearson at 905-385-9500 or grapevineexpress.ca.

NEW ZEALAND, DUNEDIN, May 10-11, Dunedin Model Train Show at Forbury Park, 146 Victoria Road. Info at dunedinmodeltrainshow@vodafone.co.nz.

ARIZONA, TUCSON, May 30-31, Gadsden Pacific Toy Train Operating Museum, at Tucson Expo Center, 3750 E Irvington Road. Info at gpdToyTrainMuseum.com.

CALIFORNIA, LOS ANGELES, May 3-4, Spring Show at Pasadena Model Railroad Club Sierra Pacific Lines, one of the worlds largest operating layouts with 1700 feet of main line. At 5458 Alhambra Avenue. Info at pmrrc.org.

CONNECTICUT, COLLINSVILLE, May 30-31, New England/ Northeast Prototype Modelers Meet. Info at neprototype-meet.com.

FLORIDA, TAMPA, May 5-10, 30th National Garden Railway Convention. Info at wendysetzer.wix.com/ngrc2014tampa.

ILLINOIS, SCHAUMBURG, May 15-18, NMRA Mid West Region 2014 Convention. Info at foxvalleydivision.org.

IOWA, SIOUX CITY, May 2-4, NMRA Thousand Lakes Region Convention. HQ at Stony Creek Inn. Info at thousandlakesregion.org.

NORTH CAROLINA, SPENCER, May 29-June 1, Streamliners at Spencer, a gathering of prototype locomotives from the 1930s through the 1950s at the North Carolina Transportation Museum including an Atlantic Coast Line E3 and the Southern Railway's E8 and FP7. Details at nctrans.org/Events/Streamliners-at-Spencer-(1).aspx.

OHIO, HILLIARD (Columbus area), May 17-18, 6th Ohio N-scale Train Show, at Franklin County Fairgrounds, 4100 Columbia St. Info at centralohiontrak.org.

VIRGINIA, FISHERVILLE, May 4, 2014, 28th Annual Shenandoah Valley Model Train Show, sponsored by the Augusta County Model Railroad Museum at Expoland, 277 Expo Road. Info from Dave Colton at 2coltons@comcast.net.

June 2014

CALIFORNIA, FREMONT, June 14-15, 3rd Annual TCSME Open House sponsored by Tri-City Society of Model Engineers with N and HO scale layouts in operation plus swap meet on Saturday, at Niles Plaza, 37592 Niles Blvd. Info at nilesdepot.org/niles/home.html.

CALIFORNIA, RICHMOND, June 21, San Francisco Bay Area Prototype Modelers Meet, at St. David's School Hall, 871 Sonoma St. Info at bayareaprototypemodelers.net.

CALIFORNIA, SAN JOSE, June 14, Open House at Silicon Valley Lines featuring 600 foot long mainline double-deck HO scale layout, at 148 E. Virginia Street (basement). Info at siliconvalleylines.com.

CALIFORNIA, VISTA, June 7, 2nd Annual Open House & Swap Meet sponsored by Short Track Railroad Club, at the Antique Gas & Steam Engine Museum, 2040 North Santa Fe Avenue. Info at shorttrackrr.org. For table reservations contact Milt Perkins at miltperkins@roadrunner.com.

FLORIDA, TALAHASSEE, June 28, Model Railroad Sale & Show, at North Florida Fairgrounds, 441 Paul Russell Road. Info at bbmra.org/show.html.

MARYLAND, TIMONIUM, June 21-22, Great Scale Model Train and Railroad Collector Show, at Cow Palace, Maryland State Fair, 2200 York Road. Info at gsmts.com.

OHIO, BRADFORD, June 21, Rail Festival at Bradford Ohio Railroad Museum, 200 North Miami Ave. Info at bradfordrrmuseum.org.

TENNESSEE, MEMPHIS, June 13-15, NMRA Joint Convention of Southeastern Region and Mid-Continent Region, at Hilton Memphis Hotel, 939 Ridge Lake Blvd. Info at mrtm.org/convention.

TEXAS, ROUND ROCK, June 4-8, NMRA Lone Star Region 2014 Convention. Info at bluebonnetlimited.com.

UTAH, SALT LAKE CITY, June 19-22, NMRA Rocky Mountain Region Golden Spike Limited Convention, hosted by the Northern Utah Division. With clinics, layout tours, and prototype tours including Golden Spike National Monument at nearby Promontory. Info at gsl2014.org.

VIRGINIA, ROANOKE, June 25-29, National N Scale Convention at Sheraton Roanoke Hotel & Convention Center, 2801 Hershberger Road. Info at nationalnscaleconvention.com.

WASHINGTON, TACOMA, June 18-21, NMRA Pacific Northwest Region Convention at La Quinta Inn 1425 East 27th St. Info at wnrr.net/PSX2014.

Future 2014 (by location)

CANADA, QUEBEC, LAVAL, October 4-5, 2014, The North Shore Train Show, at Complexe Multi-Sports, 995 rue Bois-de-Boulogne. Info at salondutrainrivenord.org.

CALIFORNIA, McCLELLAND (Sacramento), July 16-20, 2014, National Summer Steam Up – Small-Scale Live Steam Event, HQ at Lions Gate Hotel. Info at summersteamup.com.

CALIFORNIA, SAN DIEGO, September 3-7, 2014, NMRA Pacific Southwest Region Convention, at Courtyard Marriott, Hotel Circle South. Info at psrnmra.org.

FLORIDA, PALM BAY, December 21, 2014, HO Scale Module Display sponsored by Palm Bay Model Railroad Club, at Franklin T. Degroodt Memorial Library, 6475 Minton Road.

FLORIDA, THE VILLAGES, August 16-17, 2014, Summer Model Train Show and Sale at Savannah Regional Recreation Center, 1545 Buena Vista Blvd. Sponsored by The Villages Railroad Historical Society. Info from Alan Goldberg 352-205-4322, or email: amgold15@hotmail.com.

GEORGIA, KENNESAW, September 19-20, 2014, Atlanta Railroad Prototype Modelers Meet, jointly sponsored by the Southern Railway Historical Association, Atlantic Coast Line & Seaboard Airline Railroads Historical Society, Central of Georgia Railway Historical Society, and Nashville Chattanooga & St Louis Preservation Society. At the Southern Museum of Civil War and Locomotive History, 2829 Cherokee Street. Info at srha.net or contact Frank Greene at frgreene290@comcast.net.

ILLINOIS, COLLINSVILLE (Metro St. Louis, Missouri), August 8-9, 2014, St. Louis Railroad Prototype Modeler's Meet, at Gateway Convention Center. Info at icg.home.mindspring.com/rpm/stl-rpm.htm.

ILLINOIS, NAPERVILLE, Oct 9-11, 2014, 21st Annual Naperville RPM Conference, hosted by Joe D'elia at Sheraton Lisle-Chicago Hotel, 3000 Warrenville Road, Lisle. Info at railroadprototype-modelers.org/naper_meet.htm.

KANSAS, OVERLAND PARK (Metro Kansas City, Missouri), September 3-6, 2014, 34th National Narrow Gauge Convention. Info at kansascity2014.com.

NEBRASKA, NORTH PLATTE, September 19-21, 2014, North Platte Rail Fest Model Train Expo, at National Guard Armory, 1700 N. Jeffers St. Info at nprailfest.com.

NEW JERSEY, GLASSBORO, July 12, 2014, Annual Train Show sponsored by the Strasburg Model Railroad Club, at St. Thomas Parish House, Routes 47 & 322 Focer Street. Info from Dave Luciano at luciano1@comcast.net or call (856) 988-0689.

OHIO, CLEVELAND, July 13-20, 2014, NMRA National Convention. Info at 2014cleveland.org.

OHIO, CLEVELAND, July 18-20, 2014, National Train Show at New Cleveland Convention Center, 300 Lakeside Avenue. Info at 2014cleveland.org.

OHIO, WEST CHESTER, October 11-12, 2014, NMRA, Mid Central Region, Cincinnati Division 7, 47th Annual Model Railroad Show. At Lakota West High School, 8940 Union Centre Blvd. Info at cincy-div7.org. Sales table info from Roy Hord at (513) 777-5337 or rhord@fuse.net.

VIRGINIA, CHANTILLY, August 7-10, 2014, Capitol Limited N Scale East Convention, co-sponsored by Northern Virginia NTRAK and Greenberg Train and Toy Shows, at Dulles Expo Center. Additional information available at info@bigtrainlayout.org.

VIRGINIA, FREDERICKSBURG, September 12-13, 2014, Mid-Atlantic Railroad Prototype Modelers Meet, with model displays, clinics, and RPM camaraderie. Wingate by Wyndham Hotel, 20 Sanford Drive. Info at marpm.org.

Future 2015 (by location)

FLORIDA, COCOA BEACH, January 8-10, 2015, Prototype Rails RPM meet hosted by Mike Brock, at Cocoa Beach Hilton Hotel, 1550 North Atlantic Avenue. Info at prototyperails.com.

OREGON, PORTLAND, August 23-30, 2015, NMRA National Convention and National Train Show. Info at nmra2015.org.

PENNSYLVANIA, PHILADEPHIA, May 15-17, 2015, Biennial Meet of the East Penn Traction Club, at Pennsylvania Convention Center. Info at eastpenn.org/2015_meet_announcement.htm.

TEXAS, HOUSTON, September 2-5, 2015, 35th National Narrow Gauge Convention. Info at nngc-2015.com.

Future 2016 and beyond (by location)

INDIANA, INDIANAPOLIS, July 3-10, 2016, NMRA National Convention and National Train Show. Info at nmra2016.org.

MAINE, AUGUSTA, Sept. 7-10, 2016, 36th National Narrow Gauge Convention. Info at nngc2016.org. ■

Reader Feedback (click here)

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The devil's advocate

Reverse Running: Stepping outside the box with a contrary view

by Joe Fugate

Model Railroad Hobbyist has this name because we want to always remember the hobbyist. Yes, the hobby is also about "the stuff", the models we build and collect. But what makes the hobby the most rewarding is the people side, and sharing the hobby with others.

Reader Feedback
(click here)

We pursue a hobby because it's a passion that we're willing to devote some significant free time to. And as a passion, we can also have passionate opinions about how to best pursue our beloved hobby. It shouldn't surprise us that we'll also encounter some passionate disagreements now and then when talking about the hobby, which these days includes places like online forums.

Once in a while, someone with a contrary view shows up and then people may get worked up about the nay-sayer's viewpoint. While nobody likes conflict, we need to realize these so-called devil's advocates can lead to superior solutions.

My favorite illustration of this comes from a team interaction study done many years ago.

In this study, six teams were formed to review some problems and produce solutions. A panel of judges would determine which team provided the best solution to each problem.

For three of the teams, one member was secretly pulled aside and told to disagree with the other team members and to challenge their conclusions at every turn. Neither the judges nor any of the other team members knew this had happened.

For each of the many problems presented, the judges always selected one of the teams with the secret devil's advocate as having the superior solution. Remember, the judges had no idea the secret devil's advocate existed. They were simply chosing the team which, in their opinion, had the best solution.

For round two, each team got to eject their least valuable member – and yes, you guessed it, on the three teams with the secret devil's advocate, they each expelled the devil's advocate. Without realizing it, each team had just ejected their competitive advantage!

True, conflict isn't fun. But it's generally held that for any group pursuing a goal, if someone doesn't need to apologize to others in the group every so often, then the group is underachieving. Ruffling some feathers can be a key to excellence!

So let's learn to appreciate the devil's avocate view in any discussion, and allow for a contrary view, because that contrary view could be just what's needed to drive our thinking outside the box and lead to a superior solution.

No, trying to deliberately be disagreeable and contrary should not be business as usual, but if everyone's always in agreement, the alarm bells should go off because that isn't healthy either. We could be missing something that might lead to an even better solution if someone would just challenge our thinking.

So learn to see a contrary devil's advocate discussion as a-ok and even healthy when talking about how we better pursue our great hobby of model railroading! ☑

Derailments

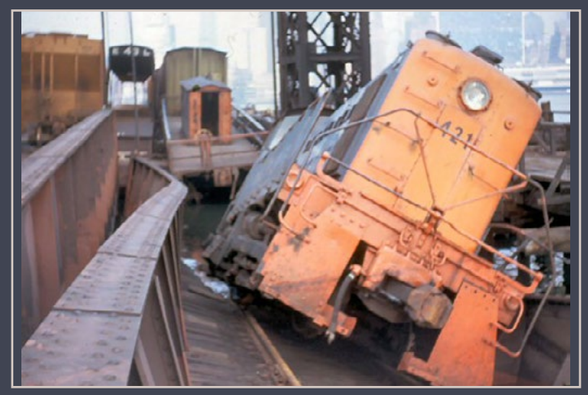
humor and bizarre facts (allegedly)

Want to model in a larger scale? How about 1:1? Watch this video about the railroad scenes in the movie *The Lone Ranger* and the amount of work involved in filming them. A special thanks to forum member Bernard for sharing this link.

If you're the first to **submit a bit of good humor or bizarre facts** and we use it, it's worth $25!

Reader Feedback (click here)

More Derailments humor and bizarre facts ...



Oh-oh. Fred forgot to wait until the ferry was attached to the float bridge before running his locomotive onto it.

Whew...I finally got the switch laid – but you never told me you wanted the trains to run on it *too!*

Photos from Google Images.