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**Eric Miller**

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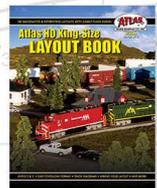
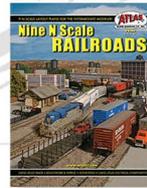
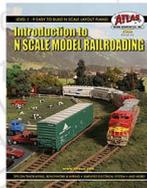
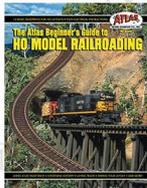
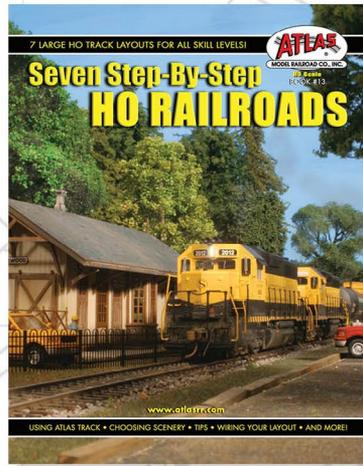
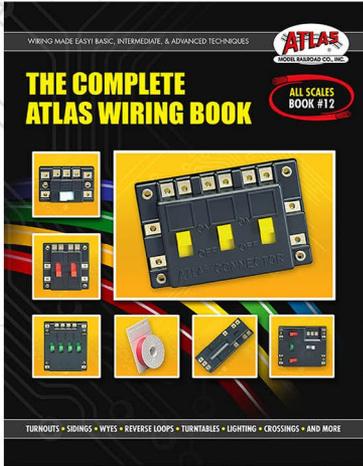


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MODEL RAILROAD HOBBYIST

Model Railroad Hobbyist December 2018 | #106

(Updated 11/30/18)



ISSN 2152-7423

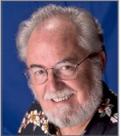
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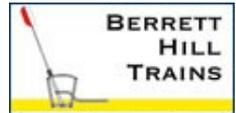
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## Publisher's Musings: Running Extra / turnout wiring

*JOE FUGATE*



## MRH QAT: Tank cars / covered hoppers & small layouts, ...

*Compiled by JOE BRUGGER*



## Electrical Impulses: Signaling my layout, part 3

*JASON MILLER*



## What's Neat: SoundTraxx steam sound installation ...

*KEN PATTERSON*



## SPSF C39-8E custom detail and paint

*ERIC MILLER*



## Yes, it's a model

*compiled by JOE FUGATE*



## First Look: Jacksonville Terminal containers

*JEFF SHULTZ*



## December 2018 news

*RICHARD BALE and JEFF SHULTZ*



## Derailments

*Compiled by the MRH STAFF*

*More content beyond what ads will pay for ...*



## Publisher's Welcome: Open top car weighting

JOE FUGATE



## Limited Modeler: Good enough

JIM SIX



## Getting Real: Art Deco station build, part 2

NICK MUFF



## Stay-alive capacitors for N scale

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## Modeling a steam throttle

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## Build a working coal tower

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Scene and photography by Ken J Johnson. First test models shown

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# PUBLISHER'S MUSINGS



Model Railroad Hobbyist | December 2018 | #106

**JOE FUGATE:** ALL ABOUT *RUNNING EXTRA* MAGAZINE ... AND THOUGHTS ON BETTER TURNOUT WIRING



**RATE THIS ARTICLE**

**WITH THE ROLLOUT OF OUR NEW *RUNNING EXTRA*** magazine, we have received many questions. That usually means many other readers *also* have these questions but just didn't bother to email us and ask. So, for the rest of you, here are the *Running Extra* common questions and the answers!

## **Q. What is Running Extra and why would I want it?**

**A.** In short, *Running Extra* is more magazine than ads alone pay for. MRH remains free and ad-supported, but ad revenue fluctuates and we can't afford to publish more magazine than ads will fund.

Meanwhile our article backlog keeps stacking up with ever more great articles, but MRH's ad funding limits how many we can publish.

So along comes *Running Extra*, a new magazine you pay a small fee for (\$1.99 each month) and you get a "second" magazine loaded with great articles we've not been able to publish because ad funding has not been paying for enough pages.

Why should you want *Running Extra*? Let's take the December issue, for example. In the "Ah-hah Moment" feature this month, we share a trick for making decoders and loco motherboards more short-proof. If that technique saves you just *one sound decoder*, that's several years

worth of *Running Extra* you've just paid for. That's pretty typical of the more advanced articles you're getting in *Running Extra*. Any one issue will easily pay for itself many times over with the cost and time saving insights we're putting into those pages.

Remember, *Running Extra* has no ads, so those extra pages are 100% totally in-depth meat.

## Q. How do I get *Running Extra*?

A. We sell *Running Extra* individual issues in the MRH Store:

**WEB:** [store.mrhmag.com/apps/search?q=%22Running+Extra%22](http://store.mrhmag.com/apps/search?q=%22Running+Extra%22)

Each issue costs \$1.99 and comes as a downloadable PDF which you download and read offline. There is no online edition of *Running Extra* – yet. To provide an online version, we need to add a paywall section to our store with a login, account management,

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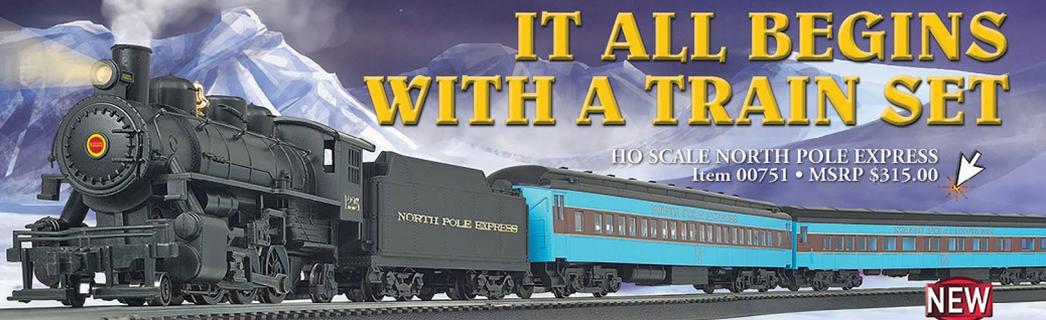
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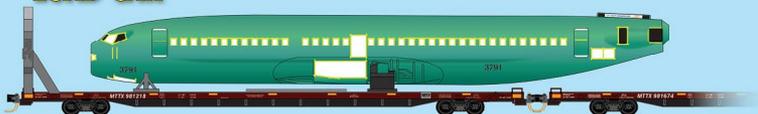
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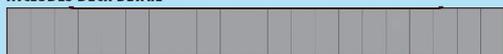
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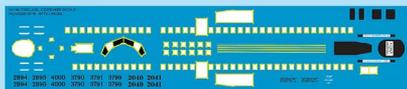
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**PUBLISHER'S MUSINGS | 3**

and backend customer support management. That's not a light-hearted effort, so it's going to take a few months.

If you want to save money, you can get a 12 month (1-year) subscription to *Running Extra* for just \$19.99.

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**Q. Do I need to download *two* magazines now?**

**A.** No! *Running Extra* includes all the free MRH magazine pages in the back, complete with all the ads. If you subscribe to *Running Extra*, you automatically get MRH too!

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MAKING RAILROAD HISTORY  
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Again, notice you have to download *Running Extra* and store it on your device for now, since it's not available to read online yet like MRH is. So it's going to take offline storage space – just be aware of that.

**Q. I'm a *Running Extra* subscriber, but when I click on the grayed out RE table of contents in MRH, it wants me to buy the issue. What gives?**

**A.** MRH magazine is a simple document, it's not a computer program with "smarts." That means as a document, MRH is "dumb" and has no idea you subscribed to *Running Extra*.

As a *Running Extra* subscriber, our subscription service provider, SendOwl, emails you a personal download link when you subscribe. You need to bookmark that link because it will never change and is your issue access link for the life of your subscription.

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Hopefully, these answers have helped you get a better idea of what *Running Extra* is and if it's something you need to get and read.

### Better turnout wiring

If you've read any of my [\*Run like a Dream\* book series](#), you know I've become a real believer in preventative measures for flawless ops.

I tend to prefer my home built "poor man's jig turnouts" (see MRH September 2011), but if you prefer commercial turnouts, PECO brand turnouts are a good choice.

With PECO brand turnouts, using some wiring tips can make them electrically bullet-proof. Some of these same tricks work on other turnout brands as well.



Actual Athearn Genesis H0 scale model depicted



## HELP TO PRESERVE RAILROAD HISTORY

To help support the effort by the Youngstown Steel Heritage Foundation (YSH) to move and preserve the Erie Lackawanna #3639 EMD SDP45 (SD45M), Athearn will assist in driving a donation per unit reserved to the effort by offering models as Erie Lackawanna #3639 and Conrail #6670. Both DCC-Ready and DCC+Sound configurations are available. The real EL #3639/CR #6670 is the basis for our engineering and measurements for the Athearn Genesis EL/CR models.

Through exhaustive research, including measuring one of the last known real-world survivors, Conrail #6670, to studying thousands of images and drawings, we've captured every unique detail for the Southern Pacific, Great Northern, and Erie Lackawanna/Conrail. Visit [www.extra3639north.com](http://www.extra3639north.com) to help preserve the 1:1 EL #3639.

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SP and GN long hood end is flat to allow room for steam generator equipment while the EL includes a pointed end. Note the steam generators are road specific.

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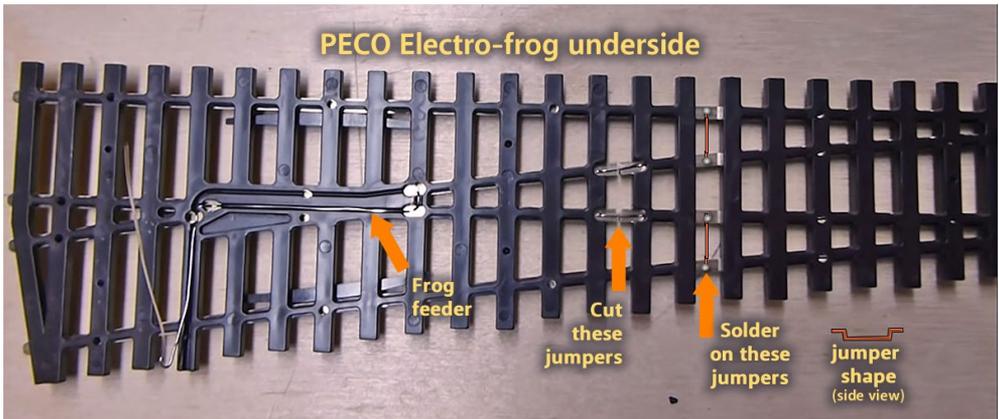
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1. PECO Electro-frog turnout topside view with recommended wiring enhancements.



2. PECO Electro-frog turnout underside view with recommended wiring enhancements.

I prefer turnouts that have all-metal frogs and guard rails, and PECO Electro-frog turnouts meet that requirement nicely.

Topside, I cut gaps in the diverging rails a couple ties past the frog wing rails. On the underside, I cut the closure rail jumpers to isolate the frog. Then I power the frog using a frog juicer attached to the frog feeder wire seen in [2].

I also solder jumpers between the stock rails and the closure rails [2], and I solder jumpers between the closure rails and the points [1].

# NR DINERS



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## PUBLISHER'S MUSINGS | 6

As the points age and get track gunk on them, the contact with the stock rails becomes unreliable, so the closure jumpers and the point jumpers ensure they always get power. This prevents stalls on these locations.

I also like to glue styrene into any insulating gaps around the frog area, since I never want those gaps to accidentally close.

With these simple measures, you can get ultra-reliable turnouts that locos will never stall on.

Why wait and then get annoying unplanned stalls during an op session and let it grind everything to a halt? It's all part of getting things to [run like a dream!](#)

### Entered our contest yet?

Just a reminder we've got a new design contest going this year. Unlike previous years, this year things are wide open.

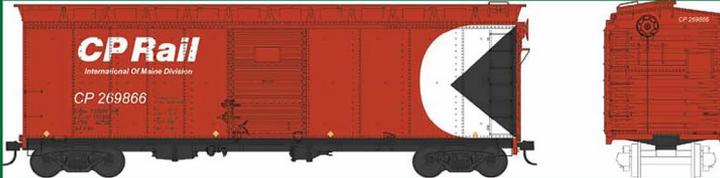
One type of layout design we seldom see plans for but we

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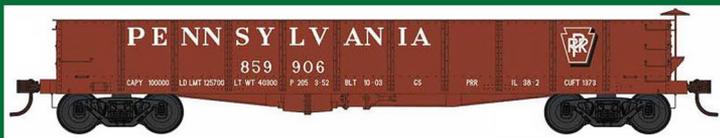
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# MRH CONTEST: "California Basement" Challenge

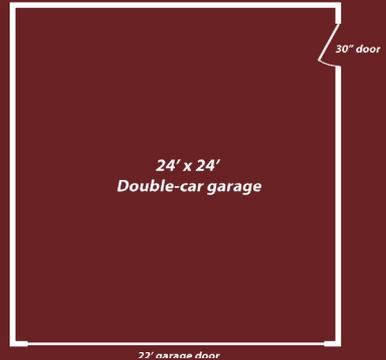
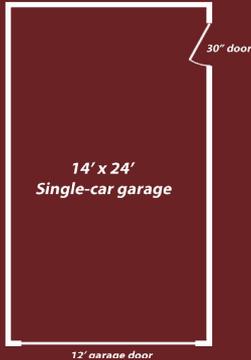
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**Goal: Design a layout for a one- or two-car garage  
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**Two room-size  
choices:**

**Single car garage  
(14'x24')**

**Double car garage  
(24'x24')**



Note: This is a wide open home layout design contest using any design approach. This is not a modular-only contest like past contests.

## CONTEST RULES

- Scale: Z-G, standard or narrow gauge.
- Draw up a final track plan and write up the design to be published. Extra points awarded for a high quality track plan, text, illustrations, photos, and captions.
- Describe the layout theme, rationale, and era (if any).
- Outline the basic construction methods you would take if you were to build this design. Extra points awarded for innovative thinking.
- The car does not need to go into the garage. You can use the entire space. However, the garage door does need to remain functional, it cannot be sealed shut, so describe what you will do to deal with that need.
- Beyond that, pretty much anything goes. Have fun and let's come up with some interesting track plans for a garage.
- All submissions must be publishable. If the submission is not formatted to be ready for publication, it will be disqualified. Take the time to be complete, provide captions, and to describe things completely in your text. See the [MRH submission guidelines for more information](#).
- The best submissions will be published and contributors paid for the article.

**SUBMIT ENTRY (Choose "Contest entry")**

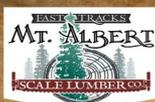
often see in real life as layouts: the so-called “California basement” layout (aka, the garage layout).

In previous years, we’ve focused a lot on TOMA modular designs, but this year we’re giving it a rest and you can do whatever you want as long as it’s a single or double car garage design.

Put your layout design thinking caps on, sharpen your pencils and/or warm up your mouse arms. Let’s get those contest entries built and submitted!



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## LAST ISSUE'S RATINGS

The three top-rated articles in the [November 2018 issue](#) of *Model Railroad Hobbyist* are:

**4.6** Electrical Impulses: Signaling my layout, part 2

**4.5** What's Neat: Central Valley bridge build, ...

**4.4** Adding LEDs to Blue Box locos

Issue overall: **4.2**

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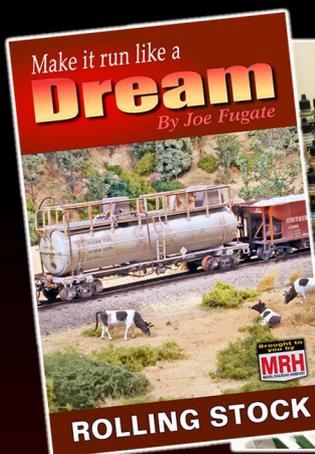
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# MRH ...

# QUESTIONS, ANSWERS, TIPS



Model Railroad Hobbyist | December 2018 | #105

compiled by **JOE BRUGGER**



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## Tank cars and covered hoppers for a small layout

**Q.** I'm designing a 60" x 16" HO scale switching layout. I'd like to model an LPG distributor like Walthers' Central Gas & Supply and a cement distributor like their Medusa Cement Co. The time frame is the 1970s into the 1980s. I need some help identifying suitable tank car and covered hopper models for both industries. I'd like the cars to stay around 50 feet long or shorter due to the limited space.

—Mark L.

**A. Jeff Shultz:** The covered hoppers you need are perfect for a small layout. An appropriate one might be the ACF two-bay Centerflow covered hopper, at just under 3,000 cu. ft. Several hobby manufacturers have produced them. Older two-bay Pullman Standard covered hoppers are also available. On either type of car, check that the unloading gates are of the proper flat sliding type for cement service.

▶ **MRH QUESTIONS, ANSWERS, AND TIPS**

As for LPG cars, I think your hunt is going to be more difficult. I'm finding 11,000-gallon ones built in the '50s and very long 33,000-gallon ones from the '90s.

**Tim Garland:** For your era I would go with Athearn or Intermountain two-bay covered hoppers for cement and Atlas whale belly LPG tank cars.

Some propane dealers are seasonal and buy in bulk. These typically do not get cars on a regular basis. If you like tank cars you might want to consider a general chemical plant that would receive regular shipments. Athearn and Atlas make some good tank cars that would fit this era.

**Joe Atkinson:** If the propane dealer doesn't work out, another option involving similar cars would be an anhydrous ammonia



1. Atlas produced whale-belly 33,000-gallon tank cars stenciled for liquefied petroleum gas (LPG) service which carry build dates between March 1964 and September 1969. They can be found at swap meets and from online sellers. Walthers offered a "65' LPG Tank Car" lettered with an 11-68 build date. *Graham Line photo*

transload. You can find an article on modeling one in the July 2016 MRH at [mrhmag.com/magazine/mrh2016-07-jul/modern-tankcar-transload](http://mrhmag.com/magazine/mrh2016-07-jul/modern-tankcar-transload). Unfortunately, while that Tanner facility was switched regularly, it wasn't switched frequently. Tanner only got about one car a month, but they got them like clockwork.

Unless you're really a fan of the long 33K-gallon tank cars, for a smaller layout I'd suggest going for a chemical or oil distributor, or something similar that uses smaller cars.

**Mark L. (the Original Poster):** I like both tank cars and the propane tanks and piping of a typical LPG dealer. Can you give me some examples of general chemical plant types that would be good for modeling, what types of inbound and outbound loads they would have, and what tank cars they would utilize?

I'm getting some ideas. Walthers' Magic Pan Commercial Bakery says it could be used as a chemical distributor. It has tanks and piping which I like, and it could be combined with Walthers' Plastic Pellet Transfer kit to create a

more complex, er, complex. I think something like this could generate traffic of both tank cars and covered hoppers.

**Barry Karlberg:** Most plastics companies don't get tank cars, only plastic resin pellets in large covered hoppers. The holding tanks for pellets aren't the same as those that handle liquids or products like grain and feed.



J. Brugger

#### PLANNING:

We're sneaking up on a good idea here. In Mark's limited real estate, one large, complex industry may be more plausible than two or three small ones.

Tim mentioned that LPG is seasonal, but that depends on where, and what season. Vacation areas often take more gas in the summer, and cold climates use it in the winter. Many new installations have large storage capacity and store gas when the price is low. New distributor facilities have sprung up in the northern part of the country to take advantage of lower rail rates. There often isn't enough pipeline capacity to handle LPG because they are shipping more crude oil.

Smaller chemical plants I switched received tank cars 40 to 65 feet long depending on the commodity and whether they were set up to receive a gas or a liquid. Food processors take non-hazardous tanks of cooking oils and sweeteners, along with covered hoppers of dry ingredients, and even a few boxcars. I can think of one industry in Illinois that gets oil and sweetener in tanks, and other products in covered hoppers and plain old 50-foot boxcars to make pizza mix.

Walthers makes it easy to simulate a tank car industry with their four loading/unloading/inspection platforms that are small and easy to build. All four platforms can be built as loading/unloading ones because they include extra piping. Add a storage tank or two and you're in business. If a food processor is your wish, then add a low-relief trucking warehouse with boxcar doors. If you place a large cooling unit on the roof it can also handle chilled goods to load in or from reefers.

**Ken K.:** Modelers can confuse plastic manufacturers where the pellets, plastic sheets, etc. are produced, and raw plastic consumer manufacturers who produce milk jugs and other items. The Dow Chemical, formerly Rohm and Haas plastic plant in Knoxville, Ky. has spots for over a dozen tank cars supplying raw materials (acids, petroleum bases, glycerin, etc.).

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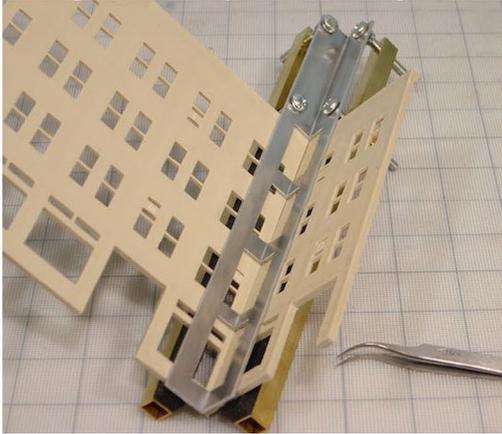
**Tim Garland:** Tank cars can handle a lot of different products, but users avoid contamination by shipping only the exact same product for the service life of the car. For instance, corn syrup tanks are designed to haul corn syrup and chlorine tanks are designed to haul chlorine.

A lot of chemical-related industries will receive tank cars carrying multiple types of products. One example is an industry we switch called Nexio Solutions, which bought out Ashland Chemical. This facility has multiple car spots that require tanks carrying specific commodities to always be unloaded from a specific spot. Pipes carrying the product from each spot go to different storage tanks that can hold the product until they are either transferred to tanker trucks or large drums. Often, these products will go out to various industries that produce things such as cleaning supplies.

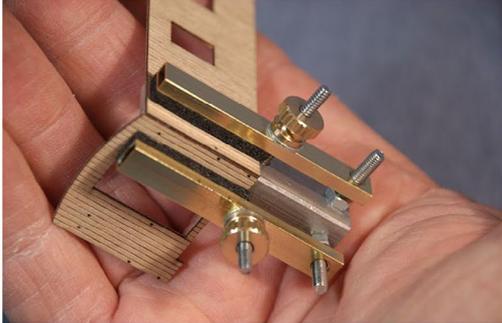
**Scott Chatfield:** Here in America in your time frame propane distributors that are rail-served generally only deal in propane. That's been true since at least 1970. Fuel dealers, formerly known as bulk plants, got liquid fuels like gasoline, kerosene, and diesel. After 1970 most fuel dealers have gotten their deliveries by truck from pipeline terminals, not by rail.

Propane started to be shipped by rail in large quantities around 1940, and the Atlas and Kadee 11,000-gallon tank cars are both propane tanks. They also can be used for anhydrous ammonia, one of the few cases in the modern era where the same car can be used for two different commodities.

However, starting in the mid-'60s, a new generation of 100-ton propane/AA tanks were built. The earliest ones were the "whale-bellies" like the Atlas model. By 1970, after a few accidents, the railroads and government decided whale-belly pressure tanks

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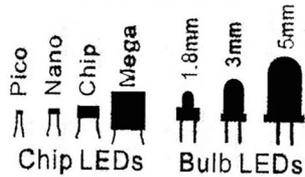
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were not the best idea, and all subsequent pressure tanks built have been straight-body tanks.

The Walthers and Athearn Genesis 33,000-gallon tanks are post-1970 propane/AA tanks. Only a few other commodities ship in these cars. Please note that Athearn also makes some post-2000 versions of these cars. Those have the ladders offset from the manway, and newer graphics and reflective conspicuity stripes.

Some good-sized bakeries are served by rail, some big enough to have their own Trackmobile. They get flour and sugar in Airslide hoppers (the short one-bay and boxier two-bays – each version has been made by several manufacturers). They could get corn syrup or liquid sugar in tank cars. Before 1995 these were mostly 16,000-gallon insulated tanks (Atlas and Walthers), and vegetable oil in longer insulated tanks, back then mostly 23,500-gallons and again, look at Atlas and Walthers.



2. Covered hopper and Airslide cars for carrying dry commodities have been produced by several model companies. From the left, Kadee 2003 cu.ft. PS-2, Walthers 2600 cu.ft. single-bay Airslide, and Athearn 2900 cu.ft. ACF two-bay. Other makers include Atlas, Eastern Car Works, Kato, Tangent, and Con-Cor. *Graham Line photo*



**3. The annual fertilizer train in Stayton, OR., with three cars of phosphoric acid solution and one of anhydrous ammonia. *Jeff Shultz photo***

If you lean toward the '70s use the single-bay Airslide for flour and sugar, and no syrup tanks. For an '80s layout, go with the twin-bay Airslide for flour and some sugar, and add the syrup tanks.

A liquid fertilizer plant is similar in set up to an asphalt terminal, except it doesn't need steam lines. It uses the same size or slightly smaller cars, depending on the chemical. The Atlas and Walthers 23,500-gallon tanks are good. The Athearn "62-foot" tank is a bit too long but can be used as a stand-in.

Cement is a low-margin commodity that's made all over the continent, and the railroads hate to interchange it.

Several railroads bought the two-bay Center Flows starting in the mid-'60s. The earlier ACF 1,958 cu.ft. rib side cars (Bowser and Intermountain), General-American 1,958 cu.ft. (Kato), and Pullman 2,003 cu.ft. PS-2 (Athearn, Atlas, and Kadee) lasted into the '90s on many lines that couldn't afford fancy new cars for a low-margin business.

**Clark Propst:** Covered hoppers in cement service ping-pong back-and-forth between the manufacturing plant and the distribution facilities. These cars would be owned or leased by the railroad providing service to the plant. If more than one railroad served the plant, the cars would stay on home rails. There are always exceptions. But the basic rule is ALL covered hoppers should be from the same owner.

*Note:* Of course, on a '70s Burlington Northern layout, this could include cars from the Great Northern, Northern Pacific, Spokane, Portland & Seattle; and the Chicago, Burlington & Quincy.

**Jeff Shultz:** A local fertilizer plant here in western Oregon used to get one train of liquid fertilizer ( four cars) each year. One car of anhydrous ammonia, and three of phosphoric acid solution. After a storm weakened a bridge, the rail line got embargoed.

The interesting thing is that they also brought in, by truck, a "reactor" where they made the fertilizer out of the AA and phosphoric acid, accompanied by billowing clouds of vapor. Once a year. Covered hoppers of dry fertilizer came in a lot more often.

**Wilson:** I live near a potato chip and snack food manufacturer. They get most of their raw material by rail. They receive tank cars of vegetable oil, ship out waste oil in tank cars. They receive bulk dry corn and flour in covered hoppers, and raw potatoes in box cars and open

gondolas depending on the season. Most of their finished product is shipped by truck.

Find more information, real-world experiences, and photos at [mrh-mag.com/node/33406](http://mrh-mag.com/node/33406).

Look at the GATX freight car guide at [www.gatx.com/wps/wcm/connect/GATX/GATX\\_SITE/Home/Rail+North+America/Products/Equipment+Types](http://www.gatx.com/wps/wcm/connect/GATX/GATX_SITE/Home/Rail+North+America/Products/Equipment+Types).

## Swapping out N couplers

**Q.** I have a very small N scale 0-4-0 dockside switcher that has the old style Rapido couplers. I'd like to swap them out for a newer knuckle style coupler. Not sure if it's possible, but if so, how difficult is it?

—Tim S.

**A. Fishmack:** Try a Micro-Trains 1133 Coupler conversion kit. The package specifically mentions Bachmann locomotives and cars. The 1130 will work, but it has a long shank coupler that would look odd on your little locomotive – unless you really need it for tight curves. Just take your time and carefully read the instructions. Even the package advises you to read through the instructions at least once before you begin!

Detailed instructions for converting N scale rolling stock to use Micro-Trains knuckle couplers are at [www.micro-trains.com/index.php?route=information/information&information\\_id=10](http://www.micro-trains.com/index.php?route=information/information&information_id=10).





## TIPS

## Use 3M Scotch-Brite scrub pads to make scenery mats

Make your own homemade static grass mats using 6x9-inch 3M Scotch-Brite scrub pads. First, split or rip the pad in half, then spray paint it lightly with camo brown spray paint. Depending on the soil color in the area you are modeling, you could choose a sandstone or earthy gray color. Add some ground foam from Woodland Scenics, Heki, or Scenery Express to make an understory of vegetation, and finish it with appropriate static grass.

The pads can be trimmed on the edges with scissors and have holes cut in them. [*Some people recommend boiling the pads for an hour to soften them for stretching - ed.*].

—Bernard Hellen



4. Scotch-Brite scrub pads can be trimmed and painted to form the backing for a homemade scenic mat.

*Bernard Hellen photos*



5. Adding ground foam and static grass can represent anything from desert scrub to lush woodland meadows.



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# ELECTRICAL IMPULSES

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**IN PART 1, I EXPLORED PLANNING LAYOUT SIGNALING.**  
I also reviewed early considerations needed to ensure the signaling installation would go smoothly.

In Part 2, I covered the installation of the hardware components discussed in Part 1.

Now in Part 3, I look at the computer software and signal logic side, which includes:

- Connecting standalone LocoNet to a computer via a USB interface
- Using a JMRI (Java Model Railroad Interface) software dispatch panel to show the layout and train occupancy
- Operating Panel Pro and the automatic block signals (ABS) system on my layout.

▶ ALL-THINGS-ELECTRICAL FOR MODEL RAILROADING



J. Fugate

**WARNING:** THIS PART IS *VERY INVOLVED*

This third installment of Jason's series is *by far* the most involved. Unless you already have signal system experience, do not expect to completely understand everything discussed here.

***Important note: My intention here is to give you the flavor of how signal logic programming works in JMRI, but don't expect to completely understand it all until you've done some of this JMRI Panel Pro programming yourself!***

## My hardware and JMRI

If you recall, I have a Digitrax LocoNet connected to my NCE DCC system. I use Digitrax BDL168s for occupancy detection and SE8C units to drive the signal heads. An RRCirKits USB LocoBuffer interface connects the standalone LocoNet to my computer. The computer runs JMRI Panel Pro for operation and dispatching.



1. Here are the NCE Power Pro 5-amp Command Station and the RR CirKits LocoBuffer USB. These are connected to a computer computer via high speed USB ports. To ensure optimum transfer of data, use the fastest ports on your computer.

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*“The initial signal programming for my railroad has been over a year in the making.”*

I can't cover the entire programming of my layout's Panel Pro panel or detail every JMRI feature for signaling. The initial programming for my railroad has been over a year in the making. The panel design itself took a well over a month to get right. The total signaling project has taken four years to complete!

To show everything that had to be implemented and all that's available within JMRI and Panel Pro would be too complex – as well as forcing everyone to become way more familiar with my layout than most have patience for.

The JMRI website has much detail and many helpful tutorials for JMRI and all its features. I recommend you look through the site before you commit to installing a signal system using JMRI.

I show you some of the basic JMRI programming required to get a functional:

- Section of track with several blocks
- Series of turnouts to create a passing siding
- Series of signal heads onto a panel

## The LocoNet connections

To get the data from the detection hardware to the computer, we need an interface between it and the LocoNet. In Part 2 I showed the RR Cirkits - LocoBuffer USB that makes this connection between LocoNet and the computer.

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LocoNet needs a power source from the DCC positive bus and a termination to the USB LocoBuffer. These wiring requirements ensure the data path between the LocoNet and the computer running JMRI operates correctly.

To connect LocoNet via LocoBuffer to your computer, start Panel Pro and configure the computer to accept connections to both the NCE DCC System and the LocoNet via the LocoBuffer.

Details on how to connect the DCC System and LocoNet via the LocoBuffer follows below.

Find the LocoBuffer USB connection setup at:

[www.rr-cirkits.com/manuals/LB-USB-manual.pdf](http://www.rr-cirkits.com/manuals/LB-USB-manual.pdf)

Find LocoBuffer USB drivers for Windows 7, 8, or 10 at:

[www.rr-cirkits.com/firmware](http://www.rr-cirkits.com/firmware)

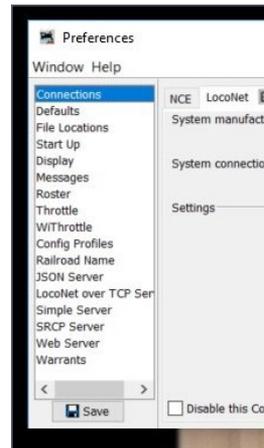
Find how to connect the NCE DCC system to JMRI at:

[jmri.org/help/en/html/hardware/nce/NCE.shtml](http://jmri.org/help/en/html/hardware/nce/NCE.shtml)

I do not go into the setup of the computer ports or other software preferences, as every system will be different. These settings depend on your computer type, operating system, and connection hardware, so refer to manuals for this.

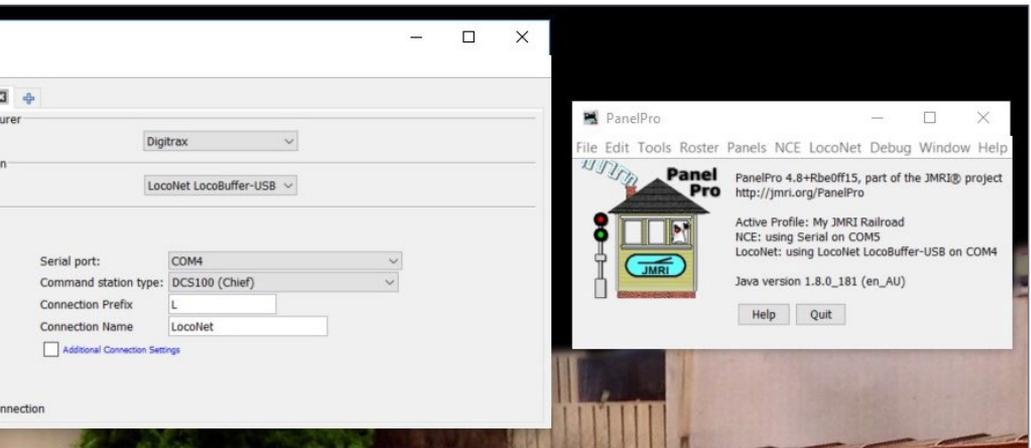
When connecting the LocoBuffer and the NCE System to your computer, refer to the help provided in the links above. The [jmriusers@groups.io](mailto:jmriusers@groups.io) help page is also a great source for help and troubleshooting.

When the connection has been made successfully and JMRI/Panel Pro is communicating with the standalone LocoNet, the screen will show the following information:



**Caveat: Remember the following settings [2] are specific to my computer and layout settings ...**

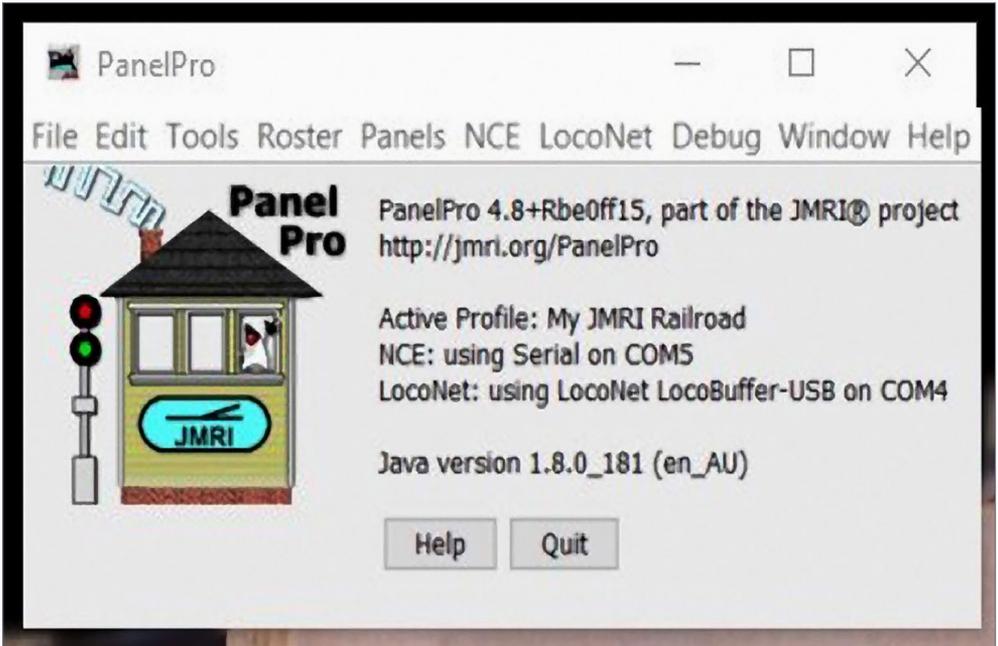
System Manufacturer: Digitrax  
System Connection: LocoNet - LocoBuffer USB  
Serial Port: COM4  
Command Station Type: DCS100 (chief)  
Connection Prefix: L  
Connection Name: LocoNet



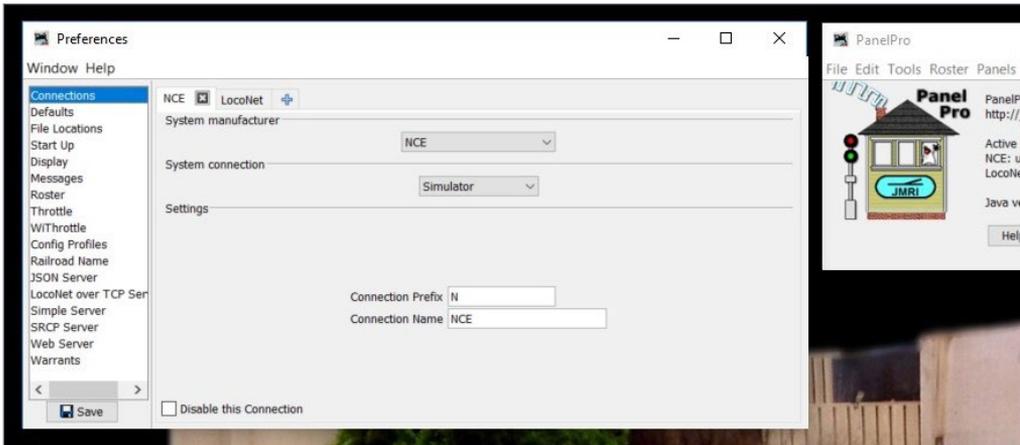
**2. The preference screen and Panel Pro main menu screen showing a successful connection to the LocoNet.**

Some may ask why I set the System Manufacturer to Digitrax, and the Command Station Type to a Digitrax DCS100 when my DCC System is a NCE Power Pro. The simple answer is, to JMRI the stand-alone LocoNet is a Digitrax-based system with Digitrax hardware.

In other words, JMRI needs to “see” everything from the LocoNet data as coming from a Digitrax system. My NCE DCC system itself doesn’t interact with the LocoNet data sent to JMRI.



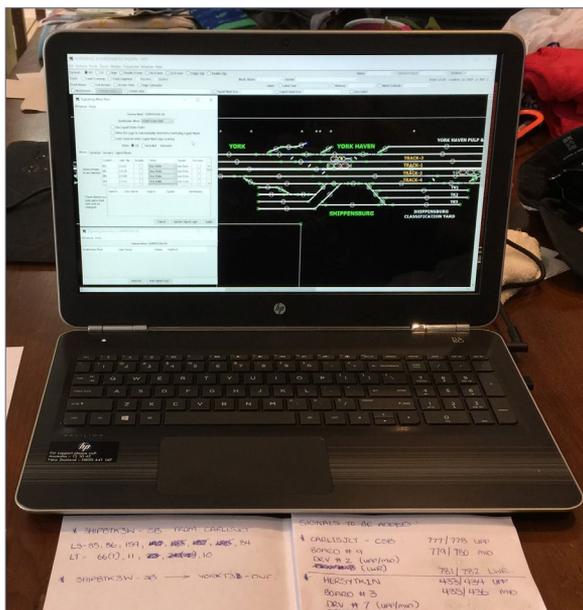
3. The Panel Pro menu screen when connected to the layout and operating correctly.



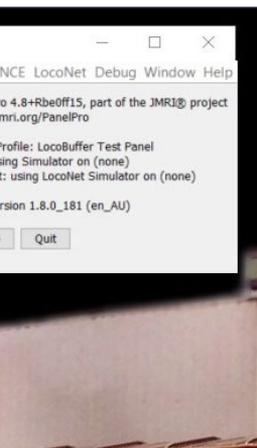
4. The Panel Pro menu screen when connected to the LocoNet simulator.

5. Because the railroad is built in a structure outside my home, being able to program the system remotely is very convenient.

Also note that on the Panel Pro - Startup screen [3] is reference to an “Active Profile,” which I set to “My JMRI Railroad”. This is the profile you use when connected to your layout.



JMRI has a LocoNet simulator mode [4]. This creates a simulated layout environment that allows you to work on your layout panel and simulate track occupancy and signal logic without being connected to your layout.



The LocoNet simulator means you do not need to be connected to your layout to make additions and/or changes to your Panel and are able to check the changes in before connecting to the real layout.

I created 90% of my signal logic and panels from the comfort of my dining room [5]. The only time I needed to be connected to the layout was to check that the signal heads on the layout actually displayed the correct signal aspect color.

Sensors

File View Defaults Window Help

All Internal NCE LocoNet

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LS83		Inactive		Delete	<input type="checkbox"/>	Edit
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Add...  Show Sensor Debounce Information  Show Sensor Pull Up/Down Information

## 6. Sensors table in Panel Pro.

### Sensors, signal heads, and signal masts

Before we move on to programming the Panel Pro panel, I need to explain a few things relating to signals within JMRI – we must first add the sensors, signal heads, and signal masts into tables for Panel Pro to be able to work properly. Once these are available, Panel Pro lets you place these onto the panel and to build the signal logic for the signals.

A sensor in JMRI is the same as a detection block on the LocoNet. They can be automatically populated into the Sensor Table in Panel Pro based on the number assigned to each BDL168 on your layout. The LS prefix stands for LocoNet Sensor.

I needed to create a signal head in the Signal Head table for each signal on my layout. A triple-head mast, for instance, needs three separate heads for it in the table.

To assign a signal head to a signal, I added switch addresses of my Digitrax SE8C - Signal Driver boards. The Digitrax website has a full list of expanded switch addresses for Board IDs:

[www.digitrax.com/SE8chome.htm](http://www.digitrax.com/SE8chome.htm)

*Text continues on page 12 ...*

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# ELECTRICAL IMPULSES | 10

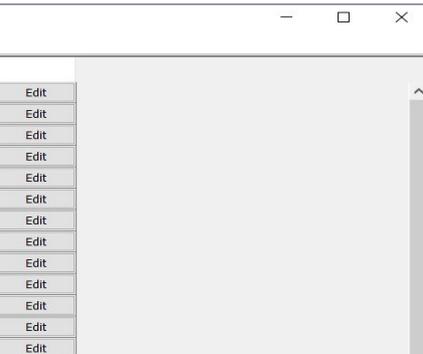
SE8C Driver Socket	Lighting aspect	"A" Orientation Signals				"B/C" Orientation Signals				SE8C Driver Socket	Lighting aspect	"A" Orientation Signals				"B/C" Orientation Signals																			
		A1 Main		A2 Diverging		B Main		C Siding				A1 Main		A2 Diverging		B Main		C Siding																	
		Switch	T/C	Switch	T/C	Switch	T/C	Switch	T/C			Switch	T/C	Switch	T/C	Switch	T/C	Switch	T/C																
<b>BOARD ID - 01</b>																		<b>BOARD ID - 02</b>																	
DRV1	1	RED	257	T	259	T	261	T	263	T	DRV1	1	RED	321	T	323	T	325	T	327	T														
	2	GREEN	257	C	259	C	261	C	263	C		2	GREEN	321	C	323	C	325	C	327	C														
	3	YELLOW	258	T	260	T	262	T	264	T		3	YELLOW	322	T	324	T	326	T	328	T														
	4	FLYEL	258	C	260	C	262	C	264	C		4	FLYEL	322	C	324	C	326	C	328	C														
DRV2	1	RED	265	T	267	T	269	T	271	T	DRV2	1	RED	329	T	331	T	333	T	335	T														
	2	GREEN	265	C	267	C	269	C	271	C		2	GREEN	329	C	331	C	333	C	335	C														
	3	YELLOW	266	T	268	T	270	T	272	T		3	YELLOW	330	T	332	T	334	T	336	T														
	4	FLYEL	266	C	268	C	270	C	272	C		4	FLYEL	330	C	332	C	334	C	336	C														
DRV3	1	RED	273	T	275	T	277	T	279	T	DRV3	1	RED	337	T	339	T	341	T	343	T														
	2	GREEN	273	C	275	C	277	C	279	C		2	GREEN	337	C	339	C	341	C	343	C														
	3	YELLOW	274	T	276	T	278	T	280	T		3	YELLOW	338	T	340	T	342	T	344	T														
	4	FLYEL	274	C	276	C	278	C	280	C		4	FLYEL	338	C	340	C	342	C	344	C														
DRV4	1	RED	281	T	283	T	285	T	287	T	DRV4	1	RED	345	T	347	T	349	T	351	T														
	2	GREEN	281	C	283	C	285	C	287	C		2	GREEN	345	C	347	C	349	C	351	C														
	3	YELLOW	282	T	284	T	286	T	288	T		3	YELLOW	346	T	348	T	350	T	352	T														
	4	FLYEL	282	C	284	C	286	C	288	C		4	FLYEL	346	C	348	C	350	C	352	C														
DRV5	1	RED	289	T	291	T	293	T	295	T	DRV5	1	RED	353	T	355	T	357	T	359	T														
	2	GREEN	289	C	291	C	293	C	295	C		2	GREEN	353	C	355	C	357	C	359	C														
	3	YELLOW	290	T	292	T	294	T	296	T		3	YELLOW	354	T	356	T	358	T	360	T														
	4	FLYEL	290	C	292	C	294	C	296	C		4	FLYEL	354	C	356	C	358	C	360	C														
DRV6	1	RED	297	T	299	T	301	T	303	T	DRV6	1	RED	361	T	363	T	365	T	367	T														
	2	GREEN	297	C	299	C	301	C	303	C		2	GREEN	361	C	363	C	365	C	367	C														
	3	YELLOW	298	T	300	T	302	T	304	T		3	YELLOW	362	T	364	T	366	T	368	T														
	4	FLYEL	298	C	300	C	302	C	304	C		4	FLYEL	362	C	364	C	366	C	368	C														
DRV7	1	RED	305	T	307	T	309	T	311	T	DRV7	1	RED	369	T	371	T	373	T	375	T														
	2	GREEN	305	C	307	C	309	C	311	C		2	GREEN	369	C	371	C	373	C	375	C														
	3	YELLOW	306	T	308	T	310	T	312	T		3	YELLOW	370	T	372	T	374	T	376	T														
	4	FLYEL	306	C	308	C	310	C	312	C		4	FLYEL	370	C	372	C	374	C	376	C														
DRV8	1	RED	313	T	315	T	317	T	319	T	DRV8	1	RED	377	T	379	T	381	T	383	T														
	2	GREEN	313	C	315	C	317	C	319	C		2	GREEN	377	C	379	C	381	C	383	C														
	3	YELLOW	314	T	316	T	318	T	320	T		3	YELLOW	378	T	380	T	382	T	384	T														
	4	FLYEL	314	C	316	C	318	C	320	C		4	FLYEL	378	C	380	C	382	C	384	C														

7. I made an Excel spreadsheet with the signal drivers and signal information in one place.

Signal Heads									
File View Window Help									
Turnouts	System Name	User Name	Appearance	Comment		Lit	Held		
Sensors	IH:SE8C:"LT781";"LT782"	CARLSJCTTK1N-SB-LWR	Red		Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Lights	IH:SE8C:"LT779";"LT780"	CARLSJCTTK1N-SB-MID	Red		Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Signal Heads	IH:SE8C:"LT777";"LT778"	CARLSJCTTK1N-SB-UPP	Green		Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Signal Masts	IH:SE8C:"LT787";"LT788"	CARLSJCTTK3E-LWR-DWF	Red		Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Signal Mast Logic	IH:SE8C:"LT785";"LT786"	CARLSJCTTK3E-UPP-DWF	Red		Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Reporters	IH:SE8C:"LT789";"LT790"	CARLSJCTTK3E-DWF	Red		Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Memory Variables	IH:SE8C:"LT797";"LT798"	GETTYSBK1N-LWR-MAST	Red		Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Routes	IH:SE8C:"LT795";"LT796"	GETTYSBK1N-MID-MAST	Red		Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
LRoutes	IH:SE8C:"LT793";"LT794"	GETTYSBK1N-UPP-MAST	Red		Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Logix	IH:SE8C:"LT733";"LT734"	HARRISBK1E-LWR-MAST	Red		Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Blocks	IH:SE8C:"LT731";"LT732"	HARRISBK1E-MID-MAST	Red		Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Sections	IH:SE8C:"LT729";"LT730"	HARRISBK1E-UPP-MAST	Flashing Yellow		Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Transits	IH:SE8C:"LT645";"LT646"	HBTK1E-SB-LWR	Red		Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Audio									
ID Tags									
RailCom IDs									

SIGNAL USERNAME	SE8C BOARD No	SE8C DRIVE No	DWF/MAST LT #'s	POSITION	ORIENTATION
					A1,A2,B,C
SHIPBTK1W-SB	2	1	321/322	UPP	A1
			323/324	MID	A2
			325/326	LWR	B
SHIPBTK3W-MAST	2	2	329/330	UPP	A1
YHAVENTK5-INT-DWF	2	2	333/334	SINGLE	B
YHAVENTK3E-DWF	2	4	345/346	UPP	A1
			347/348	LWR	A2
YORKTK4W-DWF	2	4	349/350	SINGLE	B
YHAVENTK5W-DWF	2	5	353/354	SINGLE	A1
SHIPBTK2W-DWF	2	6	361/362	UPP	A1
			363/364	LWR	A2
SHIPBTK2E-DWF	2	7	369/370	UPP	A1
			371/372	LWR	A2
SHIPBTK4E-DWF	2	7	373/374	SINGLE	B
			433/434	UPP	A1
HERSYTK1N	3	7	435/436	MID	A2
			437/438	LWR	B
			441/442	SINGLE	A1
HERSYTK3N-DWF	3	8	441/442	SINGLE	A1
S/SPRINGSTK1W-SB	4	3	465/466	UPP	A1
			467/468	MID	A2
			469/470	LWR	B
S/SPRINGSTK3W-SB	4	4	471/472	LWR	C
			473/474	UPP	A1
			475/476	MID	A2
RDGTK1W-MAST	4	5	481/482	SINGLE	A1
LEBNONTK3-MAST	4	5	483/484	SINGLE	A2
HBTK3W-DWF	6	4	601/602	UPP	A1
HBTK2E-SB	7	1	647/648	LWR	C
HBTK2E-SB	7	4	665/666	UPP	A1
			667/668	MID	A2
HBTK3E-DWF	7	5	673/674	SINGLE	A1
HBTK4E-DWF	7	6	681/682	SINGLE	A1

8. As mentioned in the previous two parts of this series, keeping a good record of information is essential.



9. When the signal heads are completed, they show in the Signal Heads Table.

Depending on the Board ID of the SE8C, there can be four individual switch addresses for each signal head. This allows red, yellow, green, and flashing yellow to be programmed for each signal head. These will change the aspects depending on if a board “switch address” is either thrown or closed.

For all Digitrax SE8C configurations and programming please refer to the following Digitrax manual: [www.digitrax.com/media/apps/products/detection-signaling/se8c/documents/SE8C.pdf](http://www.digitrax.com/media/apps/products/detection-signaling/se8c/documents/SE8C.pdf)

The signal heads then are added to the Signal Mast Table and assigned a username and the aspect. The “username” comes from a drop-down list in the layout editor, and lets you add that signal mast to the Panel Pro Panel.

The highlighted signal mast and separate signal heads in the above examples are the

*Text continues on page 16 ...*

Signal Masts	
File	View Tools Window Help
Turnouts	System Name
Sensors	IF\$shsm:NS-2008:CLS-3-3-hi(CARLISJCTTK1N-SB-UPP)(CARLISJCTTK1E-SB-MID)
Lights	IF\$shsm:NS-2008:CLS-3-3-lo(CARLISJCTTK3E-UPP-DWF)(CARLISJCTTK3E-SB-MID)
Signal Heads	IF\$shsm:NS-2008:CLS-3-lo(CARLISJCTTK3E-DWF)
Signal Groups	IF\$shsm:NS-2008:CLS-3-3-hi(GETTYSBTK1N-UPP-MAST)(GETTYSBTK1E-SB-MID)
Signal Mast Logic	IF\$shsm:NS-2008:CLS-3-3-hi(HARRISBTK1E-UPP-MAST)(HARRISBTK1E-SB-MID)
Reporters	IF\$shsm:NS-2008:CLS-3-3-hi(HBTK1E-SB-UPP)(HBTK1E-SB-MID)
Memory Variables	IF\$shsm:NS-2008:CLS-3-3-hi(HBTK1W-SB-UPP)(HBTK1W-SB-MID)
Routes	IF\$shsm:NS-2008:CLS-3-3-hi(HBTK2E-SB-UPP)(HBTK2E-SB-MID)
L.Routes	IF\$shsm:NS-2008:CLS-3-3-hi(HBTK2W-SB-UPP)(HBTK2W-SB-LWR)
Logix	IF\$shsm:NS-2008:CLS-3-lo(HBTK3E-DWF)
Blocks	IF\$shsm:NS-2008:CLS-3-lo(HBTK3W-DWF)
Sections	IF\$shsm:NS-2008:CLS-3-lo(HERSHYTK2N-DWF)
Transits	IF\$shsm:NS-2008:CLS-3-3-hi(HERSYTK1S-SB-UPP)(HERSYTK1S-SB-MID)
Audio	IF\$shsm:NS-2008:CLS-3-3-hi(HERSYTK1N-UPP)(HERSYTK1N-MID)
ID Tags	IF\$shsm:NS-2008:CLS-3-3-hi(HERSYTK2S-SB-UPP)(HERSYTK2S-SB-MID)
RailCom IDs	IF\$shsm:NS-2008:CLS-3-lo(HUMLTWNTK1W-DWF-UPP)(HUMLTWNTK1W-UPP-SB)(HUMLTWNTK1W-UPP-SB-MID)
	IF\$shsm:NS-2008:CLS-3-lo(HUMLTWNTK3W-DWF-UPP)(HUMLTWNTK3W-UPP-SB)(HUMLTWNTK3W-UPP-SB-MID)
	IF\$shsm:NS-2008:CLS-3-3-hi(LBNTK1-SB-UPP)(LBNTK1-SB-MID)
	IF\$shsm:NS-2008:CLS-3-3-hi(LBNTK3-SB-UPP)(LBNTK3-SB-LWR)
	IF\$shsm:NS-2008:CLS-3-lo(LBNTK3-DWF)
	IF\$shsm:NS-2008:CLS-3-lo(RDGTGK1E-DWF)
	IF\$shsm:NS-2008:CLS-3-lo(RDGTGK1W-DWF)
	IF\$shsm:NS-2008:CLS-3-lo(RDGTGK3E-DWF)
	IF\$shsm:NS-2008:CLS-3-3-hi(RUTHTK1E(N)-SB-UPP)(RUTHTK1E(N)-SB-MID)
	IF\$shsm:NS-2008:CLS-3-3-hi(RUTHTK1E(S)-SB-UPP)(RUTHTK1E(S)-SB-MID)
	IF\$shsm:NS-2008:CLS-3-3-hi(S/SPRINGSTK1W-SB-UPP)(S/SPRINGSTK1E-SB-MID)
	IF\$shsm:NS-2008:CLS-3-3-hi(S/SPRINGSTK3W-SB-UPP)(S/SPRINGSTK3E-SB-MID)
	IF\$shsm:NS-2008:CLS-3-3-hi(SHIPBTK1E-SB-UPP)(SHIPBTK1E-SB-MID)
	IF\$shsm:NS-2008:CLS-3-3-lo(SHIPBTK2E-UPP-D/DWF)(SHIPBTK2E-D/DWF)
	IF\$shsm:NS-2008:CLS-3-lo(SHIPBTK2W-DWF)
	IF\$shsm:NS-2008:CLS-3-3-lo(SHIPBTK3W-DWF-UPP)(SHIPBTK3W-DWF-UPP)
	IF\$shsm:NS-2008:CLS-3-lo(SHIPBTK4E-DWF)
	IF\$shsm:NS-2008:CLS-3-lo(YHAVENTK3E-DWF)
	<

## 10. Table of signal masts and individual signal heads

IH:SE8C:"LT733";"LT734"	HARRISBTK1E-LWR
IH:SE8C:"LT731";"LT732"	HARRISBTK1E-MID
IH:SE8C:"LT729";"LT730"	HARRISBTK1E-UPP

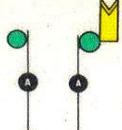
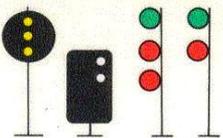
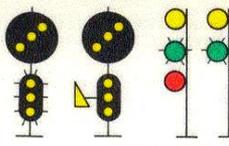
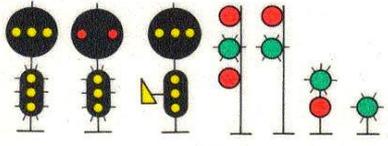
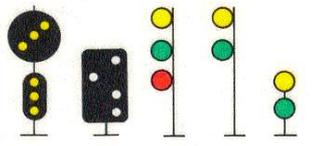
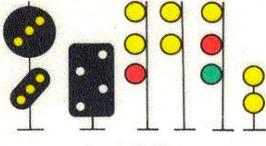
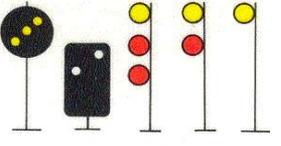
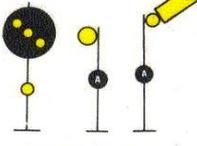
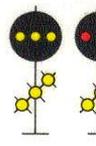
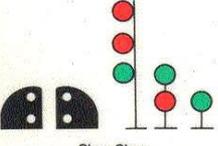
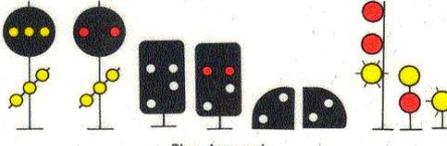
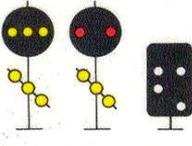
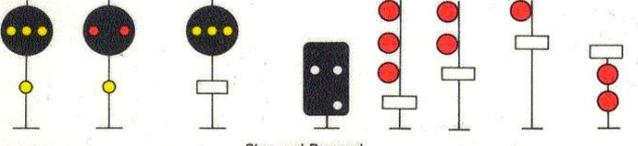
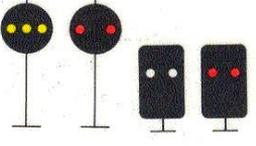
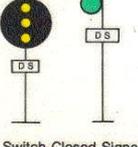
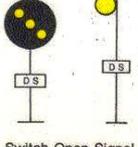
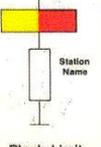
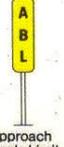
## 11. The naming convention includes middle, or lower.

	User Name ^	Aspect	Comment	Delete	Edit	Edit Logic	Lit	Held
CTTK1K1N-SB-MID)(CARLISJCTTK1N-SB-LWR)	CARLISJCTTK1N-CSB	Clear		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CTTK3E-LWR-DWF)	CARLISJCTTK3E-DWF	Stop Signal		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(SBTK1N-MID-MAST)(GETTYSBTK1N-LWR-MAST)	CARLISJCTTK3E-DWF	Stop Signal		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SBTK1E-MID-MAST)(HARRISBTK1E-LWR-MAST)	GETTYSBTK1N-MAST	Stop Signal		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(HBTk1E-SB-LWR)	HARRISBTK1E-MAST	Advance Approach		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D)(HBTk1W-SB-LWR)	HBTk1E-SB	Approach		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(HBTk2E-SB-LWR)	HBTk1W-SB	Approach		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
)	HBTk2E-SB	Stop Signal		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	HBTk2W-SB	Stop Signal		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	HBTk3E-DWF	Stop Signal		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	HBTk3W-DWF	Limited Clear		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	HERSHYTK2N-DWF	Slow Approach		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
-SB-MID)(HERSYTK1S-SB-LWR)	HERSYTK1S-SB	Approach Limited		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D)(HERSYTK1N-LWR)	HERSYTK1N-CSB	Clear		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
-B-LWR)	HERSYTK2S-SB	Approach		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
WNTK1W-DWF-LWR)	HUMLTWNTK1W-DWF	Approach Slow		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
WNTK1W-MID-SB)(HUMLTWNTK1W-LWR-SB)	HUMLTWNTK1W-SB	Stop Signal		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
WNTK3W-DWF-LWR)	HUMLTWNTK3W-DWF	Clear		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
WNTK3W-LWR-SB)	HUMLTWNTK3W-SB	Limited Clear		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(LBNTK1-SB-LWR)	LBNTK1-SB	Advance Approach		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	LBNTK3-SB	Approach		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	LEBNONTK3-DWF	Slow Approach		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	RDGK1E-DWF	Slow Approach		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	RDGK1W-DWF	Stop Signal		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	RDGK3E-DWF	Slow Clear		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(N)-SB-MID)(RUTHTK1E(N)-SB-LWR)	RUTHTK1E(N)-SB	Stop Signal		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(S)-SB-MID)(RUTHTK1E(S)-SB-LWR)	RUTHTK1E(S)-SB	Limited Clear		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
NGSTK1W-SB-MID)(S/SPRINGSTK1W-SB-LWR)	S/SPRINGSTK1W-SB	Stop Signal		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
NGSTK3W-SB-MID)(S/SPRINGSTK3W-SB-LWR)	S/SPRINGSTK3W-SB	Stop Signal		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
-B-MID)(SHIPBTK1E-SB-LWR)	SHIPBTK1E-SB	Approach Limited		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
-SB-MID)(SHIPBTK1W-SB-LWR)	SHIPBTK1W-SB	Clear		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
-LWR-D/DWF)	SHIPBTK2E-D/DWF	Stop Signal		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
-DWF-LWR)	SHIPBTK2W-DWF	Slow Approach		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	SHIPBTK3W-DWF	Medium Approach		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	SHIPBTK4E-DWF			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	YHAVENTK3E-DWF	Slow Approach		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

ual signal aspects.

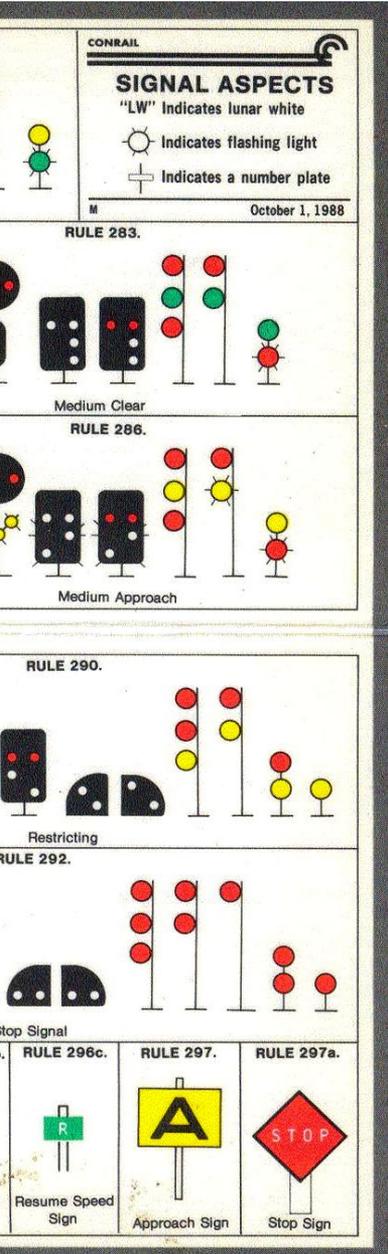
R-MAST	Red	▼	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
-MAST	Red	▼	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
-MAST	Flashing Yellow	▼	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit

s the position of the signal head within the mast, either upper,

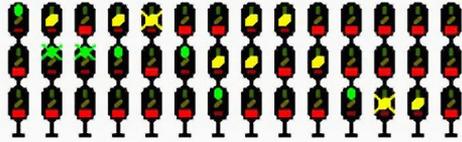
<p><b>RULE 280a.</b></p>  <p>Clear to next interlocking</p>	<p><b>RULE 280b.</b></p>  <p>Approach Clear</p>	<p><b>RULE 281.</b></p>  <p>Clear</p>	<p><b>RULE 281b.</b></p>  <p>Approach Limited</p>				
<p><b>RULE 281c.</b></p>  <p>Limited Clear</p>		<p><b>RULE 282.</b></p>  <p>Approach Medium</p>					
<p><b>RULE 284.</b></p>  <p>Approach Slow</p>	<p><b>RULE 285.</b></p>  <p>Approach</p>	<p><b>RULE 285a.</b></p>  <p>Approach Restricting</p>					
<p><b>RULE 287.</b></p>  <p>Slow Clear</p>	<p><b>RULE 288.</b></p>  <p>Slow Approach</p>						
<p><b>RULE 291.</b></p>  <p>Stop and Proceed</p>							
<p><b>RULE 293.</b></p>  <p>Switch Closed Signal</p>	<p><b>RULE 293a.</b></p>  <p>Switch Open Signal</p>	<p><b>RULE 294.</b></p>  <p>Clear Slide Detector Signal</p>	<p><b>RULE 294a.</b></p>  <p>Slide Detector Signal</p>	<p><b>RULE 295.</b></p>  <p>Block-Limit</p>	<p><b>RULE 295a.</b></p>  <p>Approach Block-Limit</p>	<p><b>RULE 296a.</b></p>  <p>Approach Speed Limit Sign</p>	<p><b>RULE 296b.</b></p>  <p>Speed Limit Sign</p>

## 12. Conrail 1986 Signal Definitions and NS (Norfolk Southern) 2008 - Sig

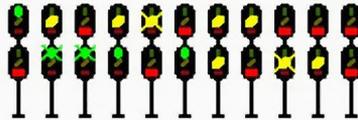
## Signal Mast Definition Files



### Triple head 3 color light high signal



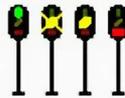
### Double head 3-3 color light high signal



### Double head 3-3 color light dwarf signal



### Single head 3 color light high signal



### Single head 3 color light permissive high signal with number plate



### Single head 3 color light low signal



### 171 Territory



Signal Definitions in JMRI.

Harrisburg, track 1, east, triple-head mast. As mentioned in Part 1, I adopted a common and consistent naming convention. [11] shows this naming convention for the separate signal heads.

My JMRI signal system follows the NS 2008 definitions. These closely track with the Reading Lines and later Conrail. Therefore, the signal indication system for my layout follows the “NS (Norfolk Southern) 2008 - Signal Definitions” that are part of the JMRI signal program. See:

[jmri.org/xml/signals/NS-2008/index.shtml](http://jmri.org/xml/signals/NS-2008/index.shtml)

The username for a signal can be anything you choose as long as it is consistent across all the software. I use an abbreviated name based on the location of the signal, track number, direction, and the type of signal.

Here is a video describing how to add switch addresses to signal heads, and then add signal heads to signal masts.



Watch on 

## JMRI Panel Pro tutorials

### 1: Adding signal heads and masts to Panel Pro tables

  
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*Please see the Dec 2018 Model Railroad Hobbyist magazine to understand how this video fits into the full Panel Pro how-to*

13. Video: Adding signal head masts to JMRI Panel Pro tables.

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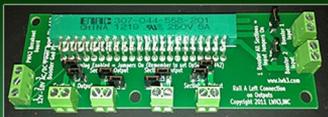
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## The Panel Pro panel

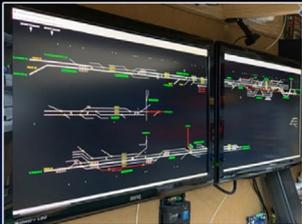
We need a panel to display the occupancy of blocks on the layout, the position of turnouts, and the needed aspects on our signals

I have two 23-inch side-by-side LED monitors to display the layout in full. The panel, named the Harrisburg & Shippensburg Division – 1975, has three track sections, one above another [15, 16].

The top section is the outer loop of the layout from Rutherford back around to Carlisle Junction. The middle section is the inner loop from Manheim Junction through to Harrisburg., and the bottom section is from Sinking Springs to Reading.

There are layout sections not visible in the main layout diagram here: Rutherford Yard, engine service facility, and under-deck staging.

This video shows adding track and turnouts to Panel Pro.



Watch on 

## JMRI Panel Pro tutorials

### 2: Adding turnouts and track to Panel Pro



*Please see the Dec 2018 Model Railroad Hobbyist magazine to understand how this video fits into the full Panel Pro how-to*

## 14. Video: Adding turnouts and track to JMRI Panel Pro.

# END OF TRAIN DEVICE

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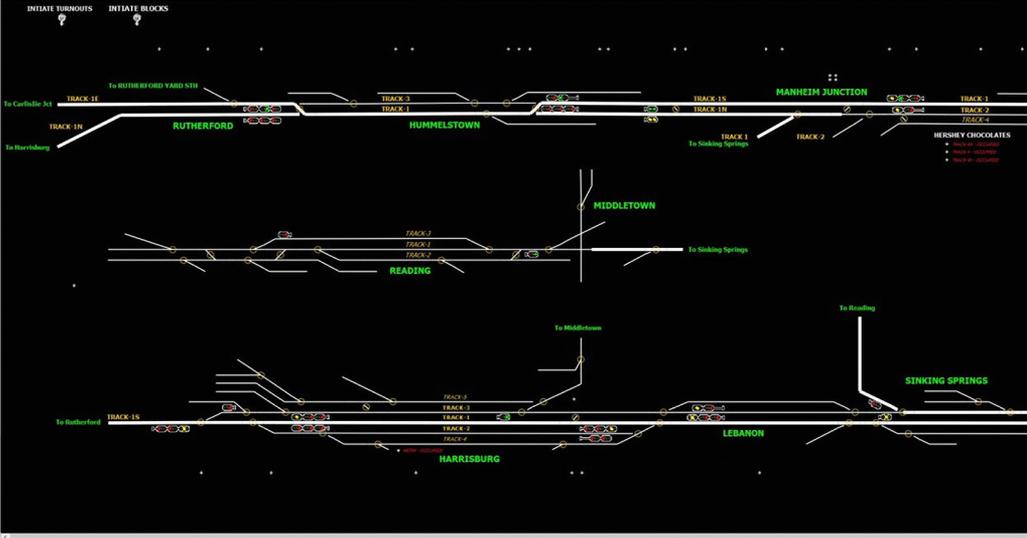


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HARRISBURG & SHIPPENSBURG DIVISION - 1975

File Options Tools Zoom Marker Dispatcher Window Help



15. The Harrisburg & Shippensburg Division panel. (Zoom in for a closer look ...)

## Digitrax board ID configurations

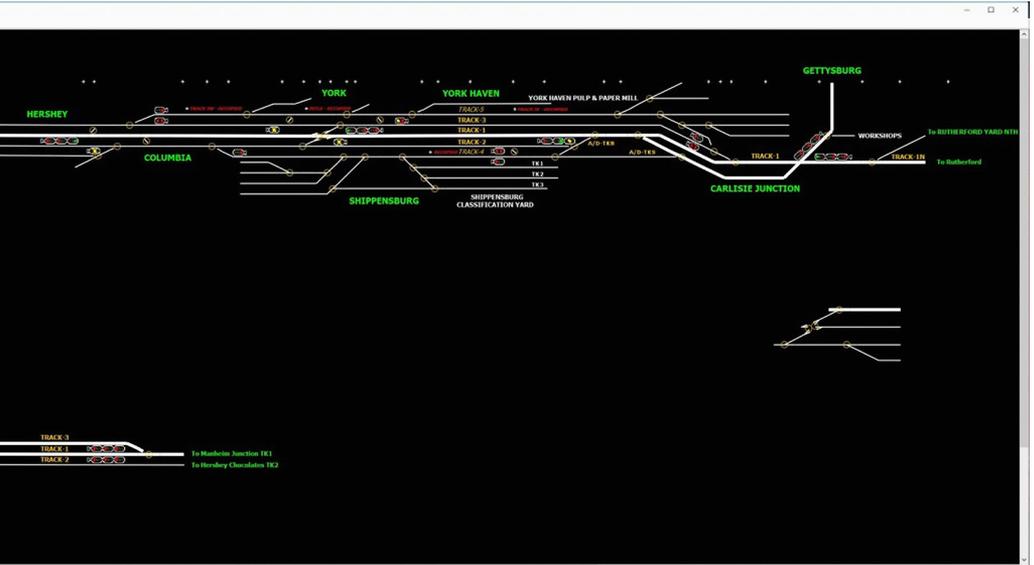
The switch addresses come from the board number programmed into each SE8C. [17a] is directly from the Digitrax SE8C manual.

When programming the switch addresses for turnouts and sensors, take care to avoid duplicate names. The table in [17b] shows the programmed board numbers to achieve non-duplicate switch names between the SE8C and BDL168.

You can see all this illustrated in the next spread.



*Go to the next spread ...*



16. Here are the twin 23" monitors I use to display my panel.

17a→. Setting the SE8C board ID table from the Digitrax manual.

## Setting the Board ID

1. Press the ID button down and hold it until the Green LED starts blinking, then release the button.
2. Using your Throttle or PC train control software, select the switch address that will become the Board ID Number and issue a switch command.
3. The Green LED will stop blinking when the slow motion turnout address and signal control address ranges have been updated.
4. The following table details the slow motion turnout and signal switch address ranges associated with each SE8C Board ID Number:

Board ID  (Press ID Button, set Sw# for Board ID number)	Slow Motion Turnout Machine Switch Address Range 8 Per SE8C	Signal Control Switch Address Range 4 Aspects Per Head 64 Per SE8C	Signal Control Switch Address Range 2 Aspects Per Head 32 Per SE8C
<b>01 (factory setting)</b>	<b>Sw01-Sw08</b>	<b>Sw257-Sw320</b>	<b>Sw257-Sw288</b>
02	Sw09-Sw16	Sw321-Sw384	Sw289-Sw320
03	Sw17-Sw24	Sw385-Sw448	Sw321-Sw352
04	Sw25-Sw32	Sw449-Sw512	Sw353-Sw384
05	Sw33-Sw40	Sw513-Sw576	Sw385-Sw416
06	Sw41-Sw48	Sw577-Sw640	Sw417-Sw448
07	Sw49-Sw56	Sw641-Sw704	Sw449-Sw480
08	Sw57-Sw64	Sw705-Sw768	Sw481-Sw512
09	Sw65-Sw72	Sw769-Sw832	Sw513-Sw544
10	Sw73-Sw80	Sw833-Sw896	Sw545-Sw576
11	Sw81-Sw88	Sw897-Sw960	Sw577-Sw608
12	Sw89-Sw96	Sw961-Sw1024*	Sw609-Sw640

\*A Board IDs above 12 require a computer train control program to access the switch address ranges above Sw1000. See [www.digitrax.com/SE8chome.htm](http://www.digitrax.com/SE8chome.htm) for expanded Board ID table with slow motion turnout switch address ranges available for use.

17b↓. A table of available switch and sensor identifiers helps avoid duplicating switch names.

	Input and output														
	Se8C	Se8C	Se8C	Se8C	Se8C	Se8C	Se8C	Se8C	Se8C	Spare	Spare	Input only..			
Config number	1	2	3	4	5	6	7	8	9	10	6	7	8	9	10
Board number	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
Ports to be configured on the boards	1	9	17	25	33	41	49	57	65	73	81	97	113	129	145
	2	10	18	26	34	42	50	58	66	74	82	98	114	130	146
	3	11	19	27	35	43	51	59	67	75	83	99	115	131	147
	4	12	20	28	36	44	52	60	68	76	84	100	116	132	148
	5	13	21	29	37	45	53	61	69	77	85	101	117	133	149
	6	14	22	30	38	46	54	62	70	78	86	102	118	134	150
	7	15	23	31	39	47	55	63	71	79	87	103	119	135	151
	8	16	24	32	40	48	56	64	72	80	88	104	120	136	152
											89	105	121	137	153
											90	106	122	138	154
											91	107	123	139	155
											92	108	124	140	156
											93	109	125	141	157
											94	110	126	142	158
											95	111	127	143	159
											96	112	128	144	160





J. Fugate

## IMPORTANT: WATCH THE VIDEOS!

To better understand how the JMRI programming of Panel Pro works, you *must* watch the videos associated with this article. If you only read the text, you're missing a lot ...

Feeling lost? *Watch the videos!*

## Adding block sensors to track segments and turnouts

To show occupancy on track segments and turnouts, we need to add layout block sensors to them. The sensors are associated with the Digitrax - BDL168 blocks and derived from the sensor table within Panel Pro.

To add sensors to detected track segments, right-click on the track segment and add the appropriate sensor.

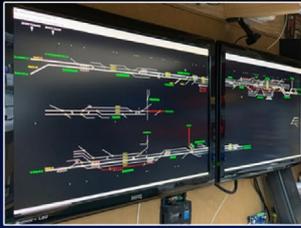
Once the sensor LS1 has been added to the track segment, we can add a sensor icon above the track segment on the panel. See the video [18] for more.

This two-step process results in two advantages.

When the track is occupied, the sensor icon will be lit, giving you a strong visual indicator of that track's status. Using the sensor icon, you can also mark the track segment as occupied by just clicking it.

When using the LocoNet simulator Mode to program signal logic, you can manually activate the individual track segments and turnouts to test your signal logic as you go.

This saves having to do all your signal logic programming while connected to the layout.



[mrhmag.com](http://mrhmag.com)

Watch on



## JMRI Panel Pro tutorials

### 3: Adding sensors to track segments in Panel Pro

*Please see the Dec 2018 Model Railroad Hobbyist magazine to understand how this video fits into the full Panel Pro how-to*

## 18. Video: Using Panel Pro to add sensors to track segments/blocks and turnouts.

To add the sensor icons we use the quick menu drop-down box. Click on the sensor icon – in this case LS1 – and while holding down the shift key, left click on the panel where you want the sensor icon placed.

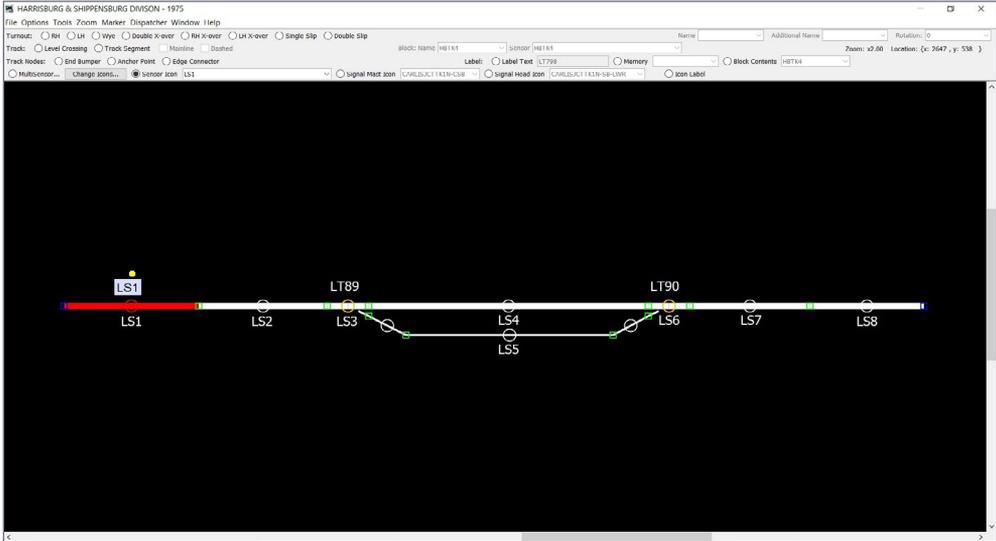


J. Miller

### ADDING INTERNAL SENSORS

We can also create “internal sensors” within Panel Pro to allow a dispatcher to manually tag a location as an occupied track segment. This track segment isn’t connected to a BDL168, and so is undetected track.

Some of my larger industries have undetected sidings, so being able to manually toggle them as “occupied” in Panel Pro helps the dispatcher and avoids accidents.



19. When the track segment is occupied, the sensor indicator will light along with the track segment. You can also manually activate the sensor by clicking on it.

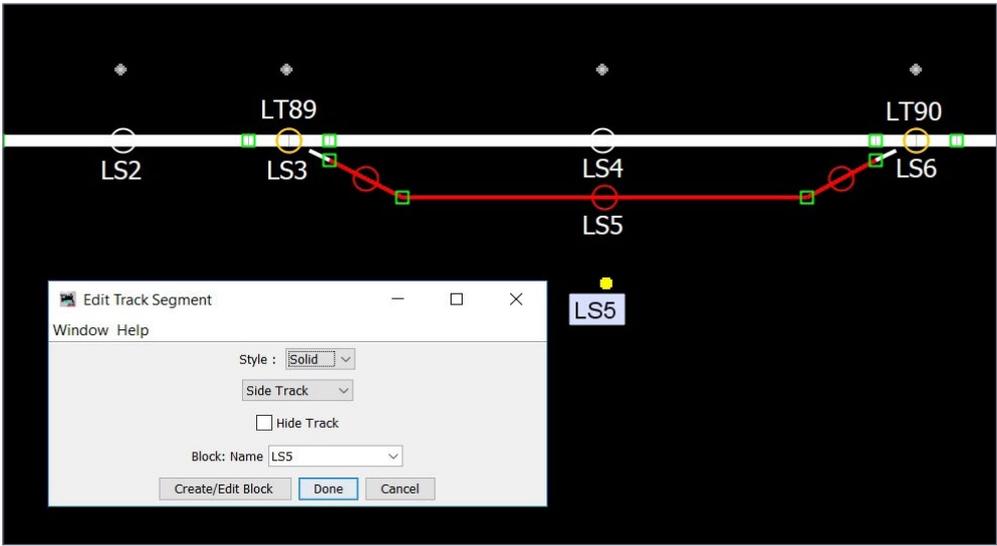
## Adding one sensor to multiple track segments

There will be occasions when you need to have multiple track segments connected together, but only require one sensor to detect them as a single block.

On our example of a passing siding [20, next page], the three track segments of the siding get detected as one signal block on the BDL168. In Panel Pro, we assign the same sensor number to each track segment, which groups them together as a single unit.



*Go to the next page ...*



20a, b. To combine multiple track segments, we program each segment in the passing siding with the same sensor number, in this case LS5.

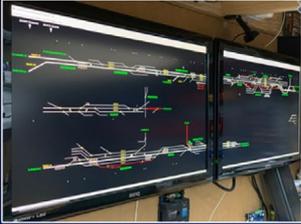


## Adding a switch address to turnouts in Panel Pro

When turnouts are added to the panel, we need to configure them so we can operate the switch machines. I use Tortoise slow-motion switch machines.

I operate these Tortoise switch machines with a momentary push button on my fascia panels, or directly via the Panel Pro panel. The turnout requires a designated switch address from one of the Digitrax SE8C's connected to the standalone LocoNet.

I explain the process for adding switch addresses and sensors to turnouts in a video [21].



Watch on 

# JMRI

## Panel Pro tutorials

### 4: Adding switch addresses and sensors to turnouts in Panel Pro



*Please see the Dec 2018 Model Railroad Hobbyist magazine to understand how this video fits into the full Panel Pro how-to*

21. Video: Using Panel Pro to add switch and sensor addresses.



## Adding signal masts and dwarf signals to the panel

On my Panel Pro screen, I use two methods to place the signal masts and dwarf signals. The two placing methods I use are:

- Placing a signal mast at a turnout, and
- Placing a signal via the “shift down/add” feature.

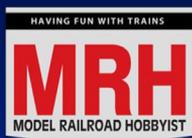
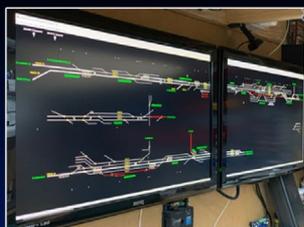
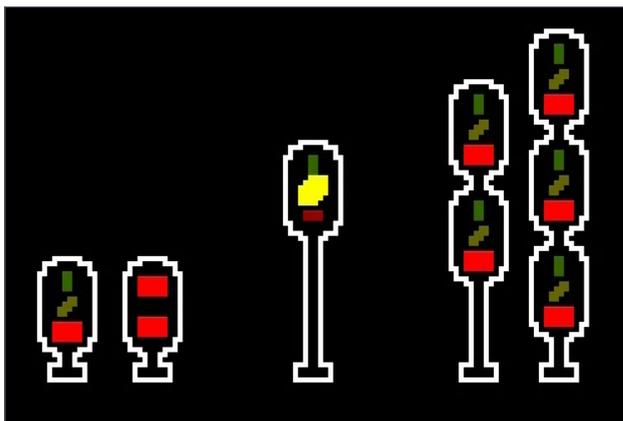
The symbol is defined when setting up the signal mast table. The dwarf signals are either single or double. The masts have the longer single-head, and the signal bridges have either double and/or triple-heads.

The following video [24] explains how to add a triple-head mast to the turnout LT89 on our Panel Pro panel and test section of track.



22. The “set a signal mast” at a turnout feature allows you to add a signal to the throat for the continuing and/or diverging routes of a turnout.

23. As discussed in Part 2, I use a combination of dwarf, mast, and signal bridges on the layout. When displaying these on the panel they are represented by these JMRI symbols.



[mrhmag.com](http://mrhmag.com)

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## JMRI Panel Pro tutorials

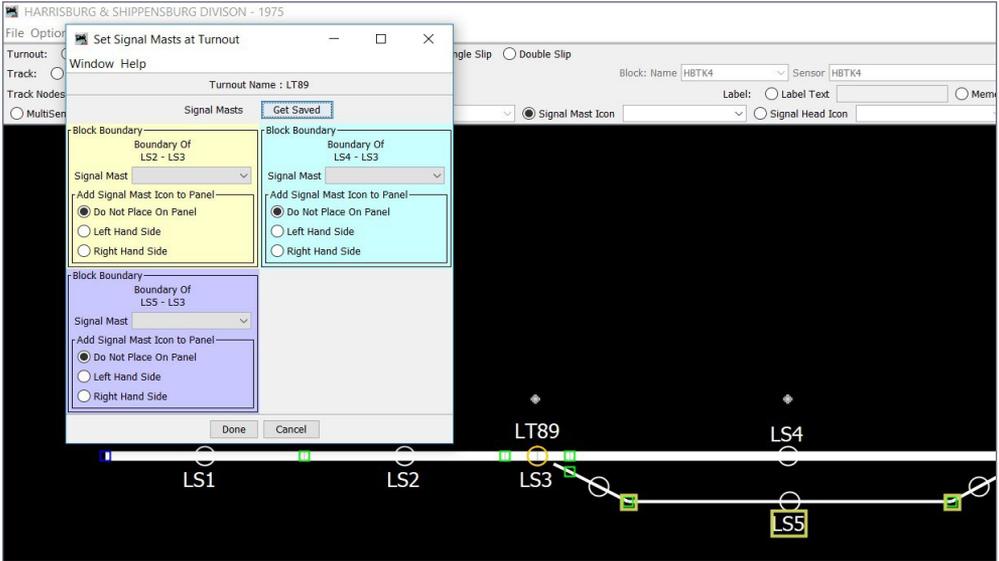
### 5: Adding signal masts to the track layout in Panel Pro

*Please see the Dec 2018 Model Railroad Hobbyist magazine to understand how this video fits into the full Panel Pro how-to*

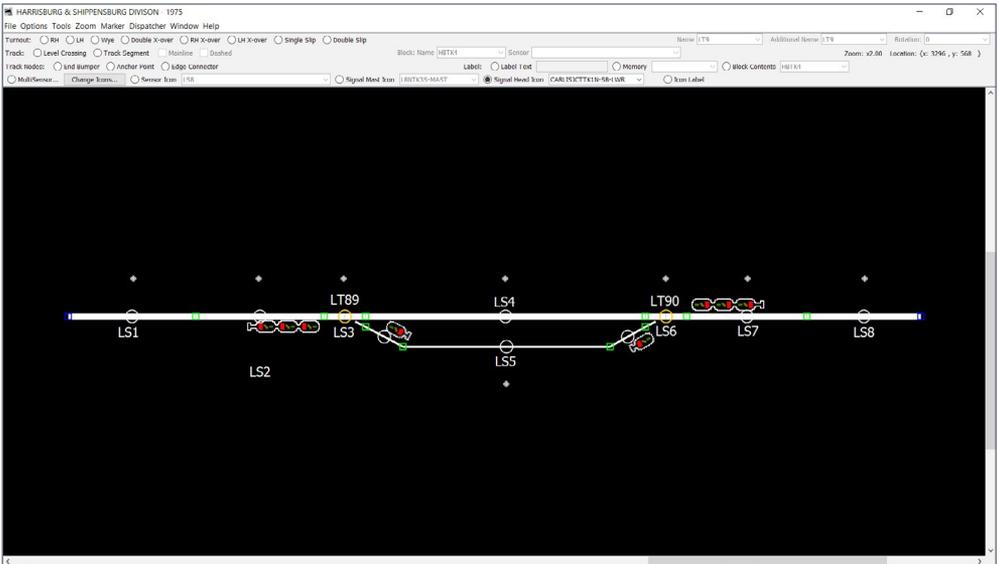
24. Video: Adding signal masts to Panel Pro.



*More illustrations on the next page ...*



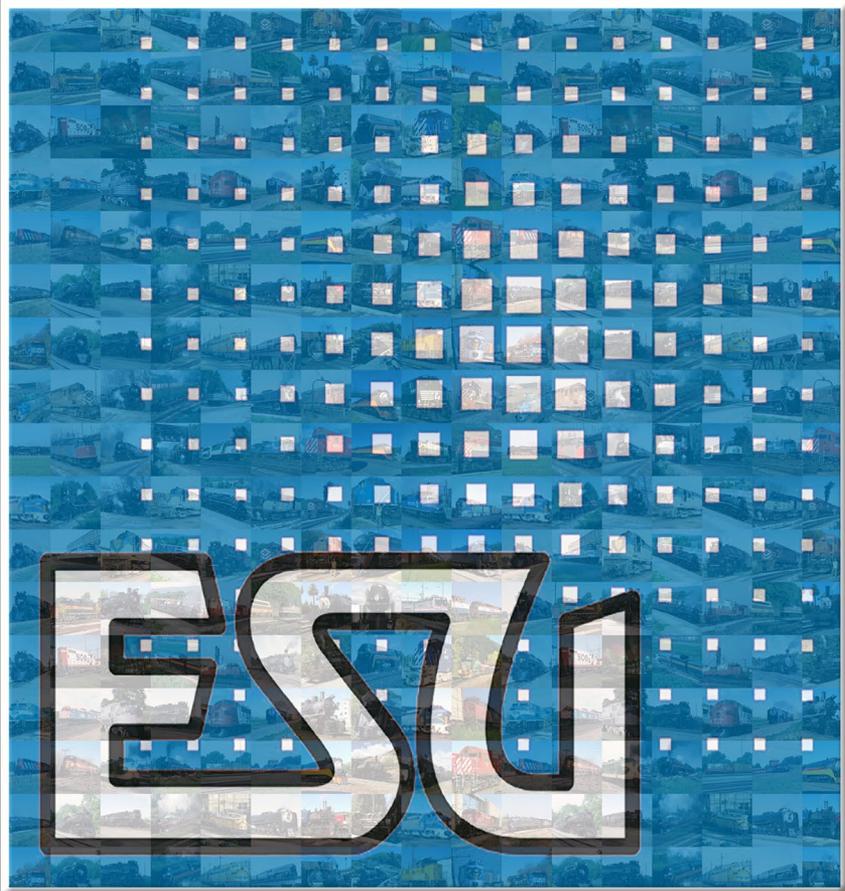
25. When adding signal masts to Panel Pro, each block boundary has options for placing or not placing a signal there.



26. Once triple-head masts and single-head dwarf signals are placed onto the panel, it should look like this.

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## Programming signal logic

The signal mast configuration example shown in [25] is not particularly prototypical. It is shown purely to explain how we program the signal logic within JMRI - Panel Pro. There are many variations for signal placement, and they all depend on what signal system you decide to model on *your* layout.

Within Panel Pro there are various methods for placing signals on your panels. Read the following guides before embarking on the programming of your system's signal logic.

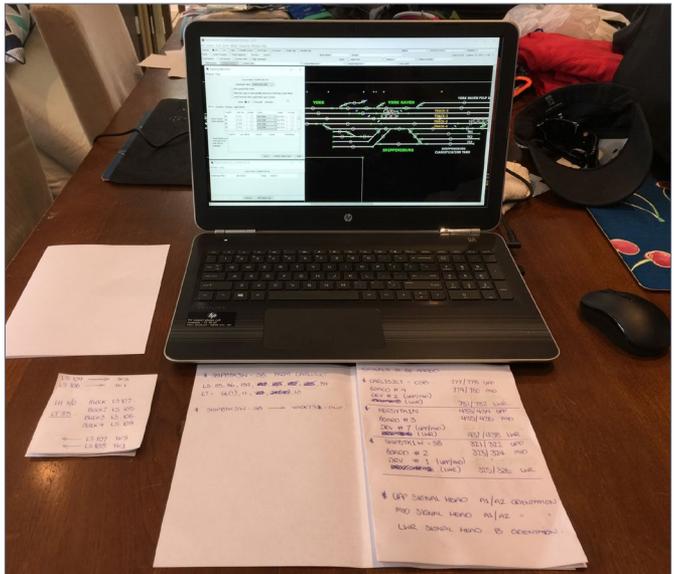
[jmri.org/help/en/html/tools/signaling/SignalingSetup.shtml](http://jmri.org/help/en/html/tools/signaling/SignalingSetup.shtml)

[jmri.org/help/en/html/tools/signaling/AspectSignaling.shtml](http://jmri.org/help/en/html/tools/signaling/AspectSignaling.shtml)

[jmri.org/help/en/html/tools/signaling/SignalMastLogic.shtml](http://jmri.org/help/en/html/tools/signaling/SignalMastLogic.shtml)

I could write another two or three parts on just programming signal logic within JMRI and Panel Pro! (*Oh boy ... - ed.*)

27. When working out paths for signal logic, I record them on paper first.



With Panel Pro, we start with a source signal and finish with a destination signal. A source signal can have multiple paths to destination signals. We just need to program the logic for each path. A signal can be a dwarf or on a mast or a signal bridge.

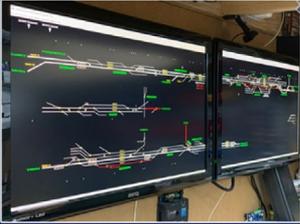
All the programming for signal logic on my layout has been achieved manually. There is a automatic function in Panel Pro so that signals can be automatically placed onto your layout, but I wanted to program all the logic manually because some of my trackage is complex.

We need to know a few basic things to get started:

- Blocks a train passes through when enroute between two signals.
- Position of any turnouts in that path.

With this recorded, we can begin programming the signal logic.

All of the programming involves drop-down menus and selecting options. Video [28] runs through installing the sensors/blocks and turnouts into the signal logic between two signal masts.



Watch on 

## JMRI

### Panel Pro tutorials

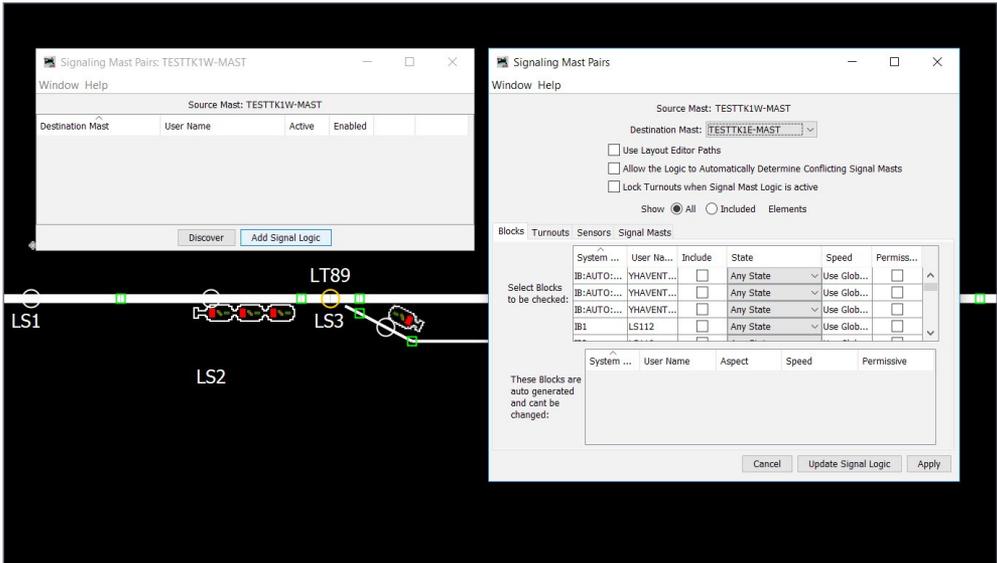
#### 6: Adding signal logic to the signals and track in Panel Pro



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*Please see the Dec 2018 Model Railroad Hobbyist magazine to understand how this video fits into the full Panel Pro how-to*

28. Video: Adding signal logic in Panel Pro.

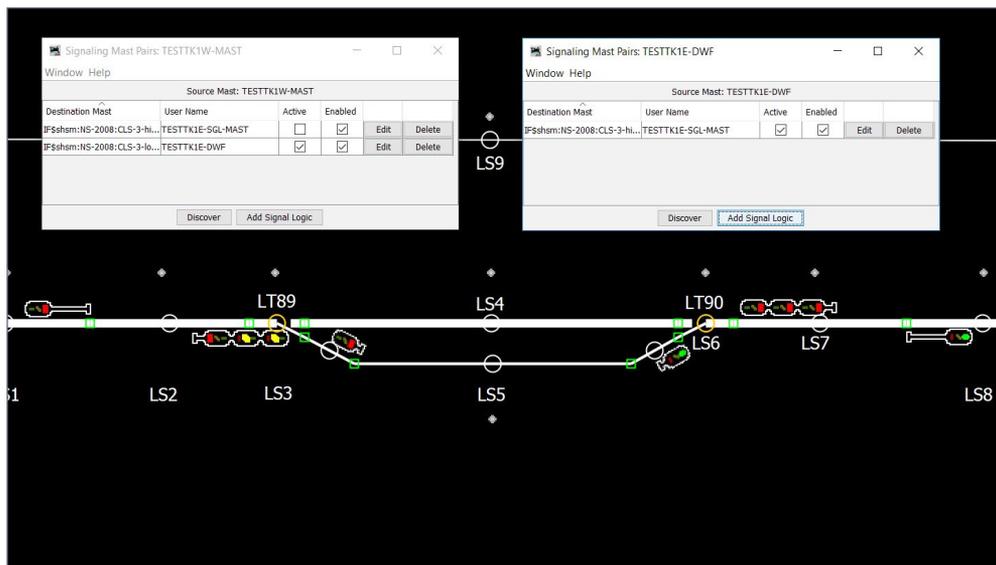


29. These menus are the signal logic input windows that allow the paths to be set, along with linking the blocks and turnouts.

Once the signal logic is added, the signals begin to show the status of the blocks ahead of the programmed signal mast. Remember that the indication and aspect are dictated by the signal definitions you program into each signal mast.

The signal logic for the remaining masts and dwarfs is added in the same manner. If more than one path is available, the signal logic for each path needs to be added separately.

When the signal logic is working correctly, the masts and dwarfs will display the correct aspect as defined. In [30] notice that the triple-head mast is displaying a double yellow-over-red (Slow Approach) aspect. This happens when the LT89 and LT90 turnouts get aligned into the passing siding, and linked to the single-head mast at the far end of the siding displaying a green clear aspect.



30. This screenshot shows the signal logic now functioning from the triple-head mast on the left to the single-head mast on the right, through the passing siding.

## Rule N284: Approach Slow

Indication: Proceed, approaching next signal at Slow Speed.  
 Trains exceeding Medium Speed must at once reduce to that speed.



Speed: Medium

Speed2: Slow

Route: Normal

Default DCC Aspect: 19

31a. The NS 2008 - signal definition in JMRI for a triple-head mast displaying a double yellow-over-red aspect.

The image shows three overlapping windows from the software 'Panel Pro', each displaying a list of signaling mast pairs. The windows are titled 'Signaling Mast Pairs: TESTTK1W-SGL-MAST', 'Signaling Mast Pairs: TESTTK1W-MAST', and 'Signaling Mast Pairs: TESTTK1W-DWF'. Each window has a 'Window Help' menu and a 'Source Mast' field. Below this is a table with columns for 'Destination Mast', 'User Name', 'Active', and 'Enabled', and buttons for 'Edit' and 'Delete'. The 'Active' and 'Enabled' columns contain checkboxes.

Destination Mast	User Name	Active	Enabled		
IF\$shsm:NS-2008:CLS-3-3...	TESTTK1E-MAST	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Edit	Delete

Destination Mast	User Name	Active	Enabled		
IF\$shsm:NS-2008:CLS-3-hi...	TESTTK1E-SGL-MAST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Edit	Delete
IF\$shsm:NS-2008:CLS-3-lo...	TESTTK1E-DWF	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Edit	Delete

Destination Mast	User Name	Active	Enabled		
IF\$shsm:NS-2008:CLS-3-hi...	TESTTK1W-SGL-MAST	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Edit	Delete

### 31b: What this signal logic looks like in Panel Pro.

If we look at the specific signal definition in JMRI, we can see Rule N284 and the explanation for the indication [31a]. Remember the “aspect” is what color or combination of colors is displayed on the signal heads. The “indication” tells the engineer what they must do to the train’s speed based on the aspect.

When all of the signal logic is completed for the masts and dwarfs on our test section of track, it should look like this [31b].

TK1E-SGL-MAST

Source Mast: TESTTK1E-SGL-MAST

Name	Active	Enabled		
TK1W-MAST	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Edit	Delete

Discover Add Signal Logic

---

TK1E-MAST

Source Mast: TESTTK1E-MAST

Name	Active	Enabled		
TK1W-SGL-MAST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Edit	Delete
TK1W-DWF	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Edit	Delete

Discover Add Signal Logic

---

TK1E-DWF

Source Mast: TESTTK1E-DWF

Name	Active	Enabled		
TK1E-SGL-MAST	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Edit	Delete

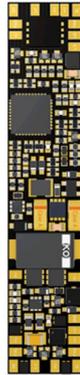
Discover Add Signal Logic

And the panel looks like this [32], with both turnouts allowing for travel through the passing siding.

Looking at one specific triple-head signal on my panel, we see the signal logic when multiple routes exist.

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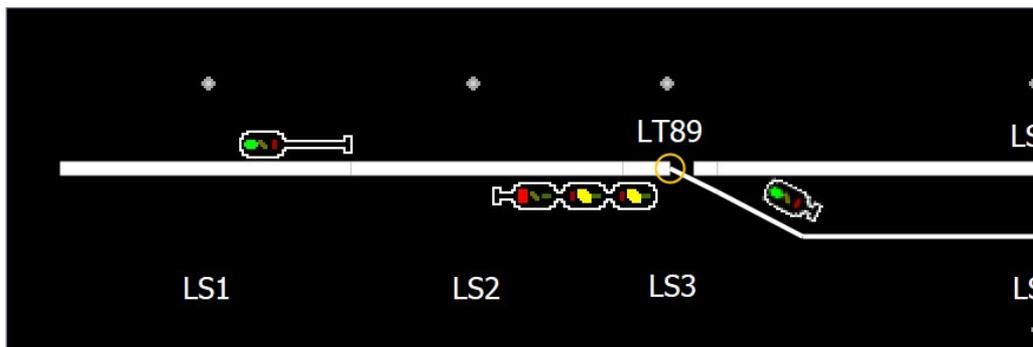
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32↑. Screenshot showing the completed signal logic now operating on all signals.

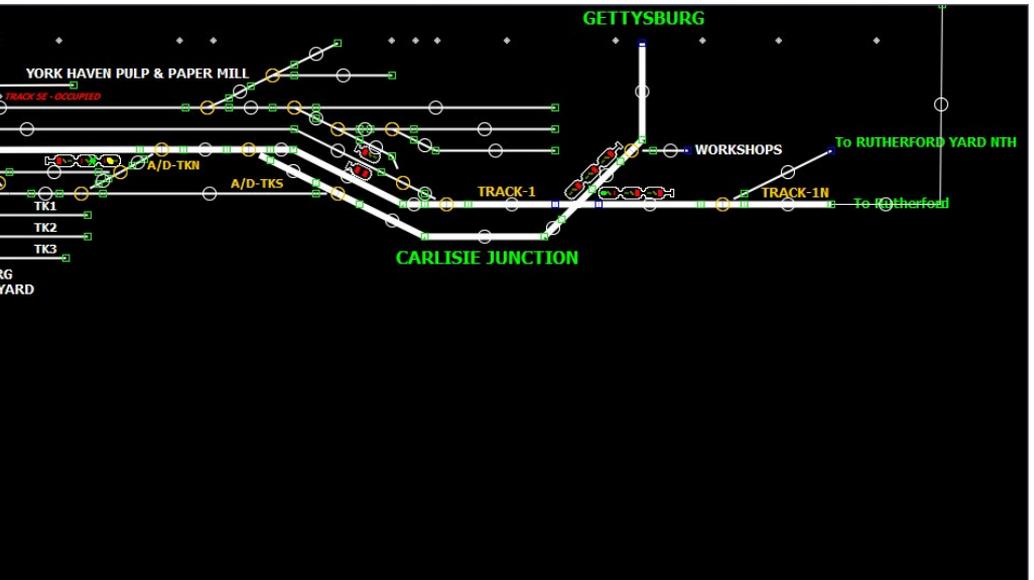
Signaling Mast Pairs: HERSYTK1N-CSB					
Source Mast: HERSYTK1N-CSB					
Destination Mast	User Name	Active	Enabled		
IF\$shsm:NS-2008:CLS-3-3...	SHIPBTK1E-SB	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Edit	Delete
IF\$shsm:NS-2008:CLS-3-3...	CARLISJCTTK3E-DWF	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Edit	Delete
IF\$shsm:NS-2008:CLS-3-3...	SHIPBTK2E-D/DWF	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Edit	Delete
IF\$shsm:NS-2008:CLS-3-lo...	CARLISJCTTK5E-DWF	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Edit	Delete

The signal mast in [33] is HERSYTK1N-CSB (Hershey, Track 1, north, cantilevered signal bridge). It has four routes that require signal logic to another mast and/or dwarf signal.

When we expand the information contained in the Signal Logic window in [34] this can be seen in the highlighted section.



33↓. The triple-head mast signal to the top left corner of the signal logic window requires four sets of signal logic in Panel Pro to operate correctly.



	A	B	C	D	E	F	G
1	SOURCE MAST	DESTINATION MAST	LOCONET	SPEED	LOCONET	THROWN/	
2			SENSOR		TURNOUT	CLOSED	
3	HERSYTK1N-CSB	CARLISJCTK3E-DWF	LS86	GLOBAL	LT10	CLOSED	
4			LS147	GLOBAL	LT11	CLOSED	
5			LS149	GLOBAL	LT14	CLOSED	
6			LS153	GLOBAL	LT21	THROWN	
7			LS159	GLOBAL	LT23	CLOSED	
8	HERSYTK1N-CSB	SHIPBTK1E-SB	LS93	GLOBAL	LT18	CLOSED	
9			LS146	GLOBAL	LT21	CLOSED	
10			LS150	GLOBAL	LT177	CLOSED	
11			LS152	GLOBAL	LT178	CLOSED	
12	CARLISJCTK1N-CSB	SHIPBTK2E-D/DWF	LS96	GLOBAL	LT18	THROWN	
13			LS145	GLOBAL	LT19	CLOSED	
14			LS151	GLOBAL	LT179	CLOSED	
15			LS152	GLOBAL			
16	HERSYTK1N-CSB	CARLISJCTK5E-DWF	YHAVENTK5-E	GLOBAL	LT9	CLOSED	
17			YHAVENTK5W-W	GLOBAL	LT10	CLOSED	
18			YHAVENTK5-INTLK	GLOBAL	LT13	CLOSED	
19					LT14	CLOSED	
20					LT15	CLOSED	
21	HERSHYTK2N-DWF	SHIPBTK1E-SB	LS93	GLOBAL	LT18	CLOSED	
22			LS145	GLOBAL	LT19	CLOSED	
23			LS151	GLOBAL	LT20	CLOSED	
24			LS160	GLOBAL	LT177	CLOSED	
25					LT178	THROWN	
26	HERSHYTK2N-DWF	CARLISJCTK3E-DWF	LS86	GLOBAL	LT10	CLOSED	
27			LS145	GLOBAL	LT11	THROWN	
28			LS151	GLOBAL	LT18	CLOSED	
29			LS159	GLOBAL	LT19	CLOSED	
30			LS160	GLOBAL	LT20	CLOSED	

34. This again shows the importance of good record-keeping. The four routes and signal logic contain: 1) Sixteen LocoNet Sensors; 2) Twelve LocoNet Turnouts. This has to be programmed into Panel Pro for each signal and each route on the layout.

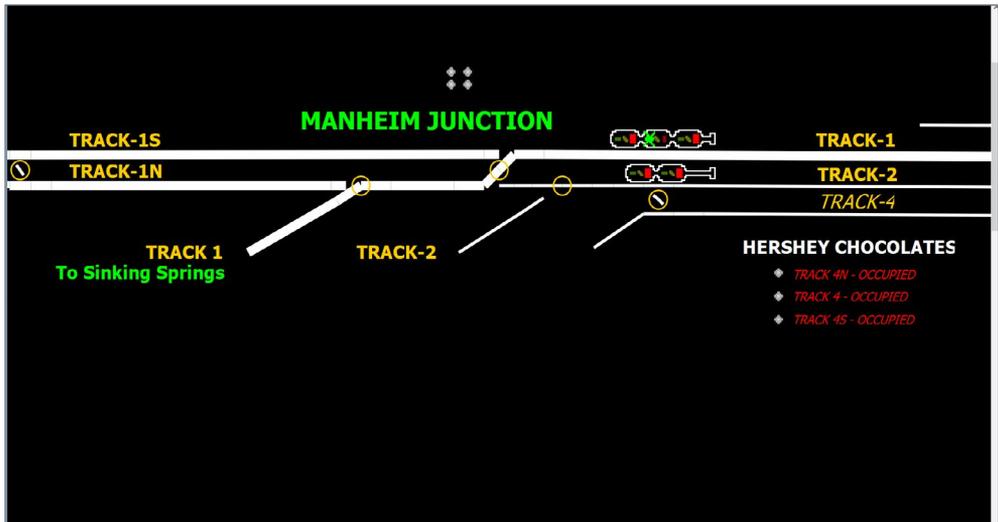
## Operating with Panel Pro

Now that we have all the signals and the signal logic/routes programmed, we can show how the Automatic Block System works and how the layout's train operation can be managed.

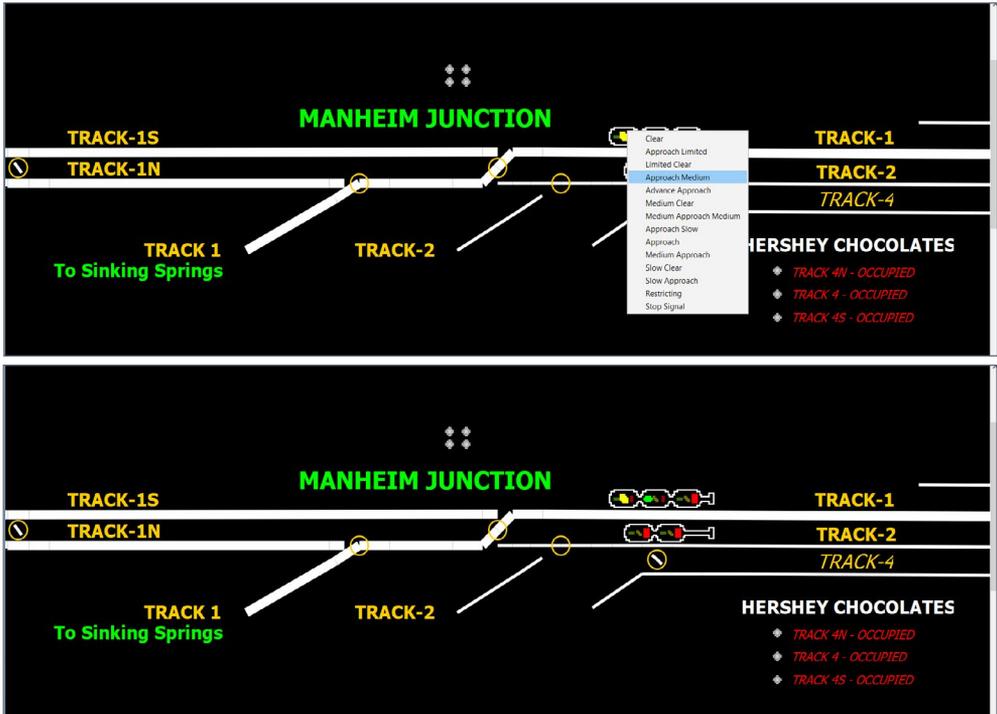
The beauty of ABS is that for most operating sessions it is automatic, but it can also be manually controlled by the dispatcher.

For most ops sessions, an operator can control the turnouts from the fascia, and the ABS will route the train properly. The detection and signal system through the programmed logic provides the correct aspect based on the speed setting for the “track ahead and the two blocks clear ahead” principle.

The dispatcher also has the ability to intervene and change the aspect to a different aspect.



35. The triple-head mast allowing Track 1 at Manheim Junction to proceed to Sinking Springs, is automatically set to a flashing green (middle head) aspect, which is “Limited Clear.”



36, 37. By right-clicking on the mast we can select a more restrictive speed through this junction. In this case an "Approach Medium" aspect has been selected over the normal "Limited Clear" aspect.

In the photos here [35-37], the dispatcher has routed an east-bound train (moving to the left) from Track 1 at Manheim Junction through the crossover heading toward Sinking Springs. Normally the ABS using the NS-2008 Signal Definitions in Panel Pro would set this mast to a "Limited Clear - Flashing Green"

In Panel Pro we also have the ability to right-click on the mast and change the aspect.

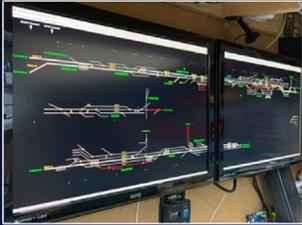
For example, our train might be hauling a long piece of rolling stock that requires a restrictive/slower speed ahead. We

can scroll down and select a more restrictive speed ahead. In this case we want the train to approach the next signal at “Medium Speed.”

If the train speed is higher than this, the crew must reduce speed upon seeing this mast/aspect.

JMRI and Panel Pro also have the ability to provide routes so the dispatcher can set up a path for a train to take. This will set the required turnouts to either thrown or closed and set the appropriate aspects on the signals too.

In this short video [38] we will see the RDG-LCL (Reading Local) departing Reading and heading onto Hershey. This is my actual layout panel operating with the detection and signals/signal logic functioning.



Watch on 

## JMRI Panel Pro tutorials

### 7: Signals in operation on the layout with Panel Pro



*Please see the Dec 2018 Model Railroad Hobbyist magazine to understand how this video fits into the full Panel Pro how-to*

38. Programmed signal system in operation with an actual scenario on my layout.

## Conclusion

I hope this series has been enjoyable, and has given those contemplating a signaling system a good idea what is needed to tackle a signal system on your layout.

As I emphasized in all three articles, this is just one method. There are many other signal system methods out there that work just as well.

You can see there is a lot to consider, gather, and install to get a working signal system. But when it is finally running, it adds a new dimension to your operating sessions and notches the layout realism up to a whole new level.

I have slowed my operating sessions, and locomotive speeds too. Even operating on my own has become more exciting and fun because of the added interest when running with operating signals.

Realistic signaling is a mammoth task – mine took me four years to complete. It's not one of the easier aspects of a layout build, but it adds so much more enjoyment when you see the aspects changing realistically as you run the layout.

Thank you for following along with this series. I always enjoy sharing my layout build and look forward to sharing some more in the future.

**Special thanks:** Let me give special thanks for the help and mentoring in getting this series together. Josef Brugger of the *MRH* Staff has been guiding me throughout with great advice on the format, proofreading, and tweaking of the content.

*So Joe Brugger, thank you for all of your help! ■*



39, 40. Running trains with realistic signaling in place takes the fun to a whole new level!

## JASON MILLER



Jason lives in Diamond Creek, Victoria in Australia. He has been building his HO scale layout for the past eight years and attributes his start to his wife Linden, who said that he needed to get a hobby! What a wonderful wife....

Jason is a professional fire-fighter and has been doing this for 15 years. When not at work he enjoys spending time with his family and working on the layout. Jason and Linden have two boys Lachlan, 11, and Toby, 7, who are both showing a keen interest in the hobby.

When not working on the layout and spending time with the family, Jason likes to work in the garden of the family home, and also enjoys having a coffee with the family at one of the local coffee shops.

The layout is HO scale and is based on the Reading Lines between the early to late '70s and the Conrail merger era. ■



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# WHAT'S NEAT

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**KEN PATTERSON** VIDEOS A MASSIVE COLORADO LAYOUT, **JOE HUDSON** CREATES MUSEUM-QUALITY FIGURES, WE SEE A SOUNDTRAXX STEAM SOUND INSTALLATION, AND MORE ...

**THIS MONTH, WE LOOK AT BRAD JOSEPH'S** beautiful HO scale Union Pacific layout. We watch Joe Hudson explain how he makes figures, starting with paper clips and finishing with a perfect museum quality figure. Steven M. Conroy takes us above dry Southern California to witness a BNSF business train in "Modeling Ideas from Above." Jeff Meyer shows a fantastic weathering job on a box car. We visit the magnificent masterpiece of David Trussell, the Colorado Model Railroad Museum with an account of his efforts to build his life's dream in his home town of Greeley, CO. George Bogatiuk from SoundTraxx shows us how to install sound in a steam locomotive. All that, and more, in this month's What's Neat video.

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## The Colorado Model Railroad Museum



1-4. David G. Trussell, founder of the Colorado Model Railroad Museum in Greeley, has a passion for trains. [1, top left] A model railroader since his childhood, he built many home layouts before building on his experience to form the Greeley and Tahoe modular layout. [2, bottom left] I remember this layout well. When I brought the Midwest Valley Modelers layout to the Kansas City NMRA National Convention in 1998, Dave's group set up its modular layout just two layouts away. With realistic scenery, brown skirting, and a model ship and port, I will never forget it.

Dave started working on his life's masterpiece, the Greeley Freight Station Museum layout, by planning a very detailed



track design. [3, top right] & [4, bottom right] The museum later changed its name to the Colorado Model Railroad Museum. This layout's principal railroad is called the Oregon, California & Eastern Railway. It took more than 10 years to plan and construct, including the 10,000-square foot building to house it. The building is filled with a life's collection of over 1100 railroad artifacts and memorabilia. The 5,500 square foot double deck layout measures 60 by 98 feet.



5. In one corner of the building is Colorado & Southern Caboose #10583, fully restored to its original condition. This caboose will turn 100 years old in July 2019, with a birthday party sure to draw a crowd.

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6. The layout is an engineering marvel with over 21 scale miles of track and a mainline run of more than 1,300 feet. It is a double-deck point to point railroad designed for operation with a fully functional CTC panel and a dispatcher directing train movements on the layout. The layout has an array of scale trestles and bridges, all hand-built with thousands of pieces of scale lumber.



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7. Minimum radius on the mainline is 48 inches. The route brings the trains through the 2.5 percent grades smoothly between levels, with a track height between 40 and 98 inches from the floor.

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8. The lumber industry is one of the main industries represented on the layout, from the forest to the lumber mills, to the ocean ports. The lumber industry, from tree to finished product, is modeled in its entirety. During a normal session, operators run 14 freight trains with eight or so locals in both directions on the single track mainline, Multiple passing sidings easily allow the 80-car freight trains to pass each other on their way to their destinations.



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9. An elevated viewing platform runs the entire length of the building and the birds' eye view of the layout is quite interesting. There is a 95-foot-long staging yard under the full-length viewing platform. This area is a beehive of activity as train crews depart and arrive with their long freight drags.



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10. (Left top) The port is complete with petroleum transfer facilities, along with lumber and general freight. The ships are simply magnificent. They are fully functional with full lighting and radio-controlled propulsion when floating in real water. They are displayed on rolling platforms next to the dock. The scale model of the SS Edmund Fitzgerald is a work of art, complete with a full crew, hatches, cranes, and highly detailed superstructure. An equally impressive ore dock runs the length of the ore freighter. I spent two days at the layout and never really saw all of it, or even grabbed a throttle to try my hand. What I did get was a great interview with Michelle Kempema, the executive director of the museum. Thank you, Ed Dressel and Killian Ruble, for great camera work.

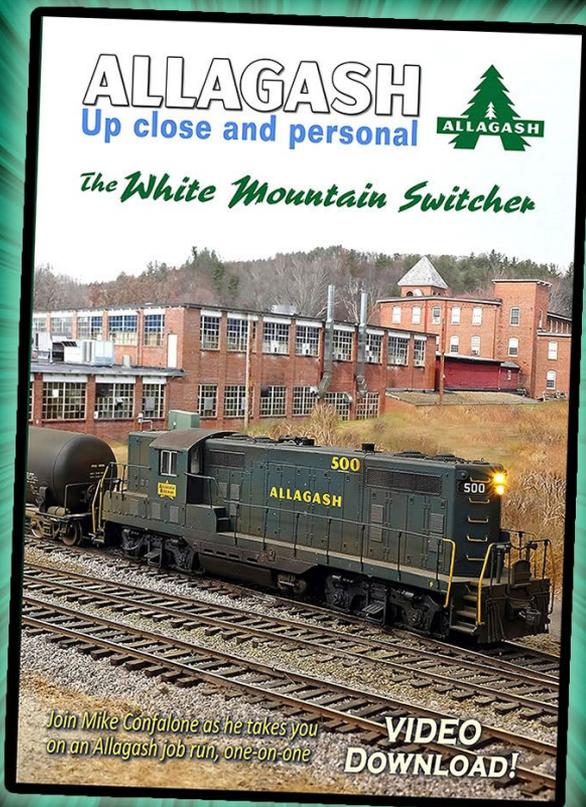
11. (Left bottom) Michelle Kempema, executive director of the Colorado Model Railroad Museum, describes how the museum works with the community to share the joy of model railroading and teach youth about the transportation of goods by rail. Other programs include summer camps, after-school activities, Boy's and Girl's Clubs, and special hands-on building clinics for the youths to teach the history of model railroading and the basics of model building and scenery. Hundreds of volunteers include clubs visiting from around the country to operate the layout and give their time to share the hobby with museum visitors. Michelle describes it as a national base of volunteers that helps share and promote the hobby.



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12. The layout is covered with over 28,000 hand-built trees. The layout is cleaned every Monday. A three-page checklist itemizes every step of cleaning track, buildings, trees, and all the rock surfaces. The mountains are cast with rock molds and some extend from the floor to over 12 feet high.



13. The museum is in Greeley CO 80631 at 680 10th St. Hours of operation are: Winter hours, September 2018-May 2019, Friday and Saturday 10am-4pm, Sundays 1-4pm. Summer hours: June 2019-August 2019, Wednesday through Saturday 10am-4pm, and Sundays 1-4pm. Their website is [www.cmrn.org](http://www.cmrn.org).

## Brad Joseph's UP layout

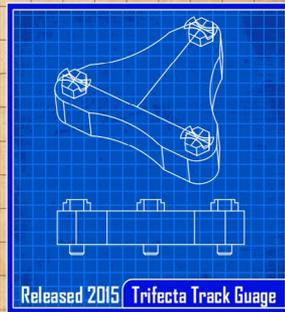
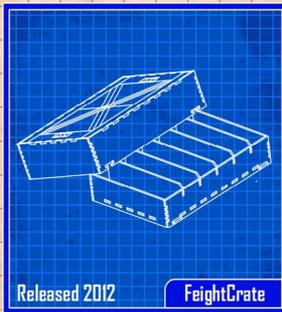
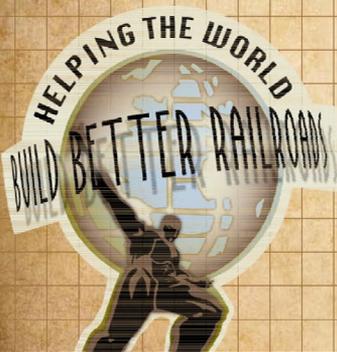
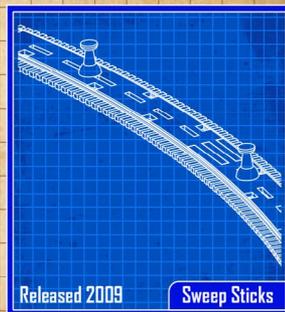
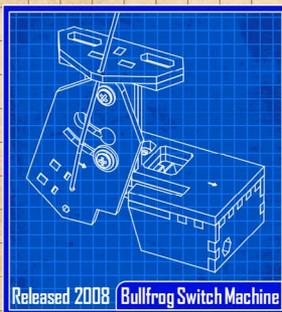
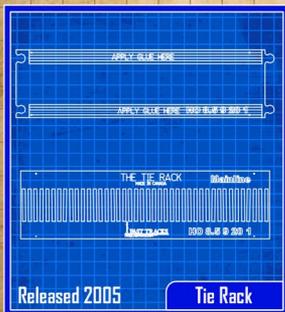
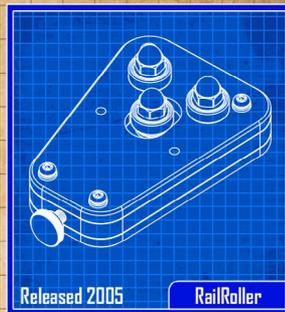
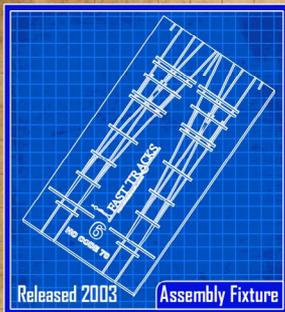


14-15. Brad Joseph is a true artist with scenery on his beautiful HO scale Union Pacific railroad. The 1958-era layout is built in a walk-around design with a linear track flow. The double deck layout uses train order and time table dispatching with a fast clock. Brad enjoys the railfanning aspect of modeling too, and is modeling specific areas down to the rock and bridge placement as per photographs.

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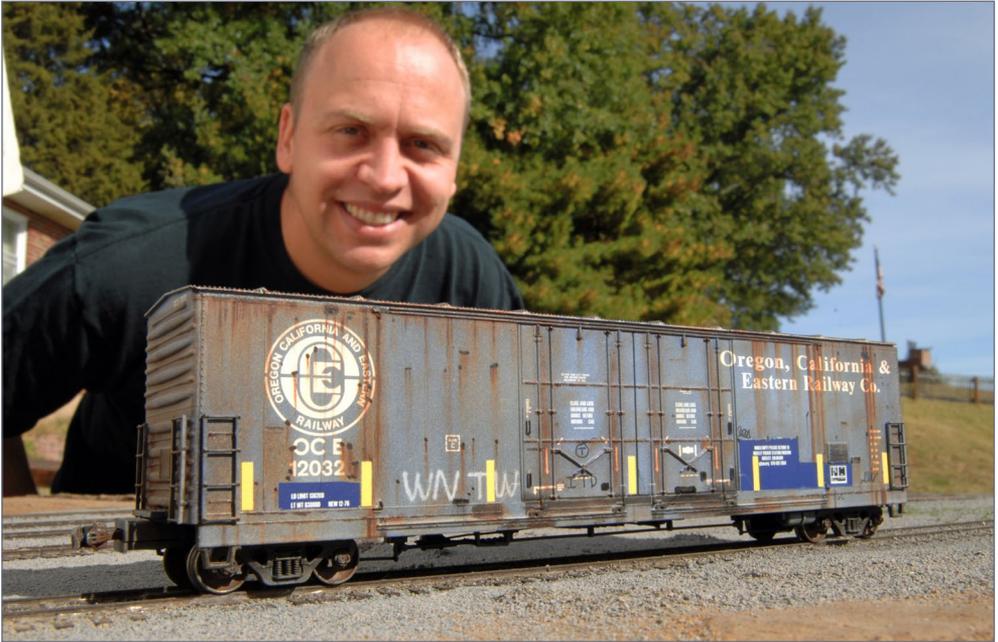
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16, 17. Brad creates his backdrops for each area by projecting slides on to the Masonite backdrops and tracing the scenery to match the foreground perfectly. His Cheyenne roundhouse was built from photos and measurements he took himself. He said it was the hardest scratchbuilding project he has ever tackled, as the building was so large and had so many varying wall patterns. He modeled a cool winter scene depicting the Wasatch Mountains and Devil's Slide in Utah with the paired bridges and red rock high bluffs in the area.

He supports model railroading through National Model Railroad Association and national train shows, along with a train show/display every Christmas at his place of work. A prototype passenger car is built into the building, with an exact replica of the Dearborn Station platform in Chicago as a major draw.

## Jeff Meyer weathers a box car



18. This month, Jeff Meyer shares how he weathered this freight car, an Evans plug door box of the Oregon, California and Eastern Railway. The car was furnished by the Colorado Model Railroad Museum, and is from the railroad modeled on the layout. Jeff weathered the car in about 10 hours. He masked the reporting marks so they would look patch-painted and updated them. He started by airbrushing a light mist of white to fade the blue paint. He followed this up with white oil paints to further enhance the fade. He then painted the roof with acrylics, using Burnt Umber to represent old rust. Jeff finished the sides of the car with oil paint spots pulled down with a dry brush to create the appearance of leaching rust washed down by rain and gravity. A little airbrushed dust and a few decals, including yellow reflective stripes, and the car was finished.



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## Joe Hudson scratchbuilds figures



19-23. (Top, bottom left, and top right) I met Joe Hudson at Mark Twain Hobby during a visit to the store. I learned of his talent of figure scratchbuilding and immediately pulled out my video camera and asked him to describe the process. He uses paper clips as the basic form and posture, then covers the metal wires with clay or putty that hardens when dry. He carves and shapes the figure's details with simple toothpicks. After painting with acrylics, he has museum quality figures, as seen in these photos. The store displays an entire glass case of characters, many of which have been featured in the model press in how-to articles over the years.



## George Bogatiuk installs a Tsunami2 steam decoder

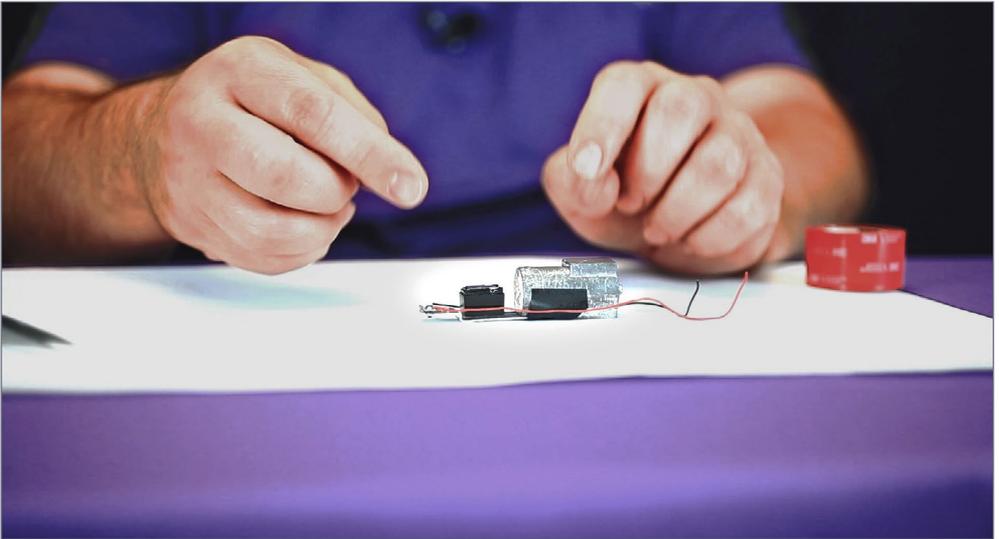


24. This month, George Bogatiuk of SoundTraxx shows us step by step how to install a Tsunami2 steam decoder and current keeper in a Broadway Limited M1a steam locomotive.

George starts by removing the shell from the tender to access the insides. He then pulls the boiler from the locomotive's drive train, unplugging the wiring harness inside the locomotive.



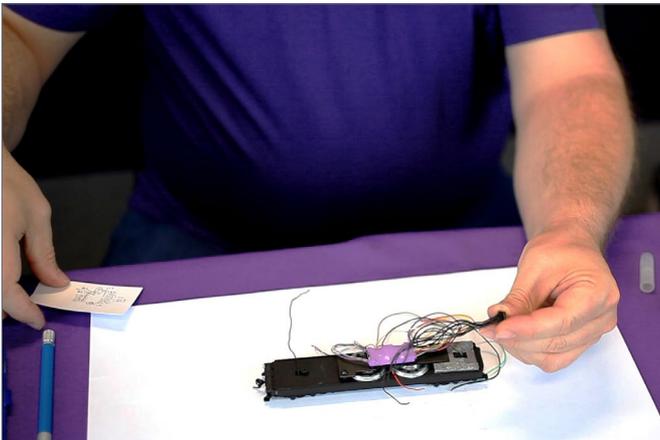
25. He removes the weight and smoke unit, which will not be reinstalled.



26. In the smoke unit space, George installs a small speaker in a plastic enclosure to add sound to the boiler. He reinstalls the weight and the smokebox front, with the light wires pulled through the boiler. To connect the wires from the locomotive to the tender, he uses the factory-installed plugs.



27. He makes a map of the wires, power positive and negative, the light wire feeds and speaker feeds, by drawing a diagram of the existing wires on a piece of paper. Following this chart, George solders the wires through the plug. He then reattaches the boiler to the power assembly.



28. In the tender, he removes the factory circuit boards and attaches the Tsunami2 decoder and two speakers to the back with double-sided tape. He wires the two speakers in the tender in series

to work without overloading the decoder's amplifier. The next step is to simply wire the decoder as per the colored wires and the decoder's instructions.

He wires the decoder directly to the tender's plug, referring to his paper diagram and the decoder's color-coding instructions. The current keeper plugs into the decoder's two-prong jack.



29. This current keeper will power the locomotive for up to 20 seconds on dead track. George installs the tender shell and test-ran the locomotive. The decoder installation takes 30 minutes in this month's video, with every step shown with three camera angles.



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30. Time for a runby.



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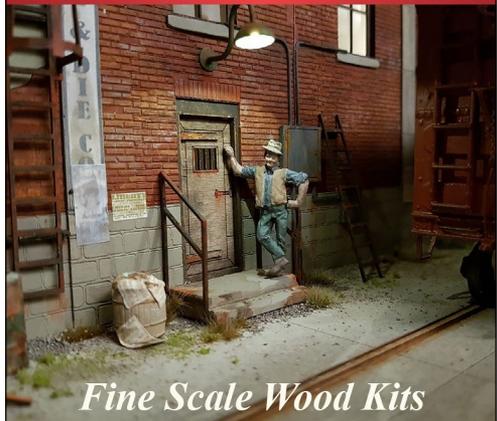
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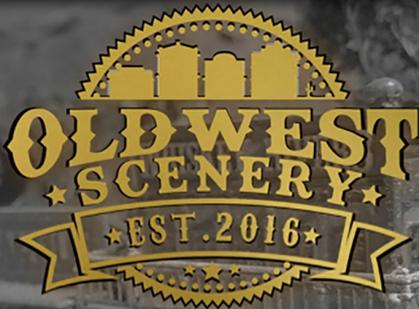
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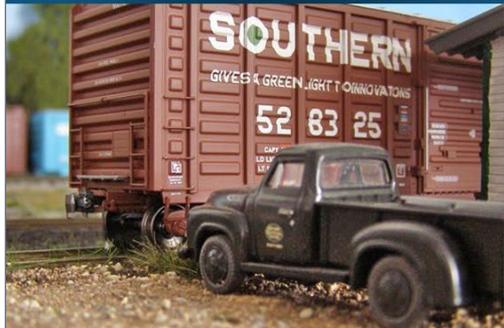
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# SPSF C39-8E:

Custom detail and paint project



**ERIC MILLER** *builds a modern diesel for a proto-freelance railroad ...*



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**FOR THIS PROJECT, I STARTED WITH A NORFOLK** Southern Atlas C40-8 [1]. The C39-8E is essentially a C40-8 with an older fuel tank. The Atlas model runs well and is easy to add DCC and sound to. The NS version works well for me because it comes with the black chassis. However, the NS version has the newer phase C40-8 shell, so I couldn't use the entire shell.

I had a number of Atlas Dash 8 parts, which would work for the correct style of long hood, including part of an older-phase C40-8 shell.

As with every locomotive project, I came up with a strategic plan on the order of the steps. I like to add the sound decoder first so I can test the functions and make sure it works. With this project, I would need to mill some metal off the chassis to fit the older fuel tank and needed to do that before working on the sound installation.

In order to mill the chassis, I need to kitbash the fuel tank so I know how much metal to cut away. I planned to modify one truck assembly. I need to make sure I do that before installing the sound, since I need the electrical pickup from the trucks to power the decoder. See how these jobs stack up?

Therefore, the plan is to start with the fuel tank and trucks, then work on the chassis, and finish up the sound installation. After that, detail and paint the shell, apply decals, weather the locomotive, then finish the assembly.



1. The Atlas C40-8 in Norfolk Southern purchased for the project. This was like-new with minimal running time, and the detail parts were still wrapped in the box.

I used a SoundTraxx Tsunami2 PNP GE Diesel sound decoder (885014), a Streamlined Backshop Services sugar cube speaker, and a SoundTraxx CurrentKeeper. I already had Tsunami2 units in a GP35 and an SW1500, so I had experience with this type of decoder.

I like the improved sound, especially the air horn, and momentum is something I use in my operating sessions. CurrentKeepers in all of my powered locomotives help keep the locomotive running and sound on.

The Atlas C40-8 has a space for a round speaker, but I like to position a square speaker in the rear of the long hood, facing down for the sound to go through the truck opening. This way, the shell acts as a box for the speaker and makes the sound better. The factory speaker area gets in the way of adding the longer DCC/sound circuit board, so I cut it back a little. I have used a few of the sugar

cube speakers [2] made by Streamlined Backshop Services, and decided to use one with this project.

I ordered some detail parts before I started working on the locomotive. The Atlas shell comes with a lot of detail, so I didn't need to add generic things like grab irons and MU hoses. I will be adding a Details West air conditioner (#158) and five-chime Leslie air horn (#327).



2. The sound equipment I purchased for the project: Tsunami2 decoder, CurrentKeeper, and a sugar cube speaker. I always like to test this as soon as possible to make sure everything works well while it is still under warranty.



3. The model completely disassembled and ready to start work.

## Disassembly

Now that I have the materials for the project, and a working plan, it's time to tackle construction. Take apart the entire locomotive, including taking the shell off the frame and removing all the details like the window glazing, number boards, and MU hoses.

Then separate the metal chassis from the motor, driveshafts, worm gear, and factory circuit board [3]. This way, work can be done on milling the frame to accept the older Dash 7 style fuel tank. Take off the trucks and disassemble them completely, to paint the sides of the wheelsets.

For the shell, strip the paint off the sill, long hood, cab, and nose using 91% isopropyl alcohol.

After soaking the shell parts in a tub filled with 91% isopropyl alcohol for a few hours, strip off the paint using a very soft toothbrush, and rinse everything with warm water. A trick to speed up this process is to place the plastic tub with the alcohol in a sink filled with hot water. The higher temperature helps remove the paint faster.

## Fuel tank

To finish the chassis so I can test out the DCC and sound, I need to paint and weather the truck side frames and finish the fuel



4. Comparison of the C40-8 and C30-7 fuel tanks next to the underside of the chassis. The C30-7 fuel tank will need to be “stretched” to the same length of the C40-8 tank.



5. The C30-7 fuel tank has been cut in half and a section of the spare C30-7 tank has been spliced in the middle. After this, I added some modeling putty and filed it smooth for a straighter appearance.

tank. Two C30-7 fuel tanks on hand will be kitbashed to make a longer fuel tank for the C39-8E frame [4].

Cut one tank in half, then measure the rough amount of extra tank length needed to fill in this space and cut that out of the middle of the second tank [5]. I just eyeballed everything and didn't use exact measurements. A simple X-Acto precision razor saw will cut the tank. File everything to fit smoothly. I used Micro-Mark Same Stuff plastic welder to join the parts. After gluing the pieces together, fill the cracks with modeling putty and file it smooth after that dries.

With the tank kitbash completed, use it as a guide for milling the chassis [6]. The fuel tank fits around a metal bulge. Since the older-style fuel tank has a space for the air reservoirs on the end, use a Dremel motor tool to cut off about a half inch of metal on each end of this metal bulge.

After milling the chassis, clean up the metal edges with a file, and touch up as needed with black paint. Wait until later to add the tank, after it is painted and weathered.

## Trucks

While researching late-phase C39-8s and early-phase C40-8s, I learned that trade-in trucks from older General Electric



6. I had to mill down the ends of the metal block on the bottom of the chassis so the extended C30-7 fuel tank would fit. This was made easy work thanks to my Dremel motor tool. This also shows the fuel tank before painting, and the trucks after painting.



7. Compare the older Adirondack truck side frame and the newer GSC truck side frame. The Adirondack side frame is on the left and the GSC side frame is on the right.



8. Test-fitting the older Adirondack side frame on one of the C40-8 truck assemblies. Again, the older Adirondack truck is on the left, and the newer GSC truck is on the right.

“U-Boats” were sometimes used. For example, Union Pacific traded-in some U30Cs when they ordered their C40-8s, and the trucks were reused after being rebuilt to more modern standards. The U30Cs had older Adirondack trucks. It was fairly common to see the C40-8s with mismatched trucks. I wanted to replicate this look with my project – what made this decision easy was a spare set of older Atlas Adirondack sideframes in my spare parts bin, and they fit the C40-8 trucks.

Rebuilt Adirondack trucks have air brake cylinders added on the ends, and a single shock strut in the center, so they look similar to the GSC truck. The main spotting difference is the hole in the

side frame between the axles. The GSC has a center hole, while the Adirondack's are closer to the outside axles. [7] To replicate the rebuilt truck, I removed the outer shock struts, added one in the center, and added the air brake cylinders on the ends. [8] I got these parts from the other GSC truck side frames that came with the C40-8. [9]

What makes the mismatched truck idea even more appealing is that Southern Pacific, at the time of the merger, had a lot of U33Cs on its roster and many had Adirondack trucks. I have read that the SPSF may have added these to the SF30C rebuild program, and I think it's plausible that the rejects may have been traded-in for the C39-8Es with the trucks reused, similar to what the UP did.

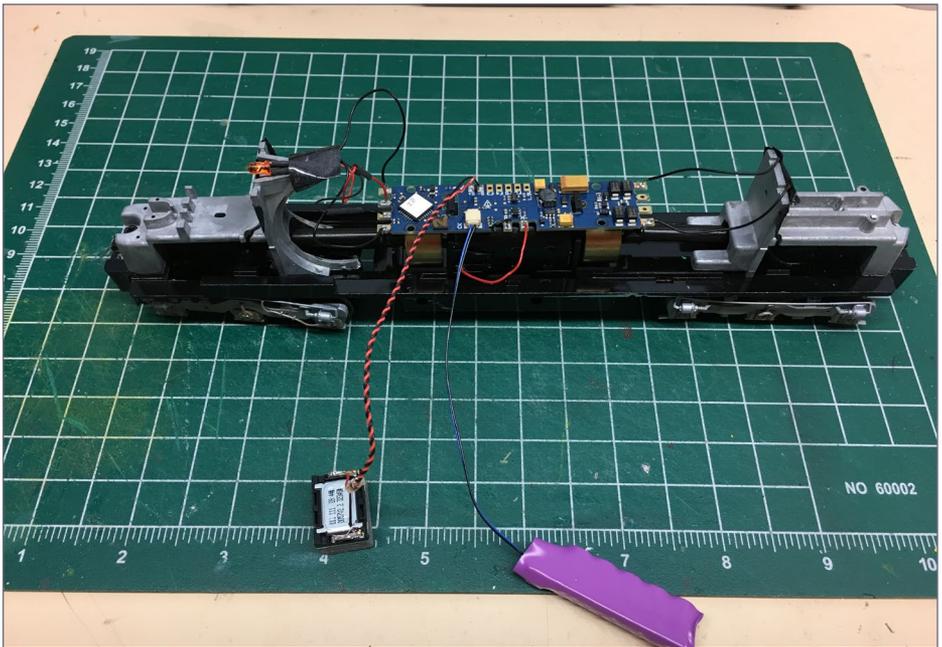
After working on the trucks, paint them ATSF Silver, and weather them lightly with a dirt-brown color. Give them a coat of Dullcote so they are ready to install on the locomotive.



9. The Adirondack side frames after “rebuilding” (on the left), next to the newer GSC side frames. I used parts from the other pair of GSC side frames to update the Adirondack side frames. Now they look very similar, except for the placement of the holes.

## Work on the chassis

With that work out of the way, start putting the chassis back together. Put the trucks in first, then the drive with the drive-shafts. After this I add the new sound decoder, which snaps in above the drive. Then connect everything to the PNP board – the motor wires, truck wires, lights (I keep only the front headlight for running a pair of locomotives short-hood out), speaker, and plug-in the CurrentKeeper. With all of that connected, test the locomotive for functionality and then program it. I use JMRI Decoder Pro. First I program the locomotive number on the main track with my NCE system, then program all the details on JMRI. [10]



10. When everything is installed on the chassis, the locomotive is ready to test and program.

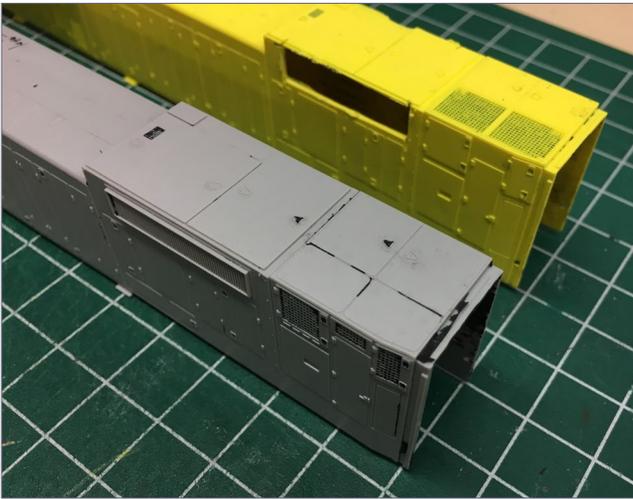
The speaker will need to be placed up in the shell after the body is painted, decaled, and weathered. I will find a more permanent spot for the CurrentKeeper, so we will work on these later.

## Shell preparation

As I mentioned, the C39-8E uses an earlier phase C40-8 hood. I have one of these older hoods but unfortunately, I cut out one of the grilles for another project. So I cut the shells and combined the two. The difference in phases is on the front of the long hood just behind the cab. The early phase has grilles on top of the hood, while the later phase has the grilles on the side. [11, 12]

On the older-phase hood section, I made cuts on each shell with a little extra room left, again using the X-Acto saw. I chose to cut along a band on the hood that wraps around the entire body where I would glue the two pieces together – piecing the parts together at this seam will make the cut unnoticeable. Then I filed

the plastic off until I got close to that line, and started fitting the pieces together, using the sill as a guide for how long it should be.



11. Comparison of the different C40-8 phases – the yellow shell is older phase; the gray shell is the newer phase.

I glued it using Plastic Weld and added styrene strips inside to keep it strong [13].



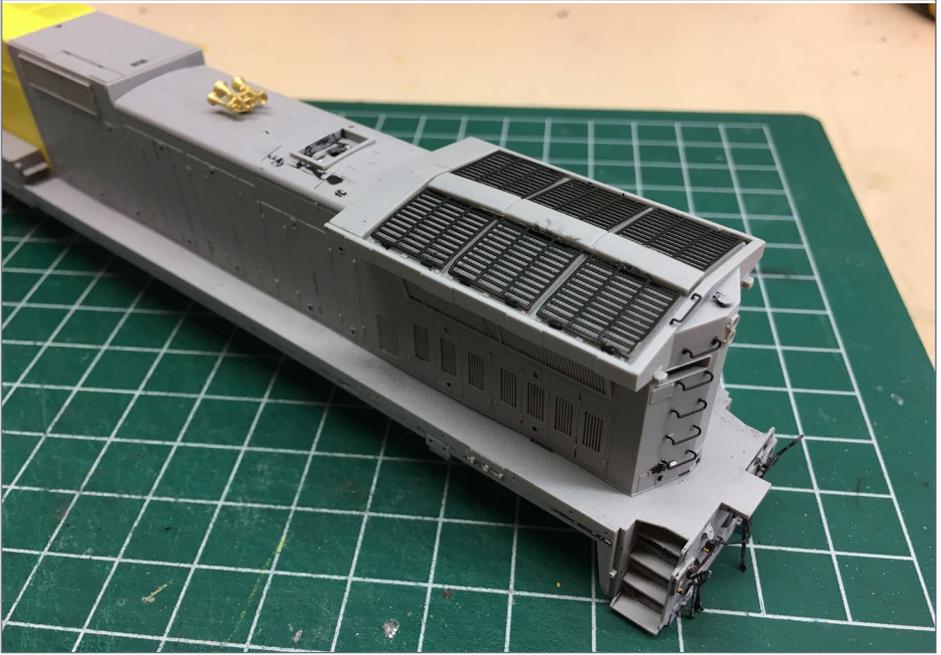
12. I could have used the yellow shell if I hadn't cut out the grilles for another project. Instead, I will cut off the very front of the older-phase shell and connect it to the rest of the newer-phase shell.



13. Test-fit the parts on the sill to make sure they have been filed down appropriately. The air conditioner is added to the top of the cab and the new five-chime brass air horn is attached to the center of the long hood. I will wait to add the exhaust stack so I don't have to repaint it silver.



14, 15. Different angles showing the details before painting the shell.



16. I added the new radiator since I had the extra part on hand, and it is hard to strip the paint beneath the radiator grilles without taking everything apart.

Next I added the detail parts (air horn and air conditioner). Wait to apply details like the MU hoses and plow until after painting. At this point, I decided to remove the radiator section and replace it with a new, undecorated radiator section I had on hand, since there is a lot of loose paint under the radiators after stripping the paint off the factory model. With these last steps, the shell is ready to paint. [14, 15]

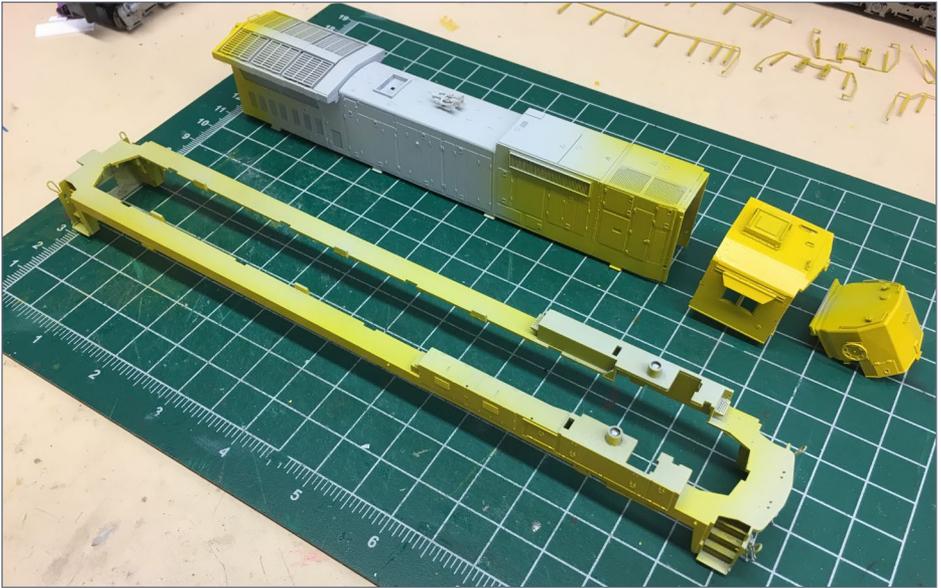
## Paint, decals, weathering, and assembly

I use Badger ModelFlex acrylic paints when I can. They make the colors I need for the Kodachrome paint scheme, including ATSF

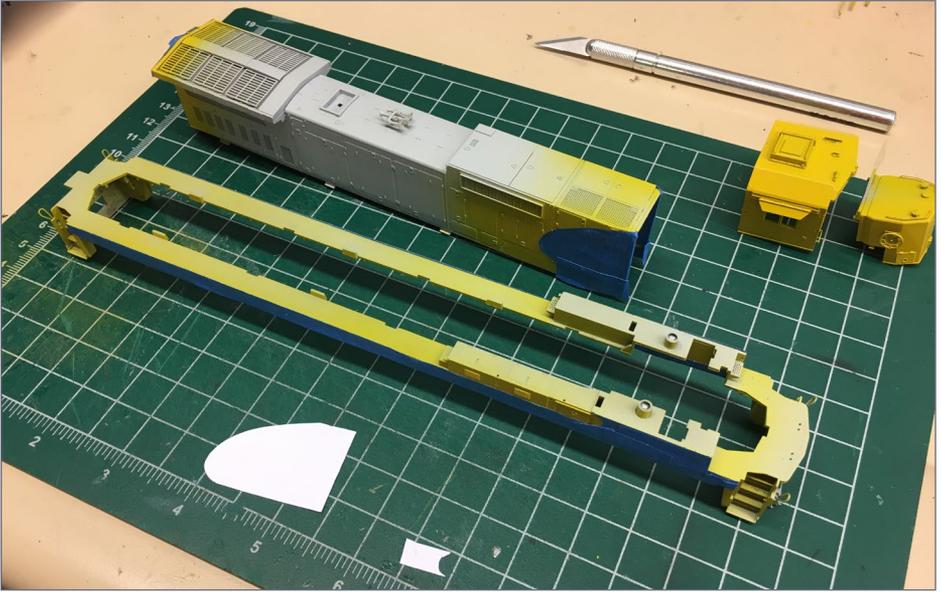
Yellow and SP Scarlet, and a basic black, like Engine Black. I start with SP Letter Gray as a primer with light colors like yellow and red.

Paint the sill, long hood, cab, nose, and handrails SP Letter Gray, then clean the airbrush and switch to ATSF Yellow for the nose and cab, and front and rear of the long hood, side of the sill, and handrails. Paint the handrails while the airbrush is filled with yellow [17]. Then I tape off the yellow colors, including the war-bonnet curve.

To mask the curve, I use paper templates cut from copies of a Microscale decal set (87-476). I use the templates to draw the



**17. SP Lettering Gray is the primer, followed by ATSF Yellow. I paint the entire nose and cab, then aim for the parts on the long hood and sill that will be yellow. Paint the handrails at this time.**



18. Make the warbonnet curve masks by cutting out the curves on blue painter's tape, using paper templates. After applying the first masks, spray the exposed yellow areas with SP Lettering Gray so the red coat goes on evenly. Then apply a coat of SP Scarlet.

curve on blue painter's tape and cut the tape with a sharp X-Acto knife. Carefully place the curves on the shell and tape the other parts of the long hood, like the rear, and side sill.

Apply another coat of SP Letter Gray over the yellow where the red will go. If this isn't done, the red will look lighter where the yellow overspray was. Trust me, from experience. Then paint the SP Scarlet on the long hood, let it set up, tape off the red, and paint the top of the long hood and the rest of the sill black. [18] Once the black is done, remove all the tape and see how everything looks. I usually do a small amount of touch-up painting

with a brush, including the yellow step edges and any grab irons, such as the rear grabs that are red in this paint scheme. I find it is important to paint the entire Kodachrome scheme in one day so the tape isn't left on the model too long.

This is a good time to add some details that don't need to be painted, like MU hoses and the plow, so they are on for weathering. [19]

With the painting done, it's time for decals. Assemble the shell parts and apply a clear gloss coat to the entire shell. After it dries, cut out the decals and apply them. I used Microscale 87-496 for the SPSF decals, and 87-925 for the diesel data.



19. After masking for and painting the black area, the tape comes off to reveal the Kodachrome scheme. There is always some touch-up painting by hand, including some details. The glossy coat works best for applying decals.



20. A more realistic shell after some weathering. A dull clear coat tones down the model, and pastels add grime to specific areas.

I used my C40-8W as an example of where to locate all the decals. For the diesel data, find an example of a similar locomotive, like a real Santa Fe C40-8W, to figure out which labels to apply and where to put them. I use Walthers Solvaset to adhere the decals and help get the larger hood decals to settle into the cracks and crevices.

After the decals dry, add the handrails so they are on for weathering. Then apply another coat of clear gloss to the shell, and it is time to start weathering. I start with some Rustoleum Frosted Glass to dull the shell and slightly fade it.

Since this will be one of my oldest six-axles, I want it to look used and a little worn. I use pastels to weather my locomotives, and

fade the black areas with a little cool gray. Then add some dirt brown to the bottom part of the shell and finish it off with black on the grilles and top of the locomotive.

Build the weathering up slowly and check between layers. After that, apply a final matte coat, like Testors Dullcote. [20]

With weathering done, the locomotive is ready for final assembly. Put the window glazing and number boards in and glue the fuel tank to the bottom of the chassis. I use a small amount of super glue like Loctite Gel to affix the fuel tank to the chassis.

At this time, I glue the speaker into the shell with silicone adhesive so the speaker is very easy to take out if needed. Let the adhesive dry overnight before continuing the rest of the

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21. The locomotive poses at the Bellevue Station after final assembly. Of course, the local railfan heard about the locomotive running on the Meadow Sub and came to check it out.

assembly. Use a small piece of tape to place the CurrentKeeper above the decoder board so it stays in place and still leaves room for the shell.

Test-fit the shell on the locomotive and if that works, finish it by adding coupler boxes. Now the C39-8E is ready for service on the Meadow Sub.

## Operations

The C39-8E is the fourth six-axle in my locomotive fleet. These locomotives fill two roles for the Meadow Sub. They operate the manifest trains between South Omaha (where my layout is located) and Kansas City, which is a major hub for the SPSF

and the SPSF uses trackage rights on the Union Pacific to reach the Meadow Sub. They also power the grain shuttles from South Omaha to the grain elevators in Meadow at the end of the branch line.

A pair of SPSF six-axle locomotives pull the manifest from Kansas City to South Omaha, and while the locomotives lay over in South Omaha before returning to KC, they are used to run empty grain hoppers to Meadow and bring loaded hoppers back.

On my layout, only the run between South Omaha and Meadow is visible, and also is used in operating sessions – the manifest is a behind-the-scenes or “beyond-the-layout” move. However, these locomotives come from Kansas City, and anything from the



22. Crossing Washington Street next to the South Omaha Terminal bridge.



23. The C39-8 laying over at the Chuck Shell Diesel Shops in South Omaha, waiting to lead the unit grain shuttle or take the manifest train to Kansas City.

diesel yard there could be used. I need a little variety in the six-axle fleet, so I have four locomotives to rotate. My other jobs get the same locomotives almost all the time. Of course, sometimes I think I should add even more to the fleet! The locomotives stage at the diesel shops on the layout, showing that they are between runs to and from Kansas City.

I use a combination of powered and dummy locomotives, and the six-axles are no exception. I have two powered units, a C44-9W and the C39-8E plus two dummy units, a C40-8W and a KCS SD60. The two powered units have DCC and sound.

The SD60 also has sound, so when it is consisted with the C44-9W or C39-8E, you can hear different prime movers. I

currently don't have sound in the C40-8W, since it would be the same as the other GEs, but I might add it later.

With this arrangement, I mix or match the powered and dummy units, and don't have to worry about speed-matching, which is a big reason I like using dummies. I don't need the extra power for the relatively short trains on my light grades.

In this arrangement, the C39-8E will be used with either the C40-8W or SD60 to power the unit grain shuttles. It looks nice with the slightly newer wide cab as well as the SD60, which is from the same era of locomotive production. I am going to try letting crews pick their own six-axle power, since the units are very easy to MU and set up for operations, so that will be fun for future operating sessions.

The C39-8E adds an interesting locomotive to my fleet, helps fill a gap in the chronology, has awesome sound, and is a great runner for my grain trains. I look forward to using it in many operating sessions to come!



24. Side view at the Bellevue Statio.



25. The C39-8 at the Meadow Siding.

## ERIC MILLER



Eric got into model railroading with a Bachmann HO scale Santa Fe train set just before high school. He started working on a prototype-freelanced concept after that and never looked back.

Following a brief hiatus from modeling during college, Eric started developing the Meadow Sub about 10 years ago with construction starting in 2010 thanks to help from the local Tuesday Night Conspiracy modelers.

He has since changed his layout to a small switching layout, and currently models the UP-operated Stockyard Industrial Lead, which is based in the same South Omaha area as the SPSF Meadow Sub was. His new website is [www.stockyardlead.com](http://www.stockyardlead.com).

Eric lives in the Denver, CO area with his wife Heather and two daughters, Lindsay (6) and Courtney (3). He works at an engineering consulting firm and does rail operations planning and simulation for passenger rail clients. ■

## BACKGROUND AND PROTOTYPE INFORMATION



27. CSXT GE C39-8 7484, former CR 6009, built in 1986. *Photo from Wikipedia*

When deciding what motive power to run on my proto-freelanced late '90s SPSF Railway, I adhere to what the ATSF and SP really purchased. This is easy to do because both railroads bought similar locomotives, like GP60s, B40-8s, and C44-9Ws. It makes my fictional railroad more believable because I'm not out on a limb saying the railroad really bought some random locomotive(s).

However, this project is a little different. I wanted to add a fourth six-axle locomotive to my fleet, and I wanted something that wasn't yet in my roster for the Meadow Subdivision.

I also wanted a locomotive that was older than the B40-8W I have, but newer than an SF30C or C30-7, which had essentially

left the BNSF roster in my era. The problem is that there is a gap in Santa Fe and the Southern Pacific six-axle orders in the 1980s – so there is no prototype to follow in this case.

Both railroads had large rebuild programs at the time. Both railroads held-off purchasing new motive power while the merger proceedings were going on – Santa Fe's last order of new power was in April 1985 with GP50s. Their next new power was not until the GP60s in May 1988.

Therefore, I decided the SPSF would have purchased some new power before this time, if the merger was approved in mid-1986. The combined companies would have a greater ability to purchase new power and modern power would draw attention to the new company.

Another goal would be replacing some of the older power on the combined roster, like some of the U33/36Cs and SD45s – locomotives that might be beyond a rebuild program.

Using my rule of limiting my roster to what the ATSF and SP really had, I decided to go with an earlier model than the C40-8Ws of the ATSF, as well as something similar to the B39-8Es of the SP. So I came up with the C39-8/C40-8. Then I had to decide on the specific phase.

I thought about what the SPSF would have done in real life, so I created a rare bit of alternate history for this. Say the merger is approved by the ICC on July 24, 1986, instead of being denied. That would make a merger in January 1987 possible, given the coordination efforts that were underway since 1983.

I would think that the chief mechanical officer would undertake a survey of motive power in August 1986 and come up with a few

## BACKGROUND AND PROTOTYPE INFO *CONT...*

options for management to approve. His proposal would include various options of rebuilding power, both in-house at San Bernardino and at contracting places like Morrison-Knudsen, and buying new power from GE and EMD.

Orders for new power could be finalized by September or October 1986 (preceded by a letter of intent to get production line space) for delivery by the second quarter of 1987. That fit with the desire to have new power for the newly merged company shortly after the merger took place.

That timeline brought me to March 1987 when the NS C39-8Es were built, so I would follow that as the phase to use. Union Pacific got the first C40-8 units later in 1987 and NS/Conrail bought the last C39-8 Phase III models (the humpback style) in late 1986, so those don't fit my timeline.

Next, I wanted to figure out why they got the C39-8E as opposed to other locomotives available at the time. I created a backstory that would assist my goal to create a full SPSF late '90s diesel roster, to satisfy my curiosity on the subject.

Every proto-freelance modeler should have a complete roster of their fictional locomotive fleet. I decided that the brand-new SPSF would order four types of new power: C39-8Es and B39-8Es from GE, and SD60s and GP60s from EMD.

The C39-8Es would be used on daily double-stack intermodal service between Chicago and LA, taking advantage of the combined transcontinental routes of ATSF and SP. Six-axle power would be used on these new double-stack container trains just

coming into use more at this time. UP's APL double-stack container train debuted in 1984, for example.

SD60s would replace aging SP equipment and stick primarily to the I-5 corridor between Los Angeles and Seattle. B39-8Es and GP60s would be used for the increasing amount of intermodal traffic, largely for TOFC and COFC, lighter trains than the double-stacks, and replicate exactly what the ATSF and SP did buy after the merger was denied.

I picked the C39-8E over the SD60 because I already have a KCS SD60 on my roster and I really like GE power – it will be interesting to show the progression of motive power and I already have models of the C40-8W and C44-9W.

More: Read Eric's "Downsizing My Empire: How I Shrank from a Midsize to a Small Switching Layout in the Same Basement" at [mrhmag.com/node/34490](http://mrhmag.com/node/34490). 



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# YES ... IT'S A MODEL



Model Railroad Hobbyist | December 2018 | #106

compiled by **JOE FUGATE**



**RATE THIS ARTICLE**



1. The usual back-to-back pair of EMD F40PH locomotives rumble by on the point of Train 13, Amtrak's westbound Coast Starlight, on the Southern Pacific's Coast Route in 1982.

Brian Moore weathered and renumbered these Kato locos and installed after-market Soundtraxx Tsunami decoders. Brian took the picture on his developing HO scale home layout, which will eventually feature an operational chunk of the Guadalupe Subdivision and reasonably accurate depictions of Guadalupe and Oceano as they were in 1954.

► **MRH'S MONTHLY PHOTO ALBUM**



2. A hard-working Frisco SD45 leads a diesel lashup through Tulsa yard in 1975. Steve Hurt acquired this Athearn ready-to-run SD45 from [org](#) site. Steve then added a few Frisco-specific details to it including recorder, and sun shades. He faded the model finish with a wash of t weathering using primarily oils with some pastels for the soot and g the model outside on a small simple yard diorama.



ard on a dreary November  
m a friend on the Frisco.  
y a five-chime horn, speed  
hinned acrylics, then added  
rime. Steve photographed



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# LOOK

column

Model Railroad Hobbyist | December 2018 | #106

## JEFF SHULTZ looks at Jacksonville Terminal Company N scale containers ...

THE JACKSONVILLE TERMINAL COMPANY (JTC) IS A NEW producer of N scale intermodal containers that are designed to stack using magnets and steel plates inside the bodies to hold them together.



1. 40-foot high-cube container magnetically connected to two 20-foot containers, held suspended.



**RATE THIS ARTICLE**

Container types that have been released include 20- and 40-foot standard-height corrugated-side containers with multiple door types, 40-foot high-cube corrugated side containers, 53-foot corrugated-side high-cube containers, 40-foot canvas/open top “rib-style” corrugated containers, and 20- and 40-foot “flatrack” containers with collapsible bulkheads. These were announced at the 2018 National Train Show in Kansas City, and I was able to take photos of them there.

The models provided to *Model Railroad Hobbyist* include 40-foot high-cube corrugated containers decorated for APL, CP Ships, CAI Interasia, and CMA CGM, and 20-foot standard-height containers decorated for GE “CLINIC IN A CAN,” APL, and Tiphook. All the containers included the manufacturer’s magnetic connecting system and IBC (Inter-Box Connecting pins), and as can be seen from the photos, they hold together, including stacking a 40-foot container on top of two 20-foot containers.



JTC has produced retro-fit kits for assorted Atlas, Micro-Trains, and ScaleTrains.com

**2. 20-foot corrugated container, 3/4 high view, GE “CLINIC IN A CAN”.**

## FIRST LOOK | 3

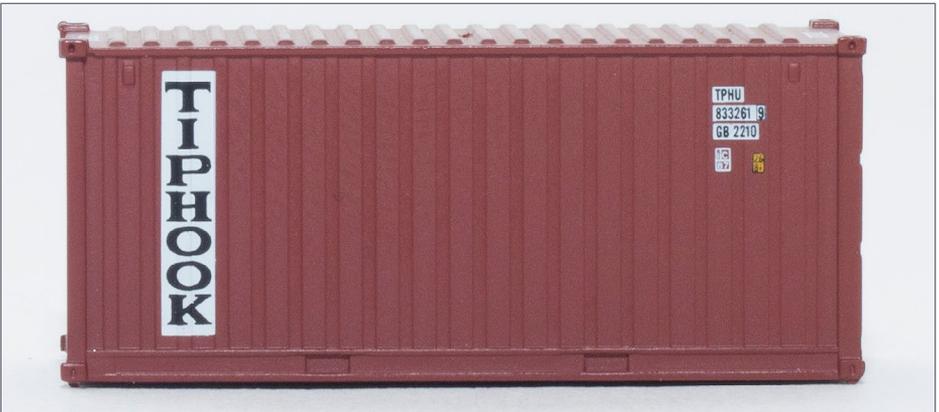
containers to make them compatible with the JTC magnetic and IBC connections.

One special container available from JTC is the Harrison's Heart fundraiser 40-foot high-cube container, which helps to pay the expenses incurred by Harrison Gaudynski's medical treatments for congenital heart defects.

Harrison is the young son of Fox Valley Models' owner, Matt Gaudynski. They can be seen here: [jtcmodeltrains.com/products/harrison-s-heart-40-high-cube-containers-with-magnetic-system-corrugated-side-jtc-chd-harrison-s-heart](http://jtcmodeltrains.com/products/harrison-s-heart-40-high-cube-containers-with-magnetic-system-corrugated-side-jtc-chd-harrison-s-heart).



3. 20-foot corrugated container, end view, APL.



4. 20-foot corrugated container, side view, TIPHOOK.

## FIRST LOOK | 4

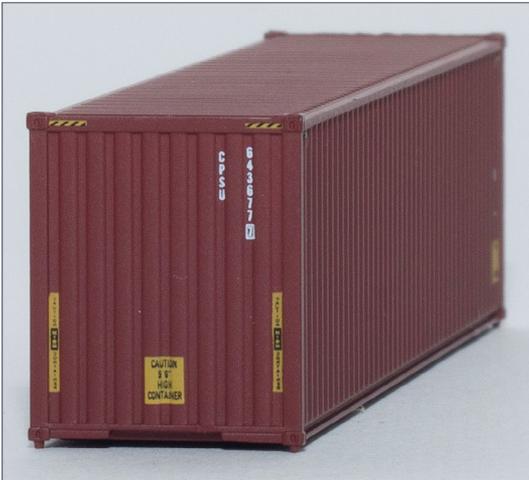
Two containers are included in each package, and retail for \$29.95, with the Harrison's Heart Fundraiser going for \$35. Check with your local retailer or *MRH* advertiser for availability.

JTC products and announcements can be found at [jtcmodel-trains.com](http://jtcmodel-trains.com).

More photos of the containers, including the “flatracks,” can be seen on the *MRH* website in the comment thread for this article.



5. 40-foot high-cube corrugated container,  $\frac{3}{4}$  rear view, APL.



6. 40-foot high-cube corrugated container, front view, CP SHIPS.

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# DECEMBER NEWS column



Model Railroad Hobbyist | December 2018 | #106

**RICHARD BALE** and  
**JEFF SHULTZ** report the  
latest hobby industry news



**RATE THIS ARTICLE**

## NEW PRODUCTS FOR ALL SCALES

### Open Top Loads

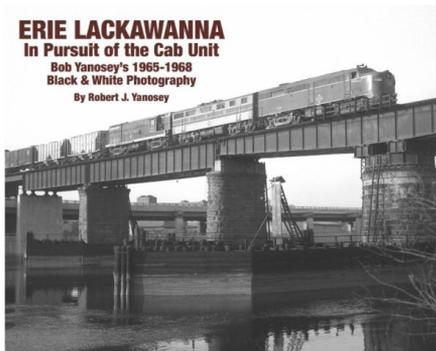
Flatcar and Gondola Color Portfolio  
Volume 3



by Robert J. Yanosey

### ERIE LACKAWANNA In Pursuit of the Cab Unit

Bob Yanosey's 1965-1968  
Black & White Photography  
By Robert J. Yanosey



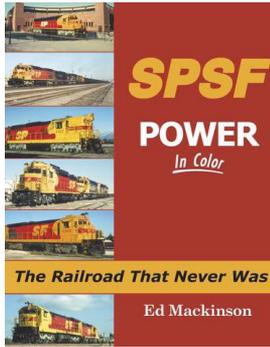
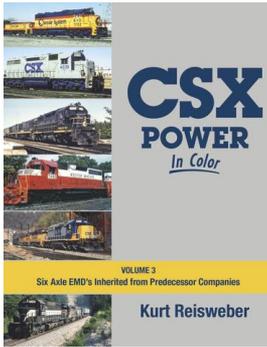
New publications from **Morning Sun Books** include two soft-cover books by Robert J. Yanosey: *Open Top Loads, Flatcar and Gondola Color Portfolio, Volume 3*, and *Erie Lackawanna, in Pursuit of the Cab Unit 1965-1968*.

► THE LATEST MODEL RAILROAD PRODUCTS, NEWS & EVENTS

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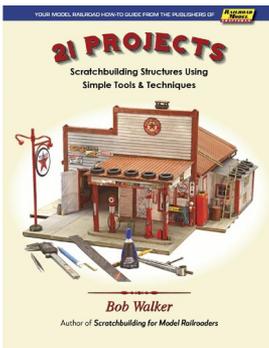
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New hardcover books released just in time for the holiday season include a photo collection edited by Kurt Reisweber titled *CSX Power in Color, Volume 3, Six Axle EMD's Inherited from Predecessor*

*Companies*. Also new is *SPSF Power in Color: The Railroad That Never Was*, by Ed Mackinson. For additional information contact a dealer or visit [morningsunbooks.com](http://morningsunbooks.com).

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**White River Productions** has released “*21 Projects – Scratchbuilding Structures Using Simple Tools and Techniques*,” by Bob Walker. The 120-page softcover book offers inspiration and guidance for building structures in HO, S, O, and F scales. The book includes scale drawings for five of the projects. For additional information contact a dealer or visit [shop.whiteriverproductions.com](http://shop.whiteriverproductions.com).

.....

## CLUB CARS



**The Burlington Route Historical Society** is selling a limited run of HO scale custom painted and lettered Accurail outside braced 40'

single door boxcar kits representing the XM25/XM26 class of cars from the CB&Q, Fort Worth & Denver, and Colorado & Southern railroads. Four cars are available, two CB&Q (XM25 & XM26), one FW&D (XM25), and one C&S (XM26). The cars are equipped with Andrews or Bettendorf trucks as appropriate as well as Accumate couplers. For more information and to order, go to [www.burlingtonroute.org/store/purchase\\_by\\_mail/XM25XM26Flier.pdf](http://www.burlingtonroute.org/store/purchase_by_mail/XM25XM26Flier.pdf).

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## MULTIPLE SCALES



**Atlas** has announced the re-release of its All Scales Signal System, which features the new Universal Signal Control Board. The board supports both common anode and common cathode signals, and maintains compatibility with Atlas' existing boards and cabling. The system

supports Stand Alone Operation, Integrated ABS Block Signaling, Approach Only Signaling, Flashing Aspects, Complex and Interlocking Signaling, and Manual Control, for integration into CTC systems. In addition to the Universal Signal Control Board, several N, HO, and O scale signals have been announced and an Interlock Control Module is forthcoming. For more information on this and other Atlas products, download the [Atlas Signal Guide](#) and visit [atlasrr.com](http://atlasrr.com) or your local dealer.

.....

## O SCALE PRODUCT NEWS

**3rd Rail Division of Sunset Models** is soliciting reservations for an O scale Krauss Maffei ML-4000 diesel locomotive.



Road names will be Southern Pacific and Denver & Rio Grande Western. The O scale model will be crafted in

Korea using an ABS body and a metal underframe. The diecast trucks will be sprung with ball bearing axles. Features include a fully detailed cab interior and numerous brass details applied to the body. Operating capability will include ERR CRUISE in 3-rail TMCC with new Railsounds, or QSI "Titan" DCC Sound for 2-rail applications. The minimum radius for 2-rail operation is 48 inches. Availability is TBA. For more information contact a dealer or visit [3rdrail.com](http://3rdrail.com).

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**Atlas O** is accepting advance reservations for a group of 60-foot passenger cars scheduled

for release during the second quarter of 2019.



Body types in this release will be a baggage car, RPO, combine, coach, and an observation car.



Features of the Trainman series models include working diaphragms, separate grab irons, and

detailed interior with LED lighting. Trucks will be either four or six wheel depending on the car body type.



Road names will be Seaboard, Rio Grande, Santa Fe, Lackawanna, Norfolk & Western,

Central of New Jersey, Chicago Great Western, and Monon.

Undecorated models are also planned for this release. A video of Atlas 60-foot O scale passenger equipment can be viewed at [youtu.be/XJpQqngcOwU](https://youtu.be/XJpQqngcOwU).



Atlas O also plans to release a Trainman series 52-foot 6-inch gondola

during the second quarter of next year. The gondola is based on a car built by American Car & Foundry. The model will feature separately applied ladders, brake wheel and brake lines.



Road names will be Canadian National, Burlington Northern,

Chicago & North Western, Lehigh Valley, Delaware & Hudson, Erie Lackawanna, Union Pacific, and Pennsylvania Railroad. An undecorated version will be included in the run. All Atlas O rolling stock is available with a choice of 2-rail or 3-rail couplers and trucks. For additional information contact a dealer or visit [atlaso.com](http://atlaso.com).



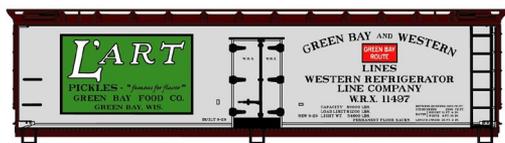
**Rusty Rail** has released two new O scale cast resin figures. They are identified as Nick (left #RRPR-O-13) and Bob (right #RRPR-O-14). The resin cast figures come unpainted. For additional information visit [rustyrail.com](http://rustyrail.com).

## HO SCALE PRODUCT NEWS



single-sheathed wood car built in 1916.

**Accurail** has released an HO scale kit for a 36-foot Fowler boxcar decorated for the Wabash Railroad. The model represents a



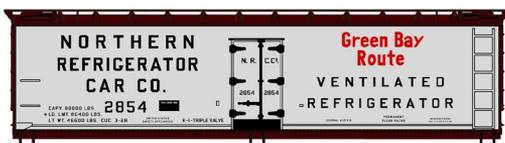
represent lines operating in and around the Wisconsin area in the 1920s. They included this WRX-Green Bay & Western Lines Western Refrigerator Line Company. The billboard art promotes L'art Pickles. The car is stenciled with a build date of September 1929.

At Trainfest Accurail introduced three new kits for HO scale 40-foot wood reefers decorated to



promotes the consumption of butter.

Somehow the pelican on the side of this FCKX-Farmers' Co-operative Creamery wood reefer



owned by Northern Refrigerator Car Co.

This HO scale model represents an ice refrigerator car built in March 1928. The 40-foot wood car was



For hobbyists at Trainfest who model a more modern period, Accurail offered

this pink HO scale Pullman Standard 4750 cu.ft. covered hopper decorated with a Green Bay & Western patch. All Accurail kits include appropriate trucks and Accumate knuckle couplers. For additional information contact a dealer or visit [accurail.com](http://accurail.com).

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**Athearn** has announced plans to deliver an upgraded version of its Genesis EMD GP7/9 diesels next October. The release will include Phase II GP7s, Phase III GP9s, and Phase III cabled GP9Bs.



Also scheduled for release next July is a new production run of EMD SD39 diesel locomotives.

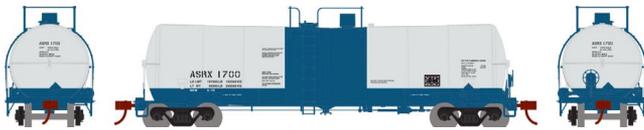


## GP7s AND GP9s

Introduced by EMD in 1949, the 1500 hp GP7 positioned the cab behind a short narrow hood rather than an end cab on a cowl body. The full height hood easily accommodated EMD's 16-cylinder 567 diesel engine. Externally, the first 1750 hp GP9s were mostly unchanged from the GP7 but later versions of the GP9 had different louver arrangements. When shopping for new locomotives, many railroads found it more economical to rebuild their reliable GP7s and GP9s than to purchase new equipment.

The Ready-to-Roll series HO scale model will be available decorated for Soo Line Railroad, Lake States (Soo Line Lake States Transportation Division), and Illinois Terminal.

SD39s decorated in Athearn's Primed For Grime weathered paint will be available for N&W, Southern Pacific, BNSF, Great Northern, and Santa Fe. The HO scale model will be available without sound and with Soundtraxx Econami Sound.



A re-run of Athearn's 16,000-gallon tank car is scheduled for release in October 2019. Features of the HO scale Ready-to-Roll model include separately applied nozzle fittings, a detailed manway, small safety valve nozzles, full brake plumbing and rigging, metal photo-etched walkways and end platforms, and roller bearing trucks with 36-inch machined metal wheelsets.



Road names will be ASRX-Amstar, GATX-ELCOR Chemical Corp, TILX-Trinity Industries Leasing, SHPX-Shippers Car Line (ex OMYA), ACFX-American Car & Foundry Leasing, ACFX-Specialty Minerals, and two schemes for UTLX-Union Tank Car Co.



Athearn's October 2019 production schedule includes a group of Thrall high-side coal gondolas. Road names will be KCLX-Kansas City Power & Light Company, PSCX-Public Service Company of Colorado, SATX-San Antonio Public Service Board, Denver & Rio Grande Western, Burlington Northern, and Union Pacific. The HO

scale Ready-to-Roll models will ride on 100-ton roller bearing trucks with 36-inch machined metal wheelsets.



Roundhouse Brand models coming from Athearn next October include GP40-2 diesel

road switchers. The HO scale models replicate the 3,000 hp prototypes EMD built between 1972 and 1986. Road names will be Alaska Railroad, Burlington Northern, Santa Fe (Primed for Grime paint), Conrail, GATX Locomotive Group, Indiana Harbor Belt, Norfolk Southern (ex-Conrail in Primed for Grime paint), and Union Pacific.



Variations dependent upon which prototype is being modeled include small or large

fuel tanks and Blomberg B or M trucks. The HO scale ready-to-run model will be DCC-ready with 8 and 9 pin plugs to accommodate an aftermarket decoder. For additional information on Athearn or Roundhouse products contact a dealer or visit [athearn.com](http://athearn.com).



New **Atlas HO** scale models coming during the second quarter of 2019 include this Master series

53-foot Evans double plug-door boxcar. The ready-to-run model is based on an insulated RBL prototype from the late 1960s that used two plug doors to cover a 16-foot opening.



Road names will be Illinois Central, British Columbia, Chicago & North Western, Union Pacific, Wisconsin Central, Wisconsin &

Southern, WSOR (ex-Sargento), and undecorated.

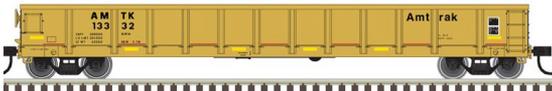


The design of Atlas's new Trainman series 4750 cu. ft. covered hopper with triple discharge bays is based on a Thrall-built prototype.



In addition to AACX-State of Alaska, Atlas will offer this HO scale ready-to-run model decorated for CWP&S-Chicago, West

Pullman & Southern; First Union Rail, CIT Group, North American Car, Burlington Northern, Kansas City Southern, Texas Gulf, State of Alaska, Union Equity, and undecorated.



Completing Atlas's second quarter release of HO scale models is a

Trainman series steel gondola. The HO scale model follows a 52-foot prototype built by Evans. Features include 100-ton roller bearing trucks with machined metal wheelsets.



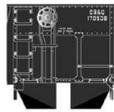
Road names will be Amtrak, GE Railcar Services, Union Pacific (CNW patch),

Canadian National, Herzog, and Maine Central. For additional information contact a dealer or visit [atlasrr.com](http://atlasrr.com).



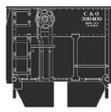
**Bachmann Trains** is selling an accessory power supply that provides 16 volts DC from dual output terminals at a total load of up to 1 amp. The device is designed to supply power to multiple accessories at the same time. For additional information contact a dealer or visit [bachmanntrains.com](http://bachmanntrains.com).

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**Bowser Trains** is accepting reservations through

December 7, 2018 for new production runs of two styles of coal hopper cars. Delivery of both ready-to-run HO scale models is set for next summer. In addition to the CB&Q car shown above, 70-ton triple-bay hopper cars with offset sides will be available decorated for Baltimore & Ohio, Canada Southern, Detroit, Toledo & Ironton; Nickel Plate Road, OL&B, Ontario Northland, Southern Pacific, Toronto, Hamilton & Buffalo; and Seaboard.



HO scale 55-ton coal twin-bay coal hoppers will be available for Baltimore & Ohio, Central Railroad of

New Jersey, Chesapeake & Ohio, Lehigh Valley, Reading Anthracite, and two schemes each for Delaware & Hudson and Western Maryland.



The 55-ton car will be available with peaked ends for Norfolk & Western and Norfolk Southern. Bowser's

ready-to-run models will have knuckle couplers and appropriate trucks with metal wheelsets. For additional information contact a dealer or visit [bowser-trains.com](http://bowser-trains.com).

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**City Classics** has released a new series of Picture Windows kits, which are photo interiors for buildings. Available individually or as a four pack, the new Picture Windows are of a Shoe Store, Appliance Store, Clothing Store

and a Jewelry Store. The Picture Windows are printed on high quality plastic film appropriate for backlighting. Each kit comes with the picture, cardstock strips to build a shadowbox behind the picture for lighting, and instructions. For more information or to purchase, go to [cityclassics.biz](http://cityclassics.biz).

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The latest HO structure from **Fos Scale Models** is T & B Wiley Waterproofing, a craftsman kit that combines walls laser-cut from clapboard with Hydrocal brick walls. The kit includes color signs, metal detail parts, Tichy plastic windows and

doors, laser-cut roof material, and detailed assembly instructions. The completed model has a footprint of 6.5 x 8 inches. Figures and scenery items shown are not included. For additional information visit [fosscalemodels.com](http://fosscalemodels.com).

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**InterMountain Railway** is taking reservations through the end of December for a group of wood ice refrigerator cars. No delivery date has been announced. Road names

will be Pacific Fruit Express (three schemes including ice service), Western Pacific (two schemes), Northern Pacific, DL&W – Lackawanna Refrigerator Line, MDT, Bangor & Aroostook, and Burlington Refrigerator Express.



Each road name will be available in six numbers. The HO scale ready-to-run models have double sheathed wood ends, Kadee couplers, and

Bettendorf-style solid-bearing trucks with 33-inch machined metal wheelsets. For additional information contact a dealer or visit [intermountain-railway.com](http://intermountain-railway.com).



New **Kadee** releases will include an HO scale version of this Canadian National 50-foot PS-1 boxcar. Like the prototype, Kadee's model features a cushion

underframe and 10-foot Youngstown sliding doors. The prototype was built in 1970 and repainted in CN's blue scheme in February 1986.

Kadee has released its 1947 version of Pullman-Standard's 40-foot PS-1 decorated for New York, New Haven & Hartford. Kadee's HO scale rendition features prototypically correct 7-foot seven-panel Superior doors. Both of these new models

will have Kadee #2100 couplers and two-piece self-centering trucks. For additional information contact a dealer or visit [kadee.com](http://kadee.com).

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New HO scale automobiles from **Oxford Diecast** include a Mercury and three Buicks. The Mercury is a 1949 two-door model with whitewall tires and fender skirts.



Oxford has released its 1955 Buick four-hole Century two-door decorated as a California Highway Patrol car, and as a New York taxi.



The CHP version works for me but the taxi, not so much. It will look good at a distance but it would be unusual, especially in NYC, to see the real thing as a two-door hardtop with whitewall tires.



Oxford is selling a 1936 Buick convertible coupe decorated in Cardinal Maroon. The classic model features red leather interior, whitewall tires, and dual side-mount spares. For additional information contact a dealer or visit [walthers.com](http://walthers.com).

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**Rapido Trains** continues to raise the bar for commercial scale models. Among the latest projects is an all-new HO scale version of a Pullman Standard lightweight dining

car. According to Rapido president Jason Shron, the new car eclipses the model his company introduced a decade ago.



The new version features multi-color interior details with separate chairs, tables and kitchen details, individual place settings on the tables, interior lighting, and factory-installed grab irons.

Additional upgrades worth noting are working diaphragms with internal metal springs, and battery-free, track-powered lighting controlled by a hidden magnet switch in the roof. The lighting system works on DC or DCC systems. Mechanical improvements to ensure smooth tracking include a new rigid underframe, 41-BNO-11 or 41-N-11 trucks with inline brake shoes, and long-shank couplers to improve operation on curves with a radius as tight as 18 inches.



Although the new HO scale model is based on a prototype Pullman built for the Canadian National Railway

in 1954, the design is very much like dining cars used by numerous North American railroads. Depending on the road name being modeled, the interior configuration will replicate dining for 48, 40, or 32 passengers plus a lounge.



Road names under consideration for the initial release include Amtrak (Phase 1), Baltimore & Ohio, Canadian National (1954 and 1961 ver-

sions), Chicago & North Western, Great Northern, Illinois Central, Milwaukee Road (Hiawatha), Milwaukee Road (yellow scheme), Missouri Pacific (Eagle), Missouri Pacific (Jenks Blue), New York Central, Norfolk & Western, Northern Pacific (Loewy design), Ontario Northland, Pennsylvania Railroad, Southern Pacific (Sunset), Union Pacific, and VIA Rail Canada. Orders will be accepted through June 24 with delivery expected in late 2019. Roads that fail to receive a minimum number of orders will not be produced.

A second, equally impressive, HO scale dining car is also under development at Rapido. In collaboration with the New Haven Railroad Historical and Technical Association, Rapido is tooling an HO scale model of the NYNH&H dining car that served on the post-war iterations of the New Haven's Merchant's Limited and Yankee Clipper.

Two versions of the New Haven dining car will be available from Rapido: as delivered with skirts, and in the McGinnis paint scheme without skirts. Delivery is expected in late 2019. For additional information contact a dealer or visit [rapido-trains.com](http://rapido-trains.com).

The McGinnis scheme with skirts will be available exclusively through the New Haven Railroad Historical and Technical Association ([www.nhrhta.org](http://www.nhrhta.org)).

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**ScaleTrains.com** has announced a second production run of its HO scale GE C39-8 diesel locomotive. Upgrades from the initial release of the ready-to-run model include

operating LED ditch lights. In addition to the GE Demonstrator shown above, road names will be Conrail, Norfolk Southern, CSX ex-Conrail patch, Southern Alberta Railway/Savage (ex-CSX YN3 scheme), and Pennsylvania Northeastern. The Rivet Counter series model will be available with DCC (sound ready) and factory installed ESU-LokSound DCC and Sound with dual cube-type speakers. Availability is planned for summer 2019.



ScaleTrains.com's 2019 summer schedule includes F68AH bulkhead flat cars as built for Trailer Train by Bethlehem Steel beginning in 1969. Scale



## F68 BULKHEAD FLAT CARS

Bethlehem's initial production of the F68 cars utilized early jacking pads and measured 62 feet inside the bulkheads. Subsequent production used redesigned jacking pads and an inside length of 60-foot 6-inches. The builder's final production version used the late jacking pads and measured 62-feet between the bulkheads. These later cars were produced both with and without risers on the wood deck.

Train's Rivet Counter HO version of the TTX cars will be available in four paint schemes: oxide red, yellow, with speed logo, and Pennsylvania Heritage logo. Features of the Rivet Counter model include a laser-cut wood deck, 100-ton trucks with a hydraulic snubber, and rotating bearing caps.



Also scheduled for release next summer is another production run of 53-foot CIMC dry containers.

Spotting features include two vents on each side, seven square nose corrugations with blank panels top and bottom, 8-58-8 side wall corrugations, 1-3-1 beveled door corrugations, and 6-54-6 roof corrugations. Separately applied details on ScaleTrains.com's dry containers include photo-etched hazmat placard holders and four individual door locking rods.



Carrier names on the Operator series model will be JB

Hunt, XPO Logistics, Schneider, COFC Logistics, and Hub Group.



CIMC refrigerator containers are included in the 2019 summer release. The HO scale CIMC 53-foot reefer

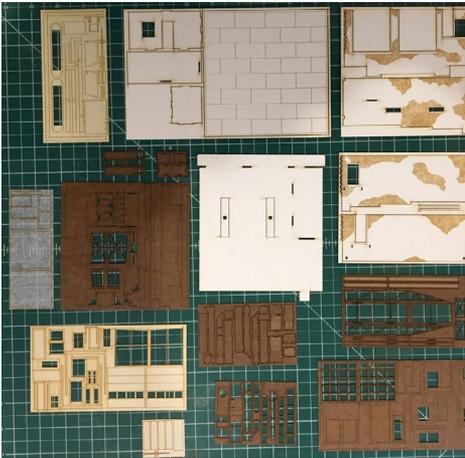
cans feature a Thermo-King refrigeration unit in a detailed end cage, a separate fuel tank, photo-etched hazmat placard holders, and individual door locking rods. Carrier names will be Maritime Ontario, Quicktrax, and CR England. The basic containers will be sold in three packs. An individual container with a digitally recorded Thermo-King refrigeration sound unit will also be available. For additional information visit [scaletrains.com](http://scaletrains.com).





**Showcase Miniatures** is selling an HO scale craftsman structure kit called Lee King Radiator & Muffler Repair Shop. The illustrated model was built by Jason Jensen. The kit features tab and slot construction using laser-cut

walls and construction components, laser-cut peel-and-stick window material, cast pewter details, appropriate signage, and step-by-step instructions.



The assembled structure has a footprint of 5 x 6 inches. For additional information visit [showcaseminatures.net](http://showcaseminatures.net).



During Trainfest at Milwaukee, **Tangent Scale Models** announced its new high side version of the Pullman-Standard PS-2CD

4427 cu. ft. covered hopper.

The HO scale model was developed from Pullman-Standard plans and field verification measurements. Variations in road-specific



details include different stirrup steps, roof hatches, jacking pads, tow loops, discharge gates, side air lines, running board supports,

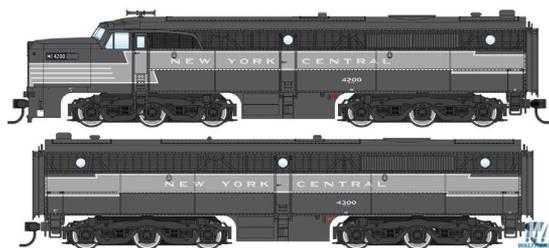
crossover platforms, end ladders, and brake wheels.



Road names include Missouri Pacific, Milwaukee Road in as-delivered yellow with large lettering, Rock Island, Toledo, Peoria & Western in original

1968 gray; Santa Fe (TP&W re-stencil), TLDX, and TLDX-Louis-Dreyfus. Tangent's HO scale model is loaded with both subtle and obvious details including see-through running boards, etched metal crossover platforms, uncoupling bar, 100-ton trucks with 36-inch machined wheelsets, and Kadee couplers. For more information visit [tangentscalemodels.com](http://tangentscalemodels.com).

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**Walther's** has announced plans to produce another run of its Mainline series Alco PA and PB diesels. The HO scale models are expected to be ready in

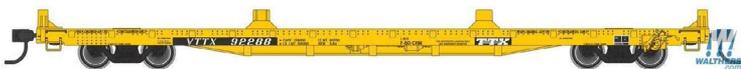
September 2019. The economy priced Mainline model will use the same drive as Walther's top-of-the-line Proto series locomotives. Drill starter points for grab irons will be molded in the body shell. Correctly sized grabs will be sold separately in a PA-PB detail kit. The ready-to-run diesels will be available for DC operation and with factory installed ESU sound for DCC.

Road names will be New York Central, Delaware & Hudson, Santa Fe (Warbonnet scheme), New Haven (McGinnis scheme), and Southern Railway.



Jordan Spreaders are scheduled for release by Walthers in February 2019. The Proto series ready-to-run model will have positionable moldboards and wings, glazed cab windows, factory installed grab irons, and solid or roller bearing trucks as appropriate to the prototype being modeled.

Road name details include the type of headlight. BNSF and Soo Line models will have modern horizontal headlights. A vertical headlight will be on spreaders decorated for Canadian National (black), Grand Trunk Western, MOW (orange), MOW (black and red), and an undecorated kit. Chicago & North Western spreaders will have a modern round headlight.



Walthers is preparing to release a new general service flat car in April. The HO scale Mainline model is based on a 60-foot car Pullman Standard car built in the mid-1960s. The car will be equipped with 70-ton roller bearing trucks with 33-inch turned metal wheelsets. Road names on this release will be Santa Fe, Elgin, Joliet & Eastern; Southern Railway, and VTTX. A car decorated for OTTX will have two center tie-down channels as used for farm machinery. Four Trailer Train versions will also be available: OTTX (two schemes, brown or yellow), VTTX (yellow with white TTX logo), VTTX (rebuilt for 20 and 40-foot container loading).



Announced at Trainfest, Walthers will also be releasing an 85-foot General American G85 flatcar. Part of the Mainline line, it is scheduled for a February 2019 delivery. Featuring a die-cast metal center sill, it will have roadname specific details. 70-ton roller bearing trucks, 33" turned metal wheels, and Proto MAX metal knuckle couplers will be standard. Roadnames available will be Santa Fe, Trailer-Train GTTX-Brown, Trailer-Train GTTX-Yellow, Penn Central, Railway Express Agency, Southern Pacific and TTX VTTX. The recommended minimum radius is 24".



Walthers is selling a SceneMasters kit for a small modern business center. The HO scale model is styled after contemporary tilt-up concrete construction. The rear of the building has four truck docks with weather

bellows/seals and inside loading doors. The finished model is 5.25-inches high and has a footprint of 18.25 x 10.44-inches. Vehicles and figures are not included.

Walthers reports it will have three new HO scale kits for heavy-equipment vehicles available late this month. They include a kit for a Kalmar Intermodal Container-Trailer Crane (next page), and a two-axle off-road crane with a telescoping boom and positionable outriggers.

Completing Walthers release of heavy vehicles is a kit for a Hi-Rail excavator. The model will have an optional bucket, positionable cab, and a boom that can be raised and lowered.



For additional information on all Walthers products contact a dealer or visit [walthers.com](http://walthers.com).



© Wheels of Time Photo

**Wheels of Time** is offering several versions of an HO scale Allis-Chalmers HD-21 crawler tractor. The basic model is composed of a resin body and crawler treads with a 3-D printed acrylic blade, hydraulic cylinders, and exhaust pipe. The model is available as a

kit without a blade (above), as a kit with a separate dozer blade, and as a fully assembled and painted model. Special decals are also available. For complete details visit [wheelsotime.com](http://wheelsotime.com).



## N SCALE PRODUCT NEWS



New N scale models coming from **Athearn** include a group of Thrall

high-side coal gondolas. Road names will be KCLX-Kansas City Power & Light Company, PSCX-Public Service Company of Colorado, SATX-San Antonio Public Service Board, Denver & Rio Grande Western, Burlington Northern, and Union Pacific. The N scale model will have screw-mounted 100-ton roller-bearing trucks with machined metal wheelsets. Availability is planned for next October.



### COAL GONDOLAS

In the 1960s, railroads began replacing the traditional open hopper car with high-sided gondolas. Using a gondola, the railroads were able to haul more coal per car since gondolas did not devote space and weight to equipment needed for unloading. The savings were enough for major customers to offset the cost of rotary car dumpers.



Athearn's October 2019 production schedule also includes this N

scale Pullman-Standard 4427 cu. ft. triple-bay covered hopper. The ready-to-run model will be available decorated for Montana Rail Link, TLDX-Harmon Grain, TLDX-Pillsbury, Santa Fe, Burlington Northern, and Chicago & North Western, UP, and Wisconsin Central. For additional information contact a dealer or visit [athearn.com](http://athearn.com).





Atlas has scheduled the release of its new GP20 diesel locomotive during the second quarter of 2019.

The N scale Master series model will be available decorated for Union Pacific, Burlington Northern, Conrail, EMD Demonstrator, Santa Fe, and Southern Pacific (red and gray scheme).



Atlas Master Silver versions of the new locomotive will be available equipped with a speaker to ease conversion to DCC sound. Atlas

Gold locomotives offer a total of six DCC function outputs.



## ABOUT THE EMD GP20

Except for the short, square turbo-charger stack and the flared radiator fans, the EMD GP20 is virtually identical in appearance to a GP9. Following successful turbocharging experiments with nine Union Pacific GP9s in 1959, EMD introduced the GP20 in 1962. The turbochargers increased the output rating of EMDs model 567 16-cylinder engine from 1750 to 2000 horse power.



In addition to the UTCX-Union Tank Car scheme shown above, Atlas will offer this N scale covered hopper decorated for

CWP&S-Chicago, CIT Group, First Union Rail, North American Car, Burlington Northern, Kansas City Southern, Texas Gulf, State of Alaska, Union Equity, and undecorated.



Design of the Trainman series model is based on a Thrall 4750 cu. ft. prototype with triple discharge bays.



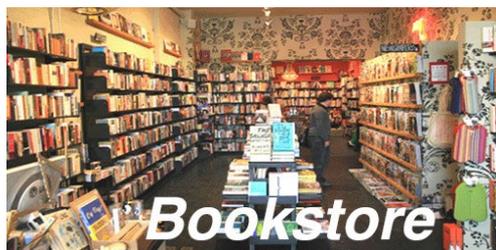
Completing Atlas's second quarter release of N scale models is a Trainman series steel

gondola. The N scale model follows a 52-foot prototype built by Evans. Features include 100-ton roller-bearing trucks with machined metal wheelsets.



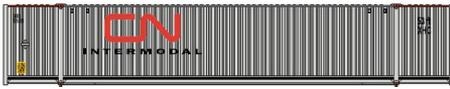
Road names will be Amtrak, GE Railcar Services, Union Pacific (CNW patch), Canadian

National, Herzog, and Maine Central. For additional information contact a dealer or visit [atlasrr.com](http://atlasrr.com).



**City Classics** has released a new series of Picture Windows kits, which are photo interiors for buildings. Available with six pictures to a pack, N scale Picture Windows pack #1250

includes a bookstore, camera store, pharmacy, hardware store, restaurant, and small café. The Picture Windows pack #1251 includes a record shop, barber shop, bakery, small market, and two small stores. The Picture Windows are printed on high quality plastic film appropriate for backlighting. Each kit comes with the picture, cardstock strips to build a shadowbox behind the picture for lighting, and instructions. For more information or to purchase, go to [cityclassics.biz](http://cityclassics.biz).



**Jacksonville Terminal Company** has sched-

uled a late December

release for several N scale 53-foot 6-42-6 containers. Carrier names will be CN Intermodal, Hub Group, Pacer, CSX Intermodal, EMP (ex-Pacer patch), and EMP (ex Hub Group patch).



These models feature IBC connecting pins and magnets on the

bottom and metal plates on top. They are available in two packs. For additional information contact a dealer or visit [jtcmodeltrains.com/blogs/news](http://jtcmodeltrains.com/blogs/news).



Heading the list of new releases from **Micro-Trains Line** is this Northern Pacific 78-foot paired-window

coach. The ready-to-run N scale model is decorated in NP's two-tone green scheme with white lettering and a centered monograph.

Also new from Micro-Trains is this New York Central 34-foot wood caboose that comes with Bettendorf-style swing motion caboose



trucks. As one of NYC's safety cabooses of the 1960s, the N scale model displays the message *"Life is like a baseball game. It is the number of times you get home safe that counts."*



M-T has released this Chicago & North Western stock car in two numbers. The N scale model is based on a 40-foot prototype that was rebuilt in

the mid-1950s at CNW's shops in Council Bluffs Iowa.



This GATX 56-foot general service tank car was leased to Ozone Waters in the 1970s. Micro-Train's N scale ready-to-run model comes

with Barber roller-bearing trucks. For additional information contact a dealer or visit [micro-trains.com](http://micro-trains.com).



**RailSmith Models** has three new lightweight passenger cars scheduled for release in January.

The N scale ready-to-run cars include this Pullman Standard 64-seat coach decorated for Great Northern (three names) and Norfolk Southern. Also a Pullman Standard 10-roomette, 6-double bedroom smooth-side sleeper decorated for Northern Pacific, Southern Pacific (two schemes), Pullman (NYC two-tone gray), and Union Pacific.

Completing RailSmith's January release is an N scale Pullman Standard 10-roomette, 6-double-bedroom sleeper with fluted sides. It will be available for Atlantic Coast Line and Missouri-Kansas-Texas/St. Louis-San Francisco Texas Special. For additional information visit [railsmith.net](http://railsmith.net).

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**ScaleTrains.com** plans to release the next run of its N scale GE Tier 4 GEVo diesel locomotive next spring. Road names for the Rivet Counter model will be Canadian National, BNSF, Norfolk

Southern, CSX (two schemes including Spirit of Ravenna), GECX, Navajo Mining, and Union Pacific. The model will be available DCC- ready, with factory installed ESU DCC, and with factory installed ESU-LokSound Select DCC and sound.



Also scheduled for release next summer is another production run of 53-foot CIMC dry containers.

Features of the N scale models include a square nose with seven corrugations with blank panels top and bottom, 8-58-8 side wall corrugations, 1-3-1 beveled door corrugations, and 6-54-6 roof corrugations. Separately applied details include photo-etched hazmat placard holders and four individual door locking rods.



Carrier names on the Operator series model will be JB Hunt, XPO Logistics, Schneider, COFC Logistics, and Hub Group.



CIMC refrigerator containers are also in the summer release. The N scale CIMC 53-foot reefer container

feature a Thermo-King refrigeration unit in a detailed end cage, a fuel tank, photoetched hazmat placard holders and individual door locking rods. The basic containers will be sold in three packs. An individual container with a digitally recorded Thermo-King refrigeration sound unit will also be available. Carrier names will be Maritime Ontario, Quicktrax, and CR England. For additional information visit [scaletrains.com](http://scaletrains.com).

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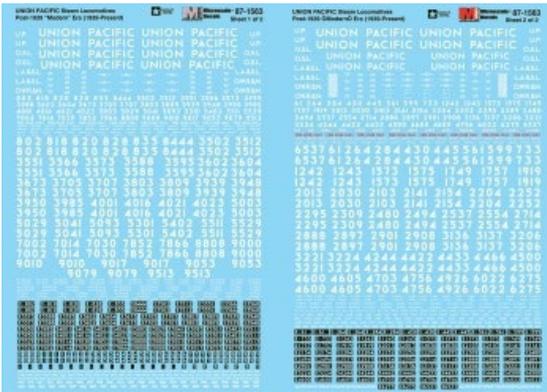
**Walthers** is selling a plastic kit for an N scale Steel Arched Pratt Truss Bridge. The Cornerstone series single track bridge is 14.14-inches long. The internal height will clear

double-stack and other tall cars. The structure can be used as a single, stand-alone bridge or as a center span for longer bridges. Walthers has also released N scale piers (933-3880) and abutments (933-3881) that are compatible with this model. For additional information contact a dealer or visit [walthers.com](http://walthers.com).

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## NEW DECALS, SIGNS AND FINISHING PRODUCTS

**Microscale** is selling HO and N scale waterslide decals for Union Pacific steam locomotives of the post-1939 period. The decals include white lettering and engine numbers as well as



small white-on-black marker numbers.



Microscale is also selling HO and N scale waterslide decals for the Union Pacific's Spirit of Union Pacific locomotive. An EMD SD70ACe, UP 1943 is the 16th commemorative locomotive that UP has presented. Information on UP 1943, including drawings that detail the placement of the symbolic graphics, is available at [www.up.com/aboutup/special\\_trains/commemorative/1943-spirit/index.htm](http://www.up.com/aboutup/special_trains/commemorative/1943-spirit/index.htm).

Microscale reports that several popular railroad decal sets are back in stock including HO and N scale decals for PFE ice reefers and PRR steam locomotives. O scale decals recently replenished include passenger cars, and diesel locomotives for Northern Pacific, Gulf Mobile & Ohio, New Haven and Reading. Also O scale steam locomotive decals for Canadian National, New Haven, and D&RG narrow gauge equipment. Completing the O scale list are decals for Great Northern and Rio Grande cabooses. For additional information contact a dealer or visit [microscale.com](http://microscale.com).

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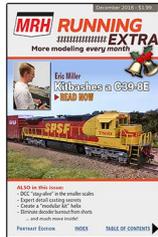
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## BRIEFLY NOTED AT PRESS TIME ...

**Atlas** has postponed its warehouse sale scheduled for December 8. Cancellation of the unique event was due to what Atlas called an overwhelming response for available tickets, and a concern for inclement winter weather. When the new date is announced, individuals who ordered tickets for the original date will be contacted and given an opportunity to get tickets first. Any remaining tickets will be offered to folks on Atlas Insiders email list ...

**InterMountain** has arranged with four new manufacturing sources to replace its former Chinese partner that unexpectedly shut down in 2018. Pre-production samples have already been received from one of the new suppliers. No delivery dates have been announced but InterMountain says the samples look good and actual production quantities are expected soon ...

**Resin Car Works** has released a mini-kit for a Fruit Growers Express truss-rod reefer. The specialized mini-kit is used to kitbash an Accurail HO scale wood reefer into an accurate replica of a FGEX prototype. Details are available at [blog.resincarworks.com/fruit-growers-express-truss-rod-reefer-mini-kit](http://blog.resincarworks.com/fruit-growers-express-truss-rod-reefer-mini-kit) ...

**SoundTraxx** has a video that offers a step-by-step guide to updating a Blackstone Model K-27 with a Tsunami2 Digital Sound Decoder with CurrentKeeper. Check it out at [www.youtube.com/watch?v=MOmtfjckqo&](http://www.youtube.com/watch?v=MOmtfjckqo&) ...

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# SELECTED EVENTS



Model Railroad Hobbyist | December 2018 | #106

## DECEMBER 2018

*(Many events charge a fee. Check individual info website for details.)*

**CALIFORNIA, ALTADENA**, December 8-9, 15-16, 22 and 25, Open House and Operating Sessions, sponsored by Christmas Tree Lane Model Railroad Society, at 2085 Santa Rosa Avenue. Info at [www.facebook.com/events/659074071140690](http://www.facebook.com/events/659074071140690).

**CALIFORNIA, GARDEN GROVE**, December 15-16, Open House at American Model Train Exchange, 11562 Knott Street, Unit 6. Request info from John Engstrom at 714-504-7033.

**COLORADO, BOULDER**, December 7-9, Train Exposition sponsored by Boulder Model Railroad Club, at Boulder County Fairgrounds, Longmont, Colorado. Info at [bouldermodelrailroadclub.org](http://bouldermodelrailroadclub.org).

**CONNECTICUT, ESSEX**, Tuesday through Sunday until February 19, 25th Annual Holiday Train Show, at Connecticut River Museum, 67 Main Street. Info at [ctrivermuseum.org](http://ctrivermuseum.org).

**ILLINOIS, CHICAGO**, December 1-2, 2018, Lake Shore Model Railroad Association Open House, Calumet Field House, 9801 S. Ave. G, Information at [www.lakeshoremodelrr.org](http://www.lakeshoremodelrr.org). (warning: autoplay sound on website.)

**INDIANA, INDIANAPOLIS**, December 8, 2018, Naptown and White River Model Train Show and Open House, Manual High School, 2405 S. Madison Ave, Info at [www.naptownrr.org](http://www.naptownrr.org).

**MARYLAND, BALTIMORE**, December 9, 16 and 30, Open House at Baltimore Society of Model Engineers, 225 West Saratoga Street, third floor. Info at [www.modelengineers.com](http://www.modelengineers.com).

**MARYLAND, WESTMINSTER**, November 23, 2018 – January 5, 2019, Four County Society of Model Engineers Holiday Train Display, TownMall, 400 N. Center St. Info at [www.fcsme.org](http://www.fcsme.org).

**MASSACHUSETTS, MARLBOROUGH**, December 1-2, New England Model Train Expo, hosted by NMRA HUB Division, Best Western Royal Plaza Trade Center, 181 Boston Post Road. Info at [hubdiv.org](http://hubdiv.org).

**MASSACHUSETTS, ROSLINDALE (Boston Metro area)**, December 1-2, Holiday Model Train Show, sponsored by Bay State Model Railroad Museum, at 760 South Street. Info at [www.bsmrm.org](http://www.bsmrm.org).

**MICHIGAN, HOLLY (metro Detroit)**, December 9-10, January 13-14 and 27-28. Open House at the Detroit Model Railroad Club, 104 North Saginaw. For additional dates visit website at [dmrrc.org](http://dmrrc.org).

**NEW JERSEY, EGG HARBOR TOWNSHIP**, December 8-9, Train Show sponsored by Shoreline Model Railroad Club at Atlantic Christian School, 391 Zion Road. Request info from Dennis Weiss at 609-404-7826.

**NEW YORK, ALBANY**, December 2, Annual Great Train Extravaganza hosted by NMRA Hudson-Berkshire Division, Empire State Convention Center. Info at [gtealbany.com](http://gtealbany.com).

**OHIO, LIMA**, December 15, Train Town Show & Swap Meet, sponsored by NMRA NCR 3 Rivers Division, at Merchants Building at Allen County Fairgrounds, 2750 Harding Highway (St Rt 309). Request info from Chuck White at [railcarman@frontier.com](mailto:railcarman@frontier.com).

## January 2019, by location

**CANADA, ONTARIO, PARIS**, January 20, Paris Junction Model Train Show, sponsored by NMRA Western Ontario Division, at Paris Fairgrounds, 139 Silver Street. Request info from Edward Howes at [paristrainshow@gmail.com](mailto:paristrainshow@gmail.com).

**FLORIDA, COCOA BEACH**, January 10-12, Prototype Rails RPM Meet, hosted by Mike Brock. Info at [www.prototype Rails.com](http://www.prototype Rails.com).

**MASSACHUSETTS, WEST SPRINGFIELD**, January 26-27, Amherst Railroad Hobby Show, sponsored by Amherst Railway Society, at Eastern States Exposition Fairgrounds, 1305 Memorial Avenue. Info at [www.railroadhobbyshow.com/aboutus.php](http://www.railroadhobbyshow.com/aboutus.php).

## Future 2019, by location

**AUSTRALIA, CANBERRA, KALEEN**, March 30-31, 31st Annual CMRCI Model Railway Expo, sponsored by Canberra Model Railway Club, at UC High School, Baldwin Drive. For details phone Anthony Hunt at +61 0414 730 824.

**CANADA, BRITISH COLUMBIA, BURNABY**, May 3-5, Railway Modelers Meet of BC, at Simon Fraser University, Burnaby Campus, West Mall Centre. Info at [railwaymodellers-meetofbc.ca](http://railwaymodellers-meetofbc.ca).

**CANADA, ONTARIO, KINGSTON**, March 10, 30th Annual Rail O Rama Model Train Show, sponsored by Canadian Railroad Historical Association, at Ambassador Hotel, 1550 Princess Street. Request info from Graham Oberst at [graham.oberst@bell.net](mailto:graham.oberst@bell.net).

**ILLINOIS, COLLINSVILLE (metro St Louis)**, July 26-27, St. Louis RPM Meet, at Gateway Convention Centre. Info at [icg.home.mindspring.com/rpm/stlrpm.htm](http://icg.home.mindspring.com/rpm/stlrpm.htm).

**KENTUCKY, LOUISVILLE**, March 29, 29th Annual Train Show & Sale, sponsored by NMRA Division 8 Mid Central Region, at Moose Lodge, 4615 Fegenbush Lane. Info at [www.div8-mcr-nmra.org](http://www.div8-mcr-nmra.org).

**OHIO, GREENVILLE**, March 3, 38th Annual Model Railroad Swap Meet, sponsored by the Darke County Model Railroad Club at Youth Building, County Fairgrounds, 800 Sweitzer Street. Request info from Joe Worz at [josephbw@hughes.net](mailto:josephbw@hughes.net).

**OREGON, ELSIE**, March 2, 15th Annual Pacific Model Loggers' Congress, at Camp 18 Restaurant & Logging Museum, 42362 Highway 26. Info at [www.pacificmodelloggerscongress.com](http://www.pacificmodelloggerscongress.com).

**OREGON, PORTLAND**, February 9, 2nd Annual Portland RPM Meet, Shilo Inn & Suites, 11707 NE Airport Way. Information at [www.brpmm.com](http://www.brpmm.com).

**OREGON, PORTLAND**, March 9, 34th Annual Swap Meet sponsored by Willamette Model Railroad Club at WD Jackson Armory, 6255 Northeast Cornfoot Road.

**PENNSYLVANIA, GREENSBURG**, March 22-23, RPM East. Details TBA.

**TEXAS, STAFFORD (Metro Houston)**, February 16, Greater Houston Train Show, sponsored by San Jacinto Model Railroad Club at Stafford Centre, 10505 Cash Road. Info at [sanjacmodeltrains.org](http://sanjacmodeltrains.org).

**TEXAS, FRISCO**, June 27-30, 2019 Texas Special NMRA Lone Star Region Convention, at Drury Inn & Suites, 2880 Dallas Parkway. Info at [www.2019TexasSpecial.com](http://www.2019TexasSpecial.com).

**UTAH, SALT LAKE CITY**, July 7-13, 2019 NMRA National Convention and National Train Show. HQ at Little America Hotel. Info at [nmra2019slc.org](http://nmra2019slc.org).

**VERMONT, ST. ALBANS**, March 9, Vermont Rails Model Railroad Show, sponsored by Northwestern Vermont Model Railroad Association, at Collins Perley Sports & fitness Center. Info at [nwvrrailroad.org](http://nwvrrailroad.org).

**WISCONSIN, MADISON**, February 16-17, Mad City Model Railroad Show & Sale sponsored by NMRA South Central Wisconsin Division, at Exhibition Hall, Alliant Energy Center. Info at [nmra-scwd.org](http://nmra-scwd.org).

**WISCONSIN, STEVENS POINT**, February 2-3, 22nd Arctic Run Model Railroad Show & Sale, sponsored by Central Wisconsin Model Railroaders Ltd, at Stevens Point Holiday Inn and Convention Center, 1001 Amber Avenue. Request info from Jim Miller at [jimbro67@gmail.com](mailto:jimbro67@gmail.com), or go to [www.thecwmmrarcic-run.com](http://www.thecwmmrarcic-run.com).

## Future 2019, by location

**MISSOURI, ST. LOUIS**, July 12-18, 2020, NMRA National Convention and National Train Show. HQ at Hilton St. Louis at the Ballpark. Info at [gateway2020.org](http://gateway2020.org).

**CALIFORNIA, SANTA CLARA**, 2021, NMRA National Convention and National Train Show.

**ENGLAND, BIRMINGHAM**, 2022, NMRA National Convention and National Train Show. ■





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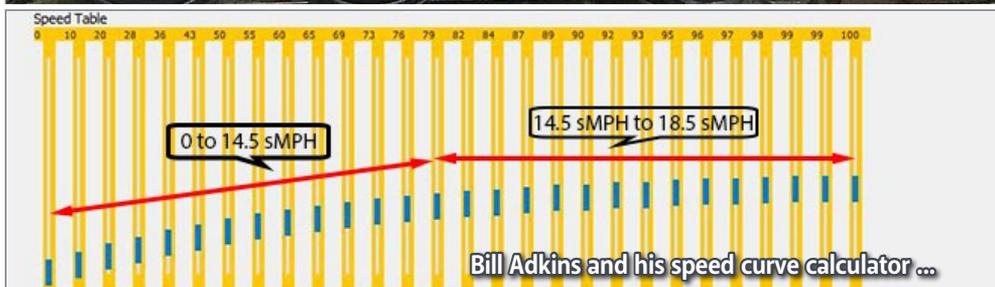
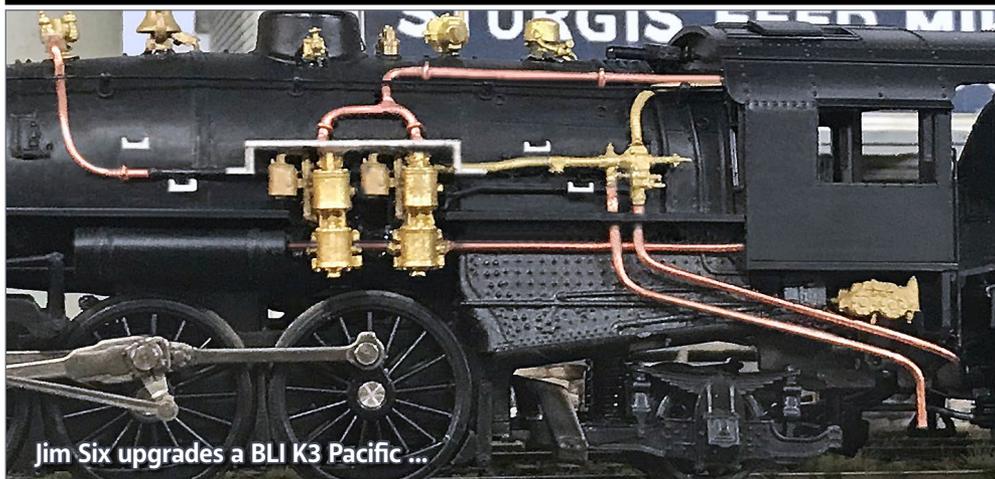
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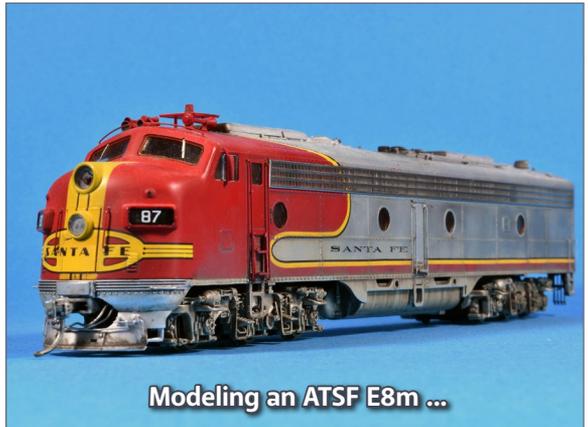
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