



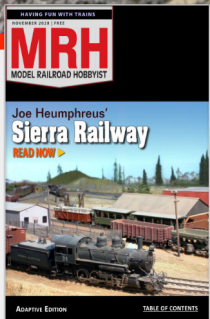
RUNNING EXTRA

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- ... and much more inside!

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Compiled by the MRH STAFF



November 2020 news and events

RICHARD BALE and JEFF SHULTZ



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PUBLISHER'S WELCOME

introduction



MRH Running Extra | November 2020

JOE FUGATE DISCOVERS AN INEXPENSIVE DRY BALLAST ADHESIVE ...



RATE THIS ARTICLE

SOME POSTS ON THE MRH FORUM DISCUSSED USING A DRY POWDERED ADHESIVE TO GLUE DOWN BALLAST. Unfortunately, the dry construction adhesive being suggested is pretty nasty stuff. The idea of mixing powdered adhesive with ballast seems clever, but I just wanted to find a safer (yet still affordable) dry adhesive.

I discovered my answer: dry denture adhesive powder! The stuff certainly should not be toxic (it's going in your mouth after all). After doing some searching, I found the best deal online: Superhold Denture Adhesive for as low as \$1.33 per ounce. One ounce should do about three feet of track when mixed five parts ballast to one part dry powder. See the shopping list link below for more.

I tried it to see if denture adhesive might work to glue ballast [1-4].

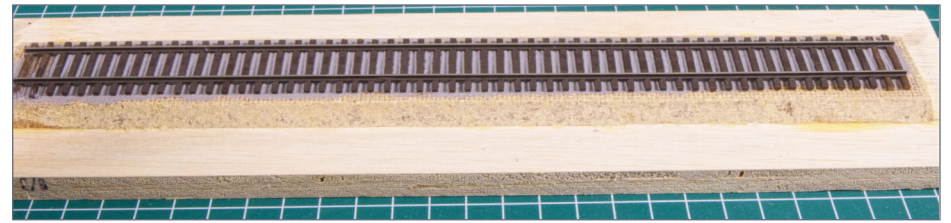
I don't like spraying my track because it gets the entire area wet, I prefer more control, so I made a wet water solution and used a pipette to wet the ballast [3]. I used a 3 oz plastic cup and filled it about a third full with water, then added ¼ teaspoon of Jet Dry to break the surface tension. I also added another third to the 3 oz cup with 70% isopropyl alcohol to make the water spread even better.

The dried ballast fixes in place firmly, but you can break it loose if you really try. For those who like to change their track around, ballast that's not too tough to take up could actually be an advantage.

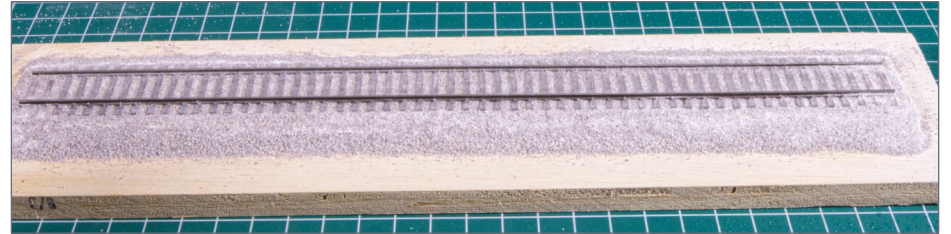
Also, this is a great mix for turnout ballasting: no more glued points! ☑

To get a shopping list for this article, visit the MRH website at this link: mrhmag.com/magazine/running-extra/2020-11/publishers-welcome

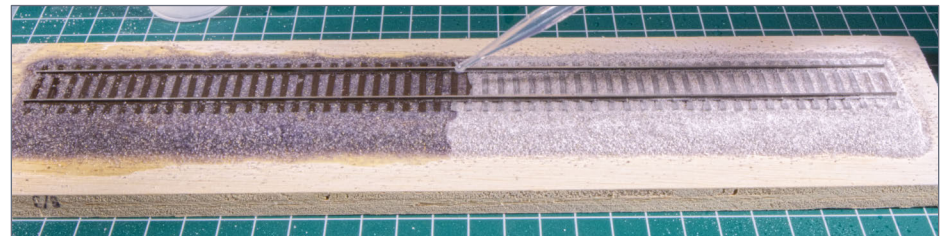
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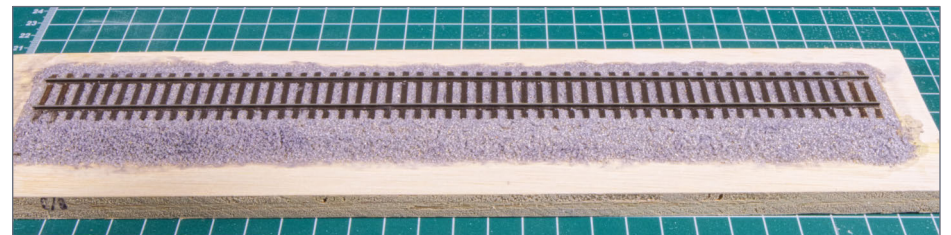
1. I started with this piece of flex track on some ballast profile board.



2. I mixed some gray stone ballast five parts ballast to one part powdered denture cement in a small cup, then spread the ballast mix out over the track like normal and carefully manicured it to remove all the grains from the ties or rail sides.



3. I applied a wet water mix (see text for formula) to the ballast using a pipette. The wet water spread nicely without disturbing the manicured ballast.



4. Here is the finished ballast after it dried, with the white color of the glue disappearing. The ballast stays in place firmly, but can be removed if you really try.



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THE LIMITED MODELER

column



Images are from the author's collection, except as noted.

MRH Running Extra | November 2020

JIM SIX FINDS MORE
INSPIRATION ...



RATE THIS ARTICLE

BEFORE DIGGING INTO THIS MONTH'S LOOK AT MONROEVILLE, Ohio, and how it might be modeled, I want to share a couple of photos that have me all fired up. The photos are by Bob Thomas, who frequents the *MRH* Forum. These two photos are exceptional.

In my mind the most important reason for the existence of *Model Railroad Hobbyist* and other model railroad publications is to inspire us. The published works drive us to get out of the armchair and to the workbench to build models or to work on the layout. These Bob Thomas photos [1, 2] are truly inspiring for me.

The Frisco 2-8-0 is a Bachmann Consolidation modified by Tom Holley with a doghouse tender and Frisco herald below the headlight. Sound was installed by Keith Robinson of Kansas City. All of the freight cars are Accurail kits. Each appears as realistic as most of us should ever hope for. The photos show you don't need to have \$40 ready-to-roll freight cars and brass steam locomotives to achieve a vintage look.

Bob's Frisco layout is set in the mid-to-late-1920s in southeast Kansas near the intersection of the Afton and Parsons Subdivi-



DOING MORE WITH LESS

THE LIMITED MODELER | 2

sions. His focus is on the "Weir-Pittsburg Coal Fields" which were experiencing boom years in the 1920s.

Who needs more realism than what is seen in these two Bob Thomas photos? Bob's scenery touches with grasses, weeds, trees, and the ballasted track perfectly depict the scene. I hope these photos inspire you as much as they do me.

MONROEVILLE, A TOWN YOU CAN MODEL

I no longer view large layouts as personally manageable. As I write this column, I just had my 72nd birthday, which kind of scares me. Age makes me a limited modeler as each day passes. Age limitations apply to all of us, whether we choose to accept it or not.

With the "Limited Modeler" I have been writing about either freight cars or a modellable location. I've looked at Sturgis,



1. A Frisco train rushes across the countryside on Bob Thomas' HO-scale 1920s era layout. The freight cars are Accurail kits Bob assembled and weathered. I added the smoke by copying it from a black-and-white prototype photo. Bob Thomas photo



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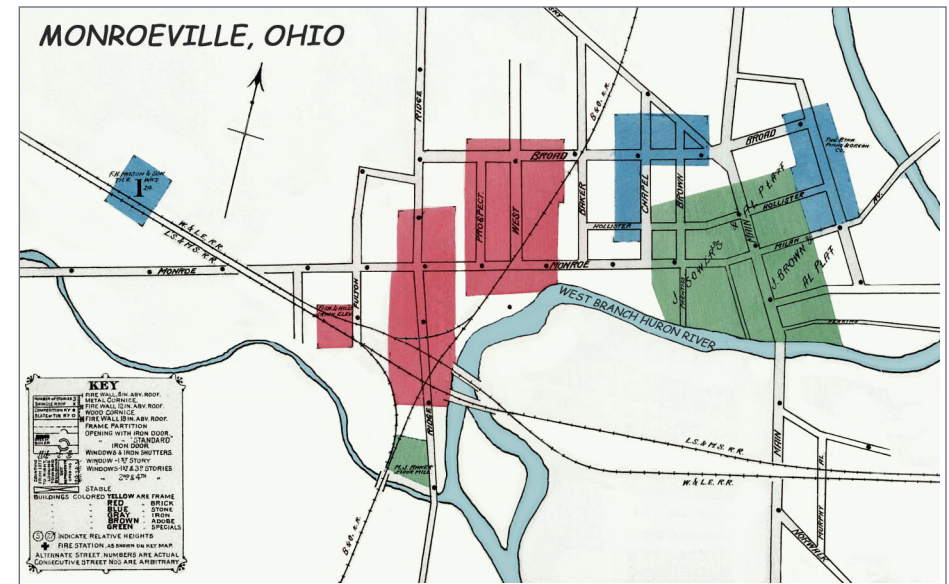
Michigan; Lorain, Ohio; and Clyde, Ohio. Sturgis and Lorain are too large for a bedroom-sized layout, but Clyde is small enough to be modeled in a limited space. This month I add Monroeville, Ohio, as another town small enough to be modeled in a bedroom [3]. I envision a space with the layout on three walls – one wall for the modeled town and the two flanking walls for staging.

There are several other towns along the old Lake Shore & Michigan Southern (LS&MS) we could review. Elyria, Oberlin, Kipton, Wakeman, Norwalk, Bellevue, Fremont, Lindsey, Gibsonburg, Genoa, and Millbury all had interesting elements to model. The Norwalk Branch connected with the NYC mainline at Elyria on the east end and Millbury (Toledo) at the west end.

Monroeville is at the intersection of the B&O, LS&MS/NYC, and the Wheeling & Lake Erie (W&LE). While the LS&MS/NYC and the W&LE parallel each other through town on east/west routes, the



2. The locomotive has passed the photographer with a westbound train heading through the countryside. Bob is a true master modeler of trains and layout scenery. Bob's freight car weathering is outstanding and not overdone. *Bob Thomas photo*



3. The 1899 Sanborn fire insurance index map shows all of Monroeville. While it was a small town, three railroads met here. The rail routes are seen easily but an index map does not show all the detail. *Sanborn Fire Insurance Company*

B&O was a north/south line [4] connecting the Ohio towns of Chicago Junction (which became Willard in 1917) with Sandusky on Lake Erie. Today only the W&LE line remains [8, 17]. The B&O and NYC rails are long gone [5].

The LS&MS and the W&LE routes ran parallel from Norwalk to Fremont. They crossed at the east side of Monroeville before passing over the Huron River. The B&O and NYC lines were busy branch lines while the W&LE was the mainline from Wheeling to Toledo.

The B&O connected with the Chicago mainline at Chicago Junction. Their branch ran north to Sandusky where the Cedar Point resort was located on Lake Erie. At one time the B&O ran passenger trains through Monroeville.

OPPORTUNITIES AND LIMITATIONS

My goal is to provide enough information and inspiration for you to make this rural location into a model railroad in a small space. You don't have to model the B&O, NYC, or the W&LE. With some adjustments, you could build a freelanced railroad based on Monroeville.

If your space is limited, you may consider building a shelf layout that will fit the room. You can use any number of walls



4. A Sandusky-bound B&O passenger train pulls into the depot at Monroeville at about lunchtime. The B&O shared its depot with the W&LE (crossing track). The tower in the background protected the crossing with the LS&MS. Note that the gentlemen awaiting the train are all dressed in suits with dress hats. The east end of the LS&MS depot is visible just to the right of the locomotive. Photo circa 1890s.

for the layout space. I like a three-wall layout in a small space. A middle wall could be the town with the flanking walls used for staging.

Due to space limitations you won't be able to model the entire town. That's a good thing, as most of the town had nothing to do with the railroads. If you focus on a railroad and lineside customers, you can build a narrow 12"-to-24"-wide wide shelf. Some supporting structures may be added, along with scenery. You can be creative and add buildings and scenery on the photo backdrop to add depth to the layout.

RAIL SERVICE

Though Monroeville was a small town, there were enough rail-served customers to justify a one-town model railroad representing either the B&O, the LS&MS/NYC, or the W&LE.



5. The same location as [4] seen today. The LS&MS depot is in the background. The B&O and LS&MS tracks have been gone for decades. *Google Maps*



I've reviewed the 1899 Sanborn fire insurance maps to determine local industries. Along the railroads, there were three grain elevators and feed mills, two flour mills, a tile manufacturer, and coal dealers, along with two freight houses and two depots. Many of these companies remained active to the Second World War. Steam era modelers rejoice!

Monroeville offers an opportunity for you to model any of the three railroads in town. The east/west LS&MS/NYC and W&LE



6. This circa-1910 photo was taken from the LS&MS crossing looking north along the B&O. All three railroads are visible in this scene – the LS&MS, the B&O, and the W&LE. The depot and freight station were B&O property, though both were shared with the W&LE. The depot's outhouse rest rooms are in the small building just this side of the depot. At the left is the Cottage Hotel and Restaurant.

can be modeled on a shelf layout. The LS&MS serviced a combination grain elevator with feed, coal dealership, and lumber. Immediately west of the grain elevator was a rail-served stockyard. The LS&MS had its own passenger station and a freight house to be switched. There was also a small yard and interchange with the B&O. Even though their lines ran closely through town, there wasn't an interchange between the LS&MS/NYC and W&LE.



7. This late-1960s photo is the same scene as [6]. Comparing these photos, the Cottage Hotel is gone but other structures remain. The foreground crossing track is the LS&MS/NYC line. The crossing track on the far side of the depot is the former NKP/W&LE line, which became N&W after 1964.



The W&LE shared passenger and freight stations with the B&O in Monroeville [6, 7]. The railroad also served Schneider Lumber, just west of the B&O crossing. A couple of blocks farther west was another grain elevator and coal dealer combo.

Modeling both lines offers a number of freight car spot locations at two grain elevators with coal dealers, a couple of lumber yards, two freight houses, and each railroad interchanged with the B&O. This is plenty of action for a small, one-town layout. It certainly would satisfy me.

The B&O line also offers interesting industries with their freight house, a flour mill, a wood handle manufacturer, and a grain elevator that also sold coal. Combine those industries with the two interchanges, and the B&O could also provide enough switching for a small, one-town layout.

PASSENGER SERVICE

Modeling an earlier era opens up passenger operations for all three railroads in Monroeville. The W&LE ended passenger service on the railroad in the late 1930s, but the B&O and NYC continued passenger service through Monroeville into the late 1950s.

The LS&MS line operated the most passenger trains through Monroeville, but this tapered off quickly during the Great Depression of the 1930s. The LS&MS route through town was busier before the 1916 consolidation into the New York Central Lines. From that point onward, traffic on the LS&MS Norwalk Branch tapered off until abandonment in 1976.

FADING SERVICE

Photos [6, 7] are inspiring to model this scene on a layout. However, photo [8] from Google Maps street view makes me sick. All the railroad structures are gone. The B&O right-of-way has no track and is overgrown with trees, bushes, and weeds. The

LS&MS right-of-way is now a bicycle trail. These lines have been gone since the late 1970s. Only the W&LE remains as a through route [8, 17].

The current W&LE serves only one modern grain elevator in town. There is little to no appeal for modeling Monroeville after the mid-1960s. Today, almost the entire LS&MS line from Elyria to Millbury (Toledo) is the North Coast Inland (bicycle) Trail.

B&O CUSTOMERS

Researching subjects to model is one of the most appealing aspects of the hobby for me. Research provides information to build a layout and model rolling stock. However, sometimes research can create questions that you may not have had when getting started [9, 10].

In [9], we have the Heyman Milling Company pictured against the west branch of the Huron River (the only river in Monroeville).



8. The same location as [6, 7] seen today from Google Maps. Only the W&LE track remains. The depot and all the other buildings are long gone. Did I hear you say you want to model the contemporary scene? [Google Maps](#)



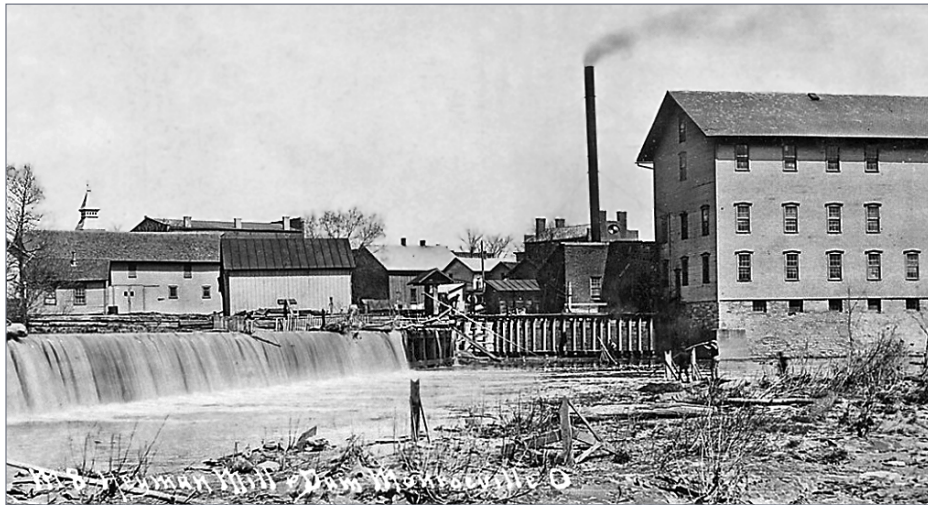
The map [10] locates Heyman on the north side of Monroe Street. The river is more than a block to the southwest of this location on the map.

I couldn't figure out how the photo and map could be accurate, as the details do not correlate. Then my friend Eric Hansmann pointed out a detail I missed on the Sanborn maps. Heyman Milling had two operations in Monroeville [11].

While the riverside Heyman complex looks cool, I would not want the challenge of modeling the river edge and the dam spillway. I'll stick to the rail-side operation. It's my layout, right?

LAKE SHORE & MICHIGAN SOUTHERN / NEW YORK CENTRAL

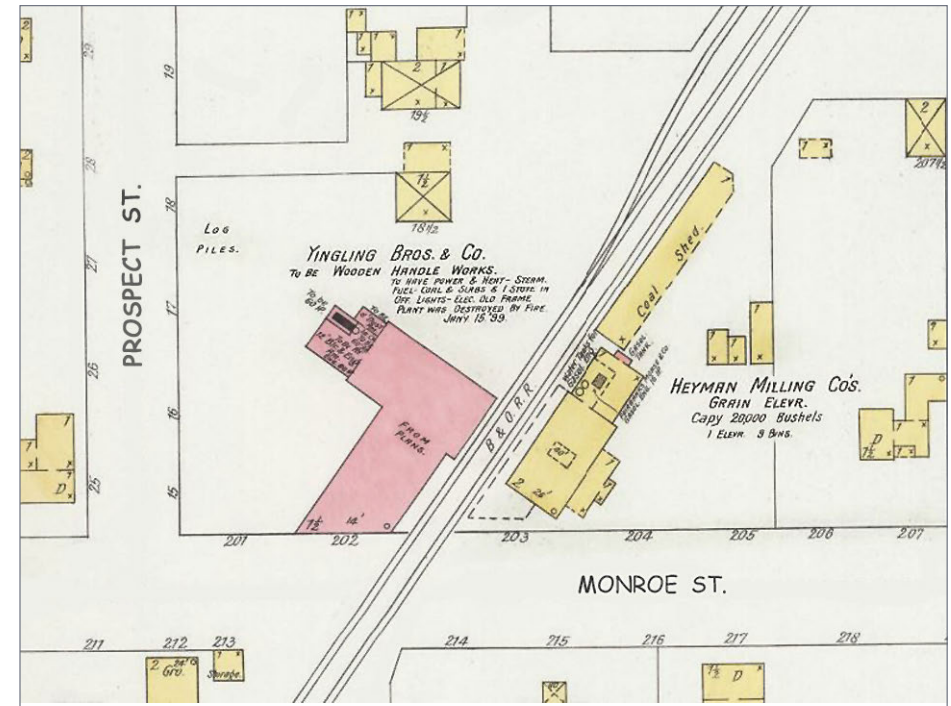
While the New York Central did not have as much to offer in Monroeville for the model railroader as did the Baltimore & Ohio, there was definitely enough to model for a small layout. It could



9. The Heyman Milling complex beside the Huron River is picturesque, but not rail-served. A second Heyman facility [10] is a few blocks away and served by the B&O.

also be one of several towns on a larger layout. It was a place for your passenger trains to stop and for the local freight to switch.

Most of what the LS&MS had to offer for a modeler is seen in [14] – the depot and water tower, the crossing control tower, Fish & Hills grain elevator, and you can barely see the LS&MS freight house in the distance. There was also a team track just this side of the elevator that was used to serve Schneider Lumber and other small companies without a siding.



10. Here is the setting north of the W&LE and LS&MS railroads from the 1899 Sanborn map. The B&O served the Yingling Bros. wood handle works and Heyman Milling. I have to wonder which of the tracks was the main track! Anybody have an idea how this was managed and operated by the railroad? *Sanborn Fire Insurance Company*

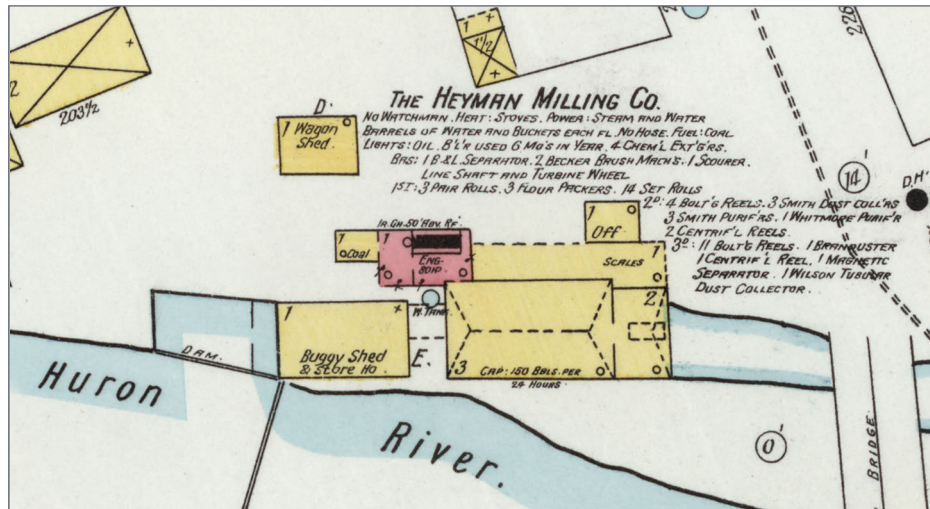


One last customer was the stock pens (not visible) on the far side of the elevator [16]. That's four places to pick up and spot cars. In addition, there was an interchange track with the B&O making a fifth place to switch.

MODELING THE LS&MS IN MONROEVILLE

This month I'm including a track plan [19] for Monroeville. This plan would work for most any year up to 1950. By that time on-line business was shifting to trucks. You could stretch this plan to 1960 but certainly no later than that.

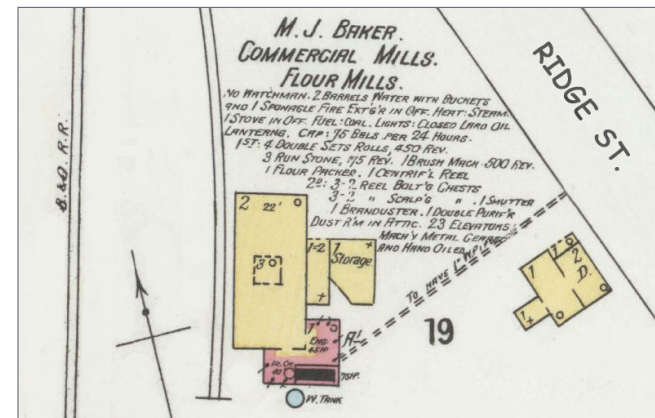
The plan can fit on one wall of a bedroom on a 24" shelf. Staging yards can be added on each flanking wall, leaving the fourth wall unused by the layout. Through trains can operate across the layout in both directions, allowing for passenger train service, which lasted into the 1950s. Through freight trains from Cleveland to the east and Toledo to the west can also be modeled.



11. Heyman Milling had two Monroeville facilities in 1899. This Sanborn map edit illustrates to the complex in [9], which was not rail-served. Sanborn Fire Insurance Company



12. Once upon a time this was the M.J. Baker elevator and mill. It was the southern-most B&O customer in Monroeville. The railroad was on the far side of these structures. Google Maps



13. The M.J. Baker mill is south of the LS&MS tracks and depot. The B&O has crossed Ridge St. as the railroad heads south to Chicago Jct. (Willard). Sanborn Fire Insurance Company

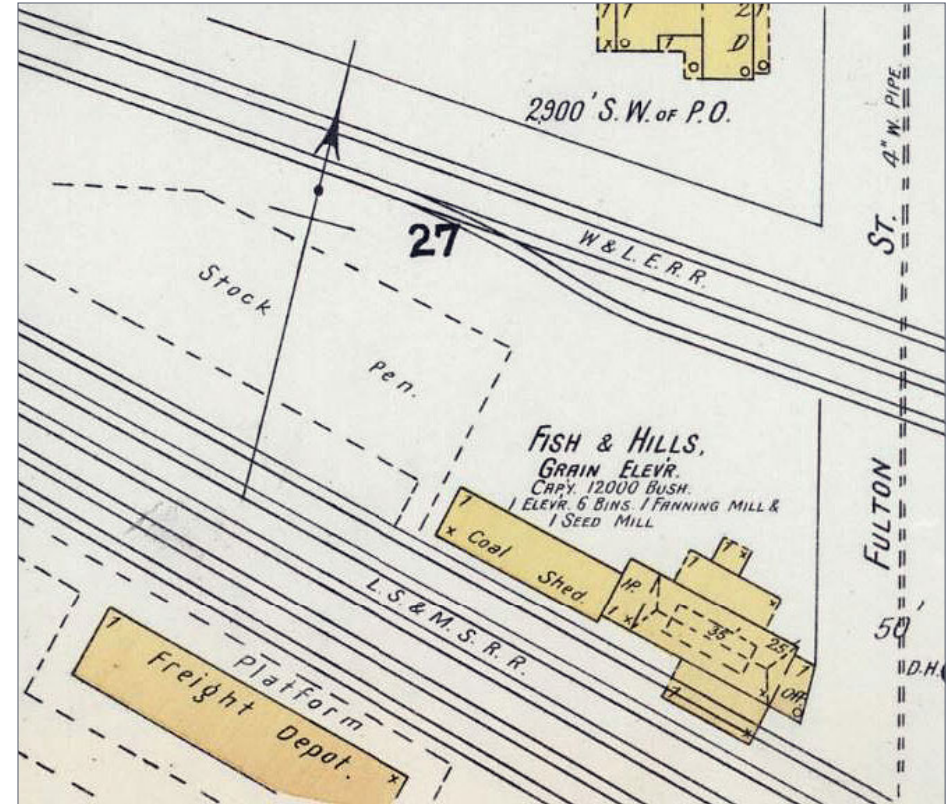




14. We are looking west across the Huron River bridge of the LS&MS in Monroeville, circa 1919. The B&O crosses where the man is standing in the center of the photo. An LS&MS interlocking tower is to the right.



15. This 1899 map shows that [14] was taken from the east end of the LS&MS steel bridge in the lower right corner. The LS&MS and W&LE crossed just off the map at the lower right. Water was pumped from the Huron River to the water tower for replenishing locomotives. *Sanborn Fire Insurance Company*



16. A stock pen to the west of Fish & Hills elevator was served by the LS&MS. The freight house was across the tracks. The Sanborn map indicates a few tracks here. The grain elevator details show a coal shed between the stock pen and the elevator. Stock cars, coal cars, and boxcars could be spotted along here for the pens and elevator. The siding extends across Fulton St. to become a team track for additional freight car spot locations. *Sanborn Fire Insurance Company*

★★★★★
RATE THIS ARTICLE



17. Here's the W&LE bridge in Monroeville in the Fall of 2011. The bridge shadow in the lower right is cast by the bicycle trail bridge that was the former LS&MS/NYC line. D&RGW tunnel motors were a nice capture!

This plan can be stretched or compressed to fit your room.

Switching the town with a local freight can be a lot of fun and last an hour or two. The siding on the north side of the tracks has the stock pen, coal shed, grain elevator, team track, and a lumber company all on the same siding. When arriving there would be cars on the siding to pick up or move and re-spot. You will have cars in your train that need to be switched onto the siding for the specific customer. This will keep you busy running around cuts of cars. This is my definition of layout fun and why I have a layout.

The siding on the south side of the tracks has the freight depot, team track area, and Heyman Oil that will need similar freight car jockeying. Then there is the B&O interchange track for more pickups and set outs. The switching can be complicated by passenger trains or other freight trains passing through town.

I'll leave the staging yard developments to you, but I recommend at least three tracks in each yard. This leaves room for two staged trains in each yard and a receiving track for incoming trains. The room corners flanking the modeled section can be sceniced to make

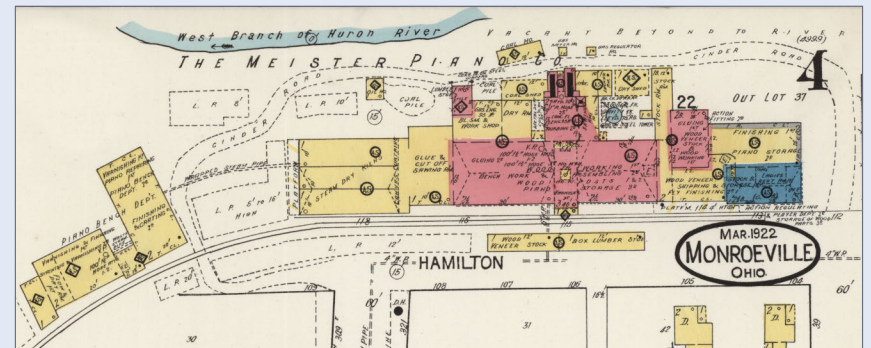
ONLINE MAPS

By Eric Hansmann

The Library of Congress offers thousands of online resources model railroaders can use to research communities. The Sanborn Fire Insurance Company documented structures in towns across the country for insurance purposes. Many maps can be reviewed and downloaded from the Library of Congress website.

Jim only had the 1899 Sanborn maps for Monroeville when he wrote his column. Since then, there were a few additions to the Monroeville maps. Documentation for 1911, 1922, and 1939 has been posted. Here's the link to the Monroeville, Ohio, maps.

www.loc.gov/collections/sanborn-maps/?fa=location:ohio%7Clocation:monroeville



18. The Meister Piano Company is not on the 1899 map but is in the upper right corner of this 1922 map. This customer was served by a long spur off of the B&O. Meister pianos were sold by the Rothschild and Company department store in Chicago. *Sanborn Fire Insurance Company*



ONLINE MAPS *CONTINUED...*

When researching a location, use as many references as you can find. You can plot community changes over the course of 40 years by reviewing a few Sanborn fire insurance maps. Some of the rail customers Jim features in this column were sold, and new names appeared on later maps. A couple of places expanded and the 1939 map shows one or two businesses were completely gone.

Keep in mind that Sanborn maps were created to document the structures for insurance purposes. Illustrations for specific rail sidings and tracks are not always reliable. It is best to combine details from ICC valuation maps and other sources to determine the railroad track geometry in the era of your interest.

The internet resources have been a boon for prototype modelers, but freelancers should consider these sources for industrial variety and business names. You don't have to model the specific industries of one town. You can pick the piano factory from Monroeville and combine it with a glass factory from West Virginia and a creamery from Pennsylvania for a freelanced town. ■

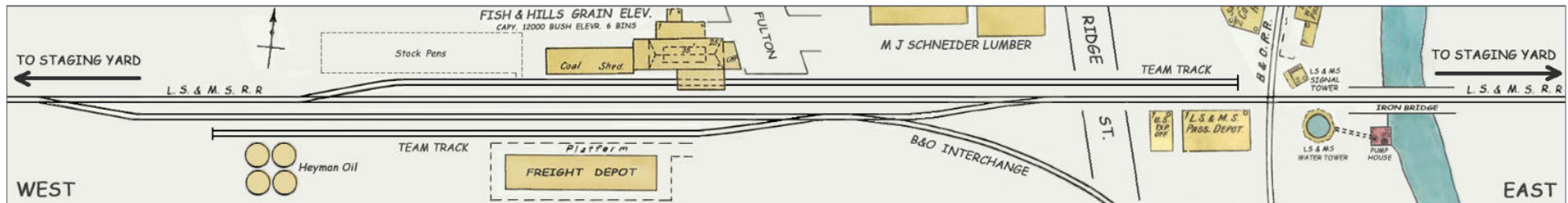
the layout appear larger than it is. That is how I would do the layout.

In closing, you can control the operating session time by the number of cars on the layout and the number of cars that need to be worked in town. You can operate by yourself or with a crew member. Two person crews are fun with one of you the engineer and the other the brakeman to handle coupling/uncoupling and throwing switches.

What do you think? Let's discuss this on the *MRH* Forum. ☑

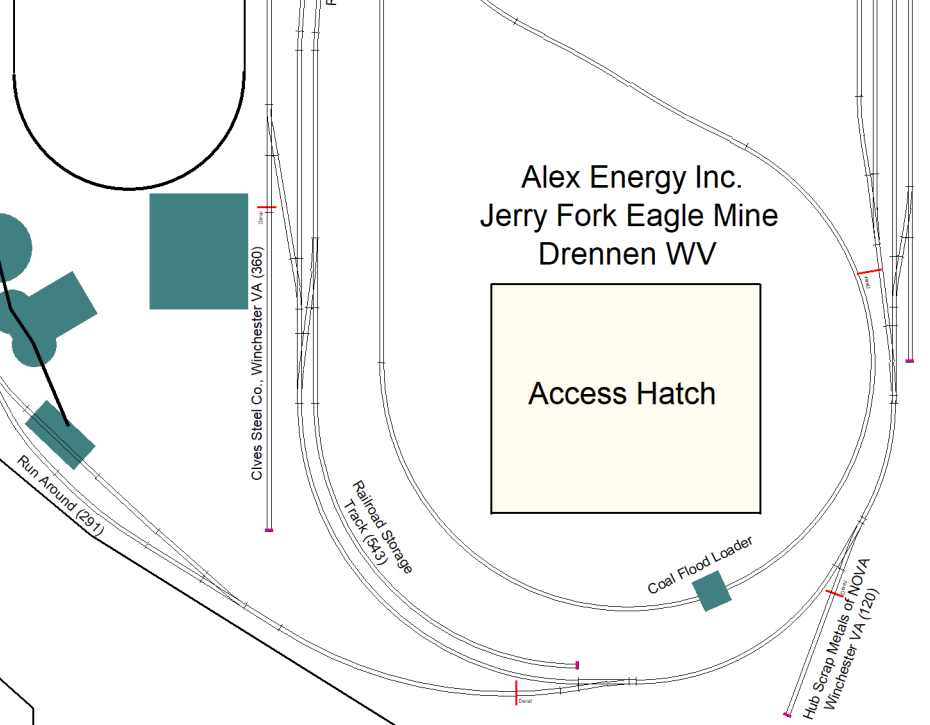
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19. Here's my track plan idea for modeling the LS&MS in Monroeville. It is based on the Sanborn maps with minor repositioning of the buildings to make it a manageable switching layout. I swapped the locations of the depot and Ridge St. from what is shown on the original Sanborn map. Each track is two lines, similar to the Sanborn map presentation.





Chesapeake Western and Kankakee

Part 2

★★★★★
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MRH Running Extra | November 2020

YARON BANDELL DESIGNS A LAYOUT FOR UNIT TRAINS IN 24'x24' – CONTINUED FROM LAST MONTH ...

LAST MONTH, I reviewed prototype elements and industries that inspire my layout dreams. This month, we dive into the layout design.

CHESAPEAKE WESTERN & KANKAKEE | 2

I've designed four decks of an HO scale layout for busy traffic levels: a Chesapeake Western (CHW) deck, a Kankakee deck, an upper valance deck, and a staging deck.

CHESAPEAKE WESTERN DECK

Last month I focused on the eastern end of the railroad and Rockingham County, Virginia, industries for the CHW deck [35]. Here's the summary of 17 industries starting at the helix exit.

- Package Company of America (receiver)
- R.R. Donnelley Printing (receiver)
- Virginia Rail Service (receiver, originator)
- US Cold Storage (receiver, originator)
- Cargill Feed Mill (Cargill FM) (receiver)
- AmeriGas Propane (receiver)
- S.L. Hess & Sons Fertilizer (receiver)
- Harrisonburg Yard
- R.S. Monger & Sons (receiver)
- Artisan Packaging (receiver)
- Skyline Post & Pole (originator)
- Cives Steel (receiver)
- VPGC Grain Elevator (receiver, originator)
- Hub Scrap Metal of NOVA (originator)
- Alex Energy Jerry Fork Eagle Mine (originator)
- VPGC Feed Mill (receiver)
- Carmeuse Limestone (originator)
- Miller Milling and New World Pasta (receiver)

Illustration numbers continue from last month's article.



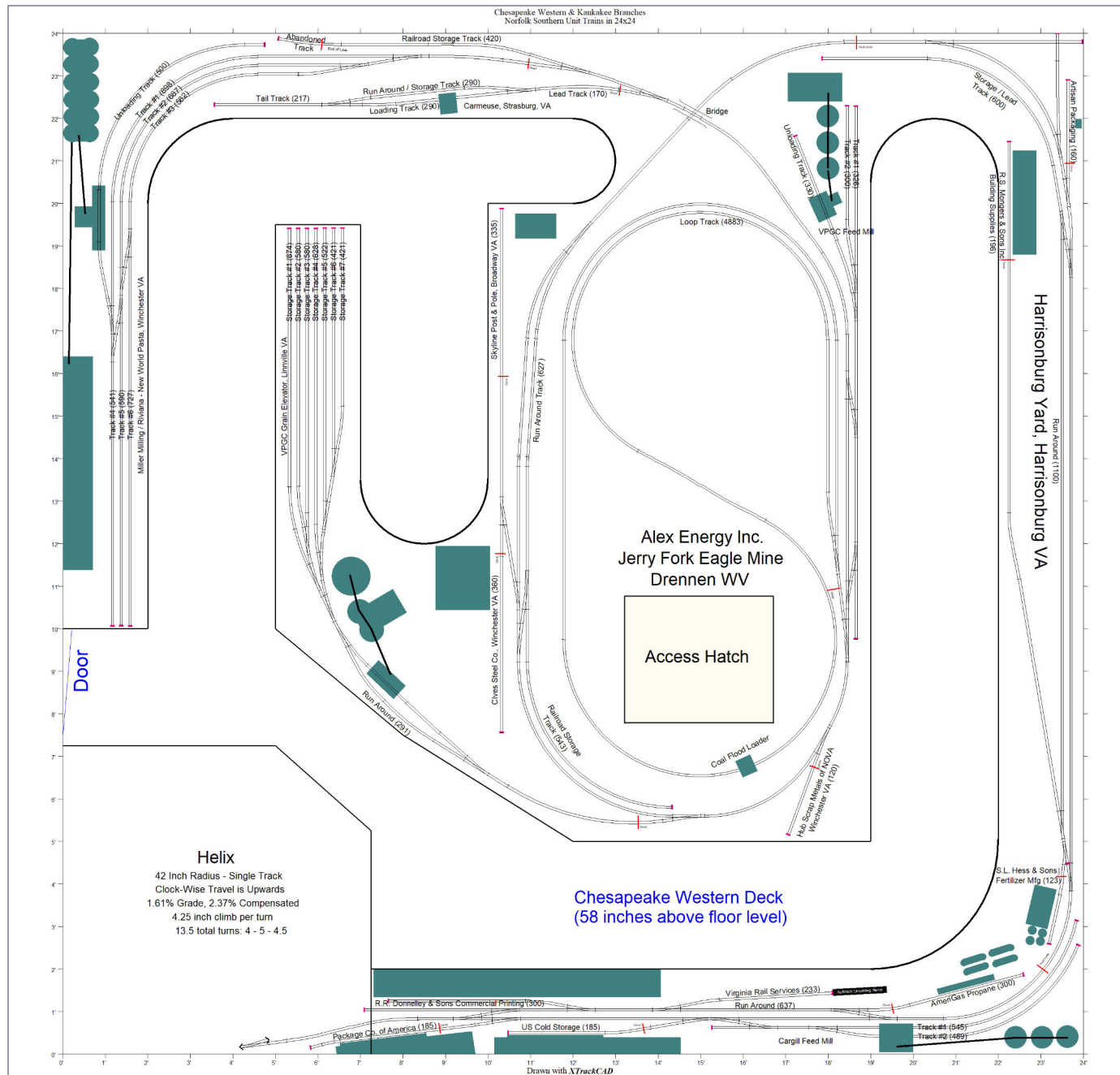
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KANKAKEE DECK INDUSTRIES

I took modeling liberties on my Kankakee branch line. Here are my reasons:

- I know my home area better than the Kankakee, Illinois area
- There aren't many smaller-sized industries on the Kankakee branch line
- I wanted to pair up most of my industries as originator and receiver pairs.

As Kankakee is in the Midwest with vast farming areas, there is a need for fences. A local fence post dealer could receive carloads from Skyline Post & Pole in Broadway, Virginia on the CHW deck. Power poles could also be shipped from Skyline to the local utility, ComEd.

A propane dealer is an easy addition. I've included rail service to Dibble Propane as a Kankakee fuel company.

Nutrien Ag Solutions [36] is a seed & fertilizer dealer located in Dwight, Illinois. Its location is west of the Consolidated Grain and Barge (CGB) facility and in the southeast corner of the UP and NS mainline crossing.

35. Chesapeake Western deck track plan. This level is 58" above the floor.



While the prototype isn't rail-served. I added Hancor Pipe to supply the region with a variety of plastic pipe products for irrigation drainage, grain drying, and culverts.

A team track was created for a variety of tractors, combines, and occasional wind turbine blade deliveries.

I moved the Associated Asphalt, Crown Cork & Seal, Rubbermaid and Kingspan industries from their eastern locale to the Kankakee branch line. They did not fit on the CHW deck.

On the Kankakee deck [37], starting at the helix exit and following the mainline counter-clockwise, I placed 13 industries and a yard:

- Kankakee Yard
- Farm Fence Solutions (receiver)
- Hancor Pipe Co. (receiver)
- Rubbermaid Commercial Products (receiver, originator)



36. Nutrien Ag Solutions, Dwight, Illinois, alongside the NS Kankakee branch line and a Union Pacific main line. *Google Maps*

- Kingspan Insulation (receiver)
- Dibble Propane (receiver)
- Crown Cork & Seal (receiver)
- Associated Asphalt (receiver)
- Team Track (receiver, originator)
- Marquis Energy (receiver, originator)
- ComEd (receiver)
- Nutrien Ag Solutions (receiver)
- FS Grain (originator)
- Hennepin Power & Energy (receiver)

STAGING

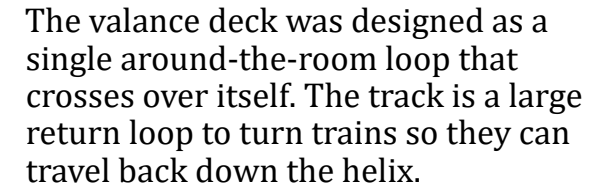
Below the Kankakee deck is the Shenandoah Yard staging deck, 20" above floor level [38]. A single-track mainline enters from the helix and leads to a 130-car capacity reversing loop under the center peninsula. The yard tracks parallel the mainline from the helix to the return loop.

There are six storage tracks, ranging from 40 to 60 car lengths. The longest yard track can be used to extend the return loop to roughly 200 cars. Three engine storage tracks allow storage of 14 locomotives. A long yard lead allows a switcher to move a unit train from one track to another without blocking the main.

UPPER VALANCE DECK

The fourth deck [39] is at valance height and depicts a single-track mainline with a large passing siding. On the NS prototype H-line, there is a long passing siding at the highest point of the line near control points Summit, Virginia and Vaughn, Virginia. The passing siding on the valance deck was designed for long unit trains to meet.



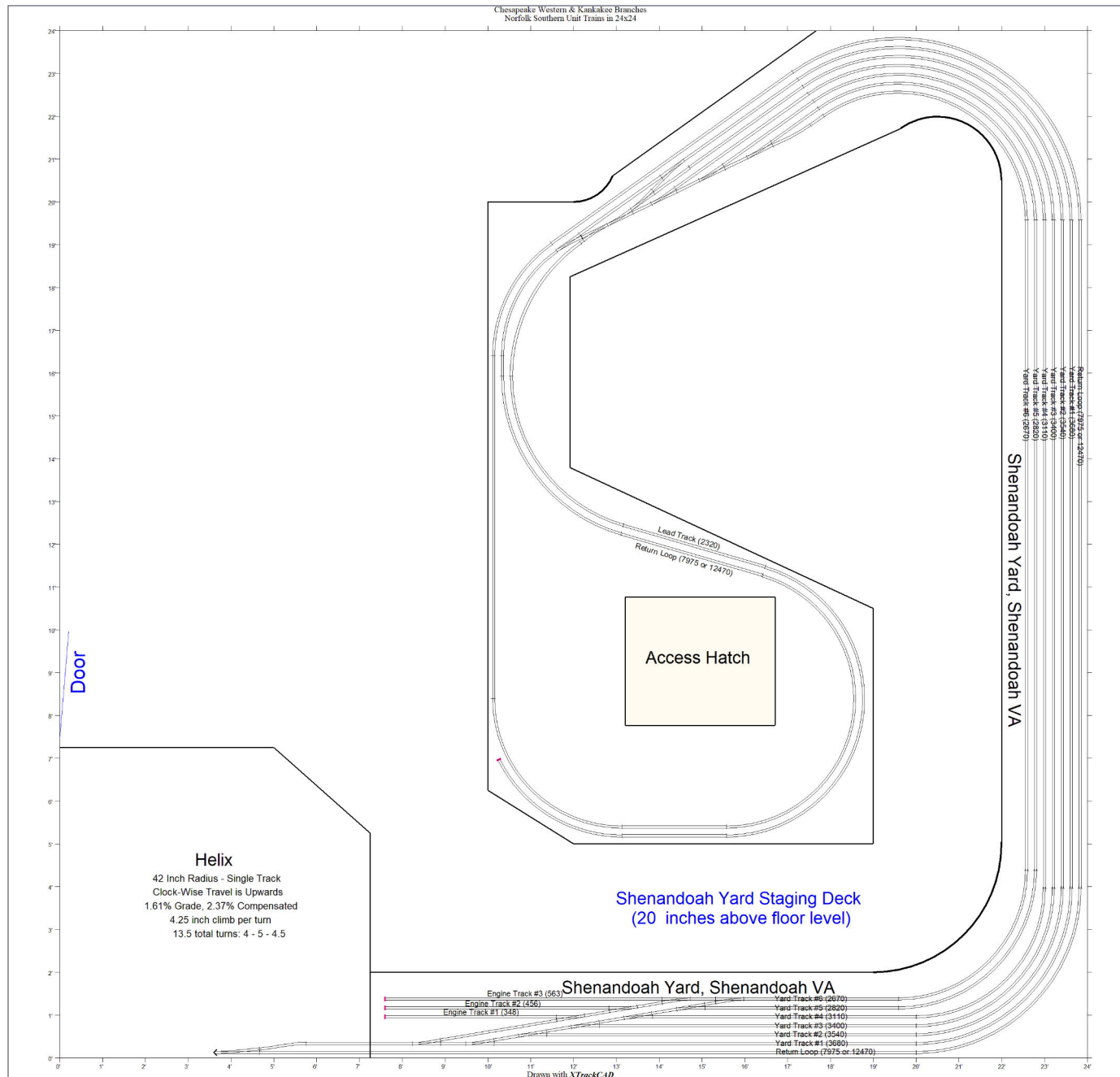


The track has a slight grade on this deck in order to cross over itself. The branch off the helix stays level at 75-1/2" until it passes under the Summit-Vaughn siding. A 2% grade begins once it clears the bridge and reaches 80" height at the start of the Summit-Vaughn siding. The track remains level at 80" height until it crosses over the door passageway and enters the helix.

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37. Kankakee deck track plan. This level is 37" above the floor.



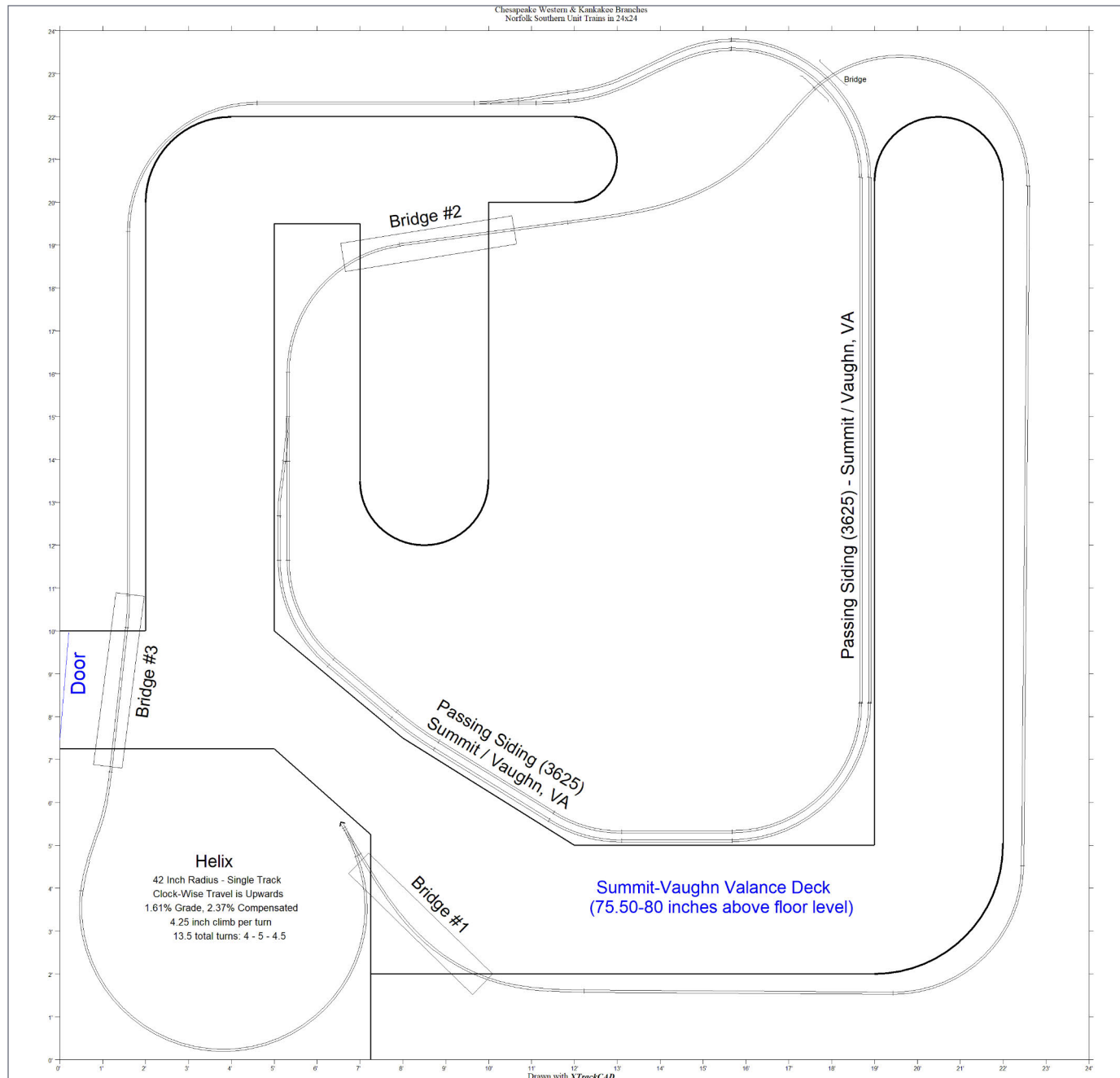
TRACK NEEDS

The layout plan uses 74 left-hand switches, 70 right-hand switches and nearly 1900' of flex track. Most of the switches are #6 but some are larger (#8 and #10). One is a #4 right-hand switch to serve an industry in Harrisonburg Yard. There are also two #4 wye switches and a 90-degree crossing.

High-resolution versions of the track plans and a copy of the XTrackCAD file are available as part of the downloadable bonus materials. ■

38. The Shenandoah Yard staging deck track plan, which is 20" above the floor.





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39. The upper valance deck or Summit-Vaughn deck track plan is located above the other decks.



INDUSTRY TRACKAGE DESIGN

I specifically designed the layout to allow switching operations within industries. Several industries have more than a few tracks branching off the main spur. These customers will use their own switcher locomotive or TrackMobile to move cars. Some may rely on the railroad to provide the switching services on contract. The switching frequency depends on the cost per move and the timing of car movements.

I've outlined a few industrial jobs in the following sections, describing the trackage design and car switching operations within the larger industries on the layout. These operations are tailored to the layout industries, not their real-world counterparts.

FS GRAIN TRACKAGE

On the Kankakee deck [37], FS Grain trackage is based around a loop track for unit train loading. On the outside of the loop I added two tracks for inbound (IB) and outbound (OB) car storage. Inside the loop are the empty-car holding tracks, a RIP track, and switcher storage.

Marquis Energy is one of FS Grain's customers with daily needs of eight or more loaded grain hoppers to make ethanol. A railroad local shuttles the loaded and empty cars between the FS Grain IB/OB tracks and the Marquis Energy facility tracks.

Unit trains are brought into the facility by a road crew and placed for loading. A loading crew takes over to move the unit train under the grain loader. Once the unit train has been loaded, a road crew takes over before departing. FS Grain loads up to two OB 35-car unit trains a week. Unit-train customers are Miller Milling and the VGPC Grain Elevator on the CHW.

Besides railroad power used to load the unit trains, FS Grain owns its own switcher to perform non-unit train moves.

MARQUIS ENERGY TRACKAGE

Marquis Energy is situated on the opposite side of the peninsula from FS Grain on the Kankakee deck. Marquis Energy receives empty ethanol unit trains which need to be stored in cuts on their storage tracks. Storage tracks are also used to store empty OB and loaded IB covered hoppers. Covered hoppers at this industry have two types of loads: IB grain loads from FS Grain and OB Dried Distillers Grains (DDG) to the VPGC and Cargill Feed Mills.

The facility is able to produce enough ethanol to create a loaded 35-car unit train every two weeks. A single ethanol tank car holds roughly 30,100 gallons of ethanol. Each bushel of grain (weighing roughly 60 lbs.) produces approximately 2.8 gallons of ethanol and 17 pounds of DDG. A covered hopper can contain roughly 3,600 bushels of grain or DDG. In

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order for 24/7 production, Marquis Energy needs to receive at least eight loaded grain hoppers and three empty DDG hoppers each day.

There are four tracks with loading spots. The first two loading tracks provide ethanol tank loading racks with a combined total of seven loading spots. The third track has a covered hopper unloading pit which can unload up to four bays of a single hopper at a time. This track can hold a cut of up to four covered hoppers. The fourth loading track is a single car spot for loading DDG into covered hoppers.

Marquis Energy has its own switcher for performing all loading and unloading moves.

VPGC GRAIN ELEVATOR (GE) TRACKAGE

The VPGC GE is located on the peninsula of the CHW deck. It has a total storage capacity of approximately 61 covered hopper cars spread across seven storage tracks.

There is a single track with a hopper loading and unloading installation. This track can hold a cut of up to seven covered hoppers.

Loaded unit trains consisting of 35 covered hoppers cars are brought in approximately every other week and stored in equal-sized cuts. While the industry unloads the unit train, the railroad parks the motive power nearby on the offsite railroad storage track.

Any remaining industry trackage is used to hold empty covered hoppers. Empty hoppers are loaded by the industry and picked up by the local for delivery to the VPGC and Cargill feed mills (FM) on the other side of the CHW.

The VPGC GE facility has its own switcher on site.

These are just a few of the industrial jobs on the layout.

HELIX

All four decks are connected by a 42" radius, single-track helix located in a corner of the layout room. The helix rises in a clockwise direction. Except on the valance deck, the mainline connects in a clockwise direction to the helix. This keeps the decks narrow at the helix entrance.

A side effect of the single-track clockwise-entry helix is all traffic must go upward. Trains have to go to the upper valance deck, pass control points Summit and Vaughn, before turning back into the helix counter-clockwise to go down. The only way to avoid this detour is to reverse your train while in the helix. This mainline movement is prototypical on the CHW.

In the helix, a tier separation of just over 4" is needed. Since Virginia Rail Service is serviced by double and triple deck auto racks, an AAR Plate J or even Plate K clearance profile for the helix is needed. For continuous running of an Intermodal hot shot, Plate H level clearance is needed. I settled on 4-1/4" of railhead-to-railhead separation in the helix.

The separation combined with a 42" radius of the helix results in a 1.61% grade. Since the grade is on a curve, we need to compensate the grade for the extra friction the curvature exerts on the train. Calculating the effective grade is done by taking the actual grade, and adding the result of dividing the

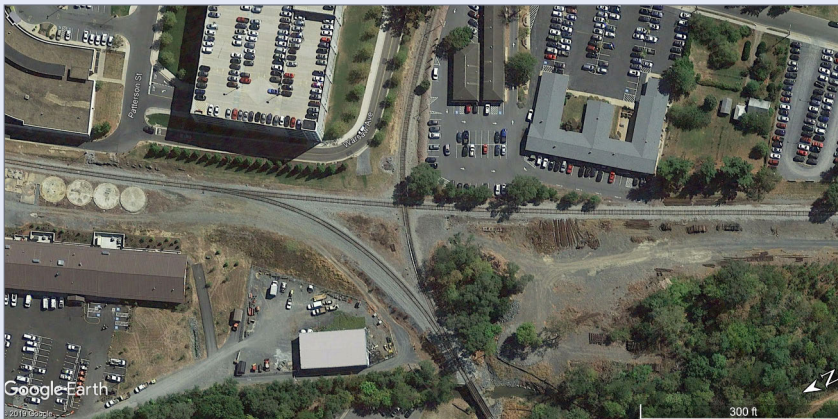
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TRAFFIC DIRECTION

On the prototype CHW, any train entering and leaving Harrisonburg, Virginia needs to reverse direction while in the middle of the city. This includes the grain unit trains. They block several grade crossings while doing this.

The reversing move is needed because one leg of the wye [40] was dismantled decades ago. The land was sold to James Madison University (JMU) to build a parking garage. The parking garage makes a great railfanning spot with views of the yard, but it makes access from Harrisonburg Yard to/from Elkton, Virginia a reversing move. This reversing move is why they run unit trains from Shenandoah Yard onto the CHW with power on both ends. ■

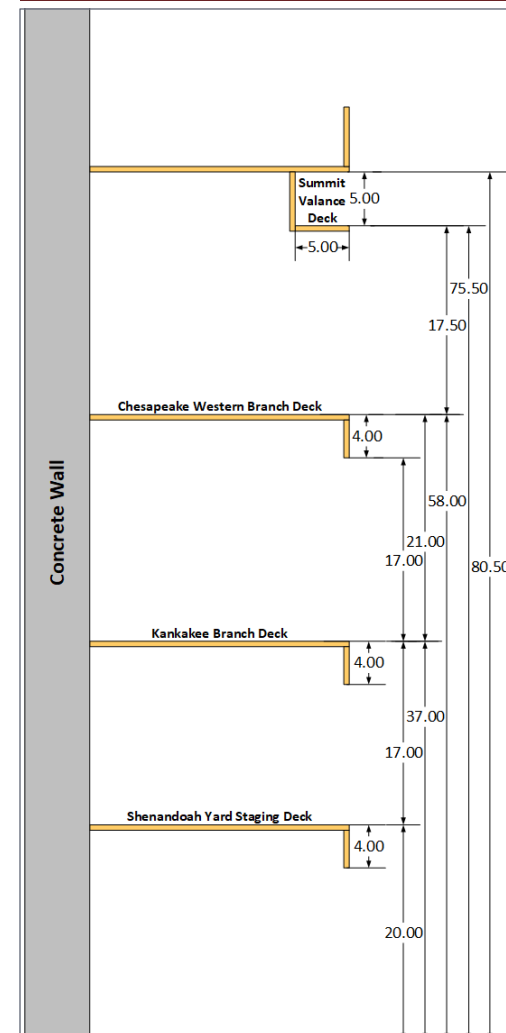


40. The Harrisonburg wye connects the CHW to the H-line in the east near Elkton just south of Shenandoah Yard. The Harrisonburg Yard is just north of the wye. As a result of the missing wye leg that is now Warsaw Ave, trains have to pass the diamond to the west and reverse direction to head north into the yard. *Google Maps*

constant 32, by the curve radius of 42". This results in an effective grade of around 2.37% for the helix. A 35-car unit train with four locomotives on point should have no issues conquering this grade.

Additional helix design details are available in a special download.

VALANCE DECK DESIGN



The valance deck was inspired by discussions on the *MRH* forum. Someone mentioned putting a staging area on top of the valance of a double deck layout, inspired by ceiling-level railways. I wondered if you could have track running room in the valance. The railway would be in a shallow view box at the front of the valance [41].

In order to see trains at a 75-1/2" deck height, track in the view box would need to be close to the front edge. A clear barrier of Lexan or Plexiglas would keep catastrophe at bay if there were a derailment.

41. The valance deck with view box located above the CHW, Kankakee, and staging decks.



The barrier could be attached with piano hinges at the valance bottom with a locking mechanism at the top to keep it in place. With hinges placed at the bottom, the barrier can always be opened safely after a derailment.

The view box contains a single-track mainline, similar to the NS H-line going up and down the Shenandoah Valley. The valance deck wouldn't have industries, only mainline running. A long passing siding in the middle of the deck allows for trains to meet.

The entire view box would be simply sceniced. Block signals, some grade crossings, and railroad ROW signage would add to the scenes.

The mainline crosses two aisles: one in the center peninsula, another over the doorway. Both crossings would be 3' wide bridge scenes. These bridges would provide 6'-4" to 6'-8" clearance for operators.

OPERATING PLAN

A layout track plan is nothing without an operating plan. Based on the operating plan, you can check if industries can be served and work as envisioned. Validation can be done by hand with just the track plan or with the help of track-planning software. With most track-planning software, you can create your envisioned trains and simulate running them on your layout. This feature makes it easier to visualize the length of spurs, check track arrangements and estimate job durations.

In my operating plan, trains are defined with a three-digit symbol with start and end points. The symbols used by NS denote if a train is loaded (even numbered) or empty (odd numbered). Where possible I used prototype NS symbols from the area for my trains [42].

Type	Symbol	Origin	Destination	Description
Unit	64T	Marquis Energy	Shenandoah Yard	Ethanol Loads
Unit	65T	Shenandoah Yard	Marquis Energy	Ethanol Empties
Unit	40T	FS Grain	VPGC GE	Grain Loads
Unit	41T	VPGC GE	FS Grain	Grain Empties
Unit	52T	FS Grain	Miller Milling	Grain Loads
Unit	53T	Miller Milling	FS Grain	Grain Empties
Unit	848	Alex Energy	Hennepin Power & Energy	Coal Loads
Unit	849	Hennepin Power & Energy	Alex Energy	Coal Empties
Manifest	15T	Shenandoah Yard	Kankakee Yard	
Manifest	18T	Kankakee Yard	Shenandoah Yard	
Local	V93	Shenandoah Yard	Harrisonburg Yard	West Industries
Local	V94	Harrisonburg Yard	Shenandoah Yard	East Industries
Local	B28	Kankakee Yard	Kankakee Yard	East industries
Switcher	B12	Kankakee Yard	Kankakee Yard	Yard Switcher
Local	B11	Kankakee Yard	Kankakee Yard	West Industries
Intermodal	201	Rutherford, PA	Rossville, TN	Through Train
Intermodal	202	Rossville, TN	Rutherford, PA	Through Train
Intermodal	226	Norfolk, VA	Harrisburg, PA	Through Train
Intermodal	227	Harrisburg, PA	Norfolk, VA	Through Train

42. The train symbols defined for the layout.

Industry Name		
IB	Inbound car/load description (train symbol if not local)	Frequency
OB	Outbound car/load description (train symbol if not local)	Frequency
IN	Industry switcher task	Frequency
SI	Special instructions	
Notes	Notes about industry	

43. Template of an industry's job background information.



INDIVIDUAL JOBS

With the train symbols defined, we can start hashing out what each job does. We could go into minute detail and describe each move, including what tracks are used, or we can generalize. I like to keep the descriptions general so the crews have the opportunity to make mistakes or find more efficient ways of switching a job. I simply list the industries to switch or trains to create in a yard. Here are a few examples.

V93 - Shenandoah Yard to Harrisonburg Yard (serving West Industries)

- Bring V93 and V94 cars and power from Shenandoah Yard to Harrisonburg Yard
- S.L. Hess & Sons
- AmeriGas Propane
- Virginia Rail Service
- R.R. Donnelley & Sons
- Packaging Corporation of America
- US Cold Storage
- Cargill FM

B11 - Kankakee Yard to Kankakee Industry West

- Dibble Propane
- Crown Cork & Seal
- Associated Asphalt
- Team Track
- Marquis Energy
- ComEd
- Nutrien Ag Solutions
- FS Grain
- Hennepin Power & Energy

B12 - Kankakee Yard Switcher

- Blocks cars for B11
- Blocks cars for B28
- Blocks cars for 15T
- Blocks cars for 18T

Several industries own their own equipment to move cars on their trackage. I created an equipment list for those locations:

Industry Switch Equipment

- VPGC GE (EMD SW1500)
- VPGC FM (44-tonner)
- Cargill FM (Trackmobile)
- Miller Milling / New World Pasta (44-tonner)
- Carmeuse (44-tonner)
- Rubbermaid Commercial Products (Trackmobile)
- Marquis Energy (EMD SW1500)
- Hennepin Power & Energy (44-tonner & Railroad power)
- FS Grain (EMD SW1500 & Railroad power)

MORE INFORMATION

Next, I compiled information on inbound (IB) and outbound (OB) loads at each industry using a job template [43]. This can define work for railroad crews, industry switcher crews (IN), and freight car traffic. Special instructions (SI) and notes are listed for each industry as well.

Not all industries receive daily loads. Many of the smaller industries are switched as needed. These industries have their IB and OB traffic dependent on the amount of business they do that day, week, or month. For example, the ComEd pole yard will stock replacement power poles in the weeks before tornado season starts with additional loads throughout the period. After tornado season is over, traffic volume tapers, with fewer IB to keep supplies in check.



My full industry background information is available as a special download. Using this info, I've been able to seed the XTrackCAD version of layout with cars and run trains. I know this layout will not appear any time soon, if ever, in my space. I hope this article inspires you to dream up an interesting layout with some help from Google and other resources.

Don't miss the special download extras for this article. The track plans, XTrackCAD file, helix details, and industry info are available to download through this link. ☒

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YARON BANDELL



Yaron grew up in the Netherlands, and has been into model trains since he was five years old. It started with LEGO trains and railfanning. It started with LEGO trains and railfanning. Also riding his bike to the nearby crossing of a double-track mainline sporting passenger and manifest trains, roughly every five minutes.

Things kicked into high gear when he received a Lima HO scale starter set at 12 years old while visiting a local model railroad club exhibition. This is also where he learned about modular model railroading. After joining the club, he was introduced to operations.

At 29 years old, he moved to the United States for his IT company. He got married, and trains went on the back burner. In 2011 he discovered Free-mo, and joined the Capitol Free-mo group, participating in the national Free-mo community. He is still happily married and has three teenage kids that have some interest in trains. ■





Operations from Below

MICHAEL ANTEAU SHOWS US A DAY IN THE
LIFE OPERATING HIS NICHOLAS & ASHLEY CREEK
RAILWAY...



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WHAT IS IT LIKE TO PARTICIPATE IN AN

OPERATING SESSION? Isn't it a lot of work, handling all that paper and following rules? Why would you want to do that? Doesn't that take the fun out of it? I often hear questions like these from friends and acquaintances when they visit my HO layout, and from model railroaders who have never participated in an operating session. For the beginner, operations can seem scary and overwhelming. There's a lot to learn it seems, and nobody wants to get it wrong or look foolish.

This article describes what it's like to run a typical train on the Nicholas & Ashley Creek Railway during a normal operating session. Instead of showing how it's all set up and all the behind-the-scenes preparation, I'll try to show operations from the viewpoint of the operator. Operations from below. Hopefully I can convey the fun of operations, answer some questions you might have, and encourage you to give it a try.

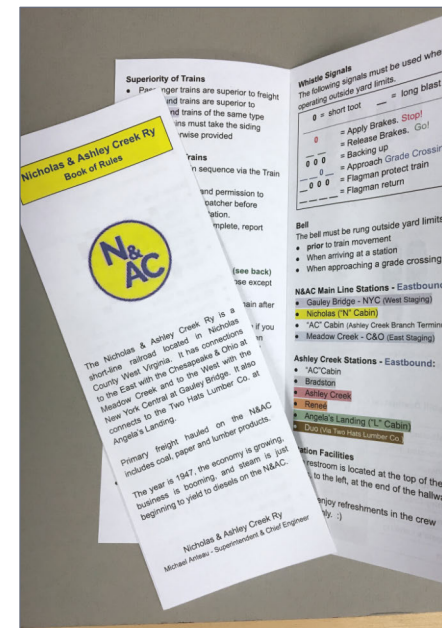
Let's Go!

Your evening begins with an orientation tour of the N&AC. I show you where all the major towns and yards are located. Along the way, I describe a bit about the story of the N&AC, and how it serves its customers. I also give you a copy of the N&AC Book of Rules to review. This contains basic rules such as all trains must have a caboose. It also has whistle signals you can use and tells you where the snacks and facilities are [1].

After orientation, you report to the dispatcher for your first train assignment of the evening: the Nicholas Local. This job will involve plenty of switching, which should be fun! The Dispatcher gives you a clipboard with a throttle, an engine

card for your locomotive, and a job card describing what the Nicholas Local does [2]. The job card says you will be taking the local from the yard, switching cars at five industries, and returning [4]. The locomotive card will help you find your assigned locomotive and acquaint you with its features. The throttle is already set to the DCC address for your engine [3].

You report to Nicholas Yard. The yardmaster informs you that your locomotive is waiting for you on the Ready Track and your cars are ready to go on Yard Track 1 [5]. Following the



1. The N&AC Book of Rules provides useful information about the layout, including its prototypical background, operating rules and procedures, and amenities provided by the host.

2. The dispatcher assigns each engineer to a train, issuing a clipboard, a throttle, a locomotive card, and a job card.

Engine Card, you turn on the headlight with F0 and give a short toot on the whistle with F3 to confirm your throttle is connected. With the yardmaster's clearance, you proceed to your train on Yard Track 1.

You find the stack of cards representing the Nicholas Local in the waybill box marked Yard 1 [6] You compare the car cards in the Nicholas Local stack with the cars on Track 1 to make sure they match. You also check that their waybill destinations



Road:	N&AC	Type:	2-6-0
Nmbr:	90	DCC:	90
Functions			
F0	Headlight		
F1	Bell		
F2	Whistle		
F3	Short Whistle		
F4	Steam Release		
F5			
F6			
F7	Light Dimmer		
F8	Mute		

Nicholas Local

Nicholas, WV

- Pick up train in Nicholas Yard
- Spot/Pick-Up cars at these Nicholas industries
 - Billings Bros Scrap
 - Clifford's Coal & Oil
 - Stock Pen
 - Putnam Brewing
 - C&O Freighthouse
- Train may be run in multiple sections

3. Each Locomotive Card provides a photo and description of the locomotive, including type, road number, and DCC address. I also like to chart the locomotive's light and sound functions for my visitors.

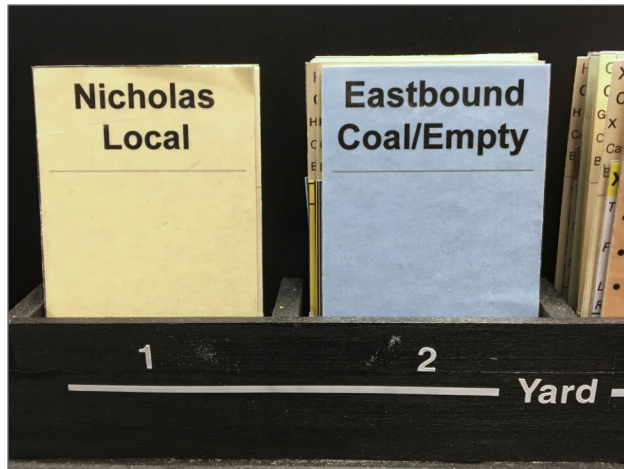
4. The job card shows that you pick up your train in Nicholas Yard. It lists the five industries the local serves before returning to the yard.



5. This 2-6-0 will pull the Nicholas Local. The yardmaster has it waiting for you on the Ready Track near the roundhouse.



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up the Nicholas Local, waiting on Track 1.

6. Each track in the yard has its own waybill box, with one card representing each car. The yellow Nicholas Local cover card denotes a stack of cards that represent the cut of cars that make



the top of the waybill helps the yardmaster sort the cars into the proper train at a glance and eases cross checking for the crews. Note: The waybills have four positions, but only the layout superintendent is authorized to change them.

7. Each car card lists the car type, road name, and car number. The cards also contain slots for waybills, which list the car's destination and lading. The yellow stripe at

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are for industries your train serves. Yellow stripes on the cards that match the yellow color of the job card help make this step easier. Everything looks good so far [7]. The book of rules states that every train must have a caboose, so you proceed to the caboose track to fetch number 90768, an old wood-sheathed car normally used by the local [8].

Now with the caboose in tow, you proceed to the yard and into Track 1. You do one final inspection of the cars and notice that they aren't in the best order for placement at the industries the local serves [9]. You could take care of this when you get to the customer, but that would require more moves at destination. Fortunately, the yard isn't too busy right now, and the yardmaster gives you clearance to shuffle the cars into a better order using the Departure Track [10]. A quick uncouple and a



8. C&O 90768 is the usual caboose assigned to the Nicholas Local. The conductor has arranged everything inside to his liking and considers it "his" caboose!



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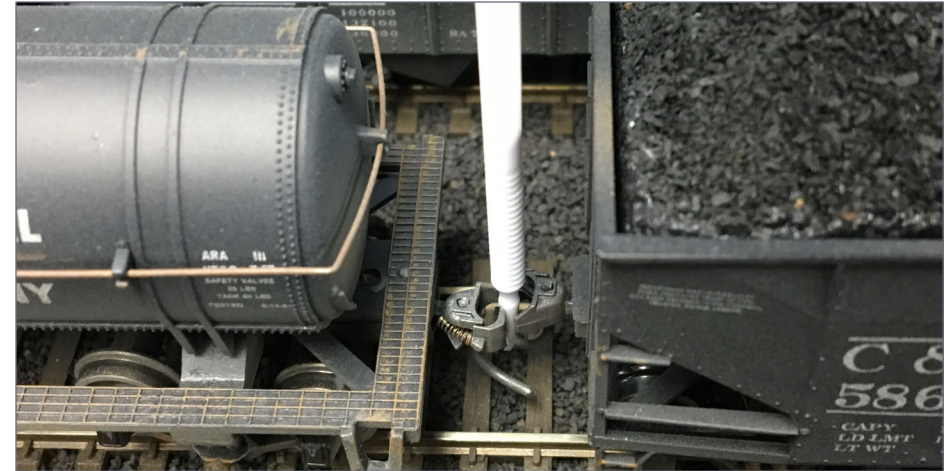


9. The cars of your train were not made up in proper order. For the delivery to Clifford's coal, you need to switch the positions of the oil

tanker and the coal hopper.



10. The yard master has given you permission to sort your cars in the yard. You unhitch the tank car and set it aside on the Departure track. Next move will be to unhitch the coal hopper, bump it onto the tank car, and then move the two back to Track 1 to couple to the gondola.



11. An uncoupling tool makes separating cars for sorting and delivery a cinch. I distribute uncoupling tools around the layout in places where they will be needed.



12. All industries you will be serving have facing-point turnouts, so you place the locomotive at the rear of the local to shove, rather than pull, your train. Note that the caboose is at the rear of the train's direction of travel, not on the other end from the locomotive.

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couple of moves later, you have the cars in proper order for switching. The uncoupling tool is very handy for this task, and there are several scattered around the layout on the card sorting shelves. The red handles make them easy to find [11].

Turnouts at each industry you will be switching today are facing-point, meaning that if your locomotive is at the front of the train, you will have to run around the train for every setout to shove cars into the sidings. You decide it would be more convenient to shove the train all the way, so you use the runaround track to place your engine at the rear of the train before you leave the yard. You couple your caboose next to the



13. Your first delivery is Clifford's Coal and Oil. You not only have to deliver the cars, but make sure they are spotted properly for unloading.

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14. You spot the tanker at Clifford's so the spigots on the platform align with the car's drain. Scenery cues such as these help engineers spot their cars.

engine. The caboose is at the rear of train's direction of travel, but not on the end opposite the locomotive. This is acceptable practice on the N&AC and is common with local switching jobs [12]. Everything is ready to go. The yardmaster aligns the switches and gives you the all clear. You give a couple of long toots on the whistle—the signal for Release Brakes and Proceed, according to the book of rules—and head out of the yard.

Your first stop in Nicholas is at Clifford's Coal & Oil. According to the cards, You have two cars to set out at Clifford's. You need to spot a coal hopper on the dump trestle and an oil tanker at the oil unloading platform (13). This requires separating the cars so that they are spaced just right to align with the scene (14). There are no cars to pick up or move from off site, so it's



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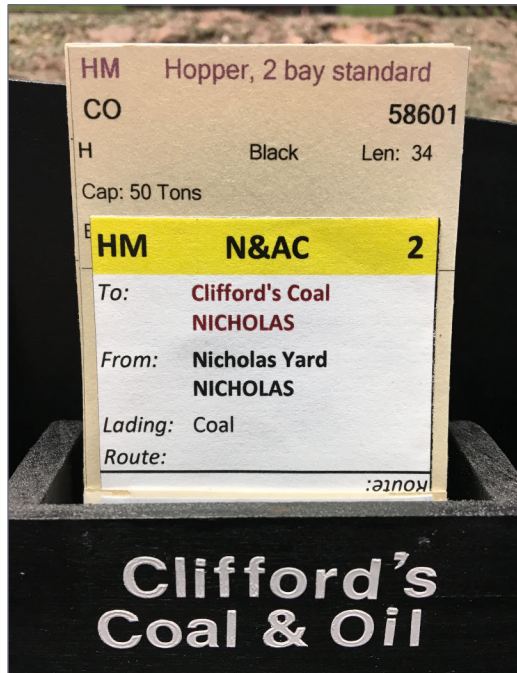
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a simple drop. You spot the cars and place the associated car cards into the bill box for Clifford's [15].

Next up is Billings Brothers Scrap Yard. You have one gondola to set out for loading. You spot the car and file the car's card in the industry's bill box to complete the job [16]. This job completes the setouts, and your train is down to a locomotive and caboose for now.

None of the industries you have switched so far had any outgoing cars, but other industries in Nicholas might. Before departing the scrap yard, you consult the industry list on your job card and check the bill boxes on the layout for the three remaining industries on the list. All three have loaded cars for pick up, so you won't be returning light to the yard today [17]. The track arrangement in Nicholas is very efficient, and you quickly pick up cars from the C&O Freight House, Cattle Pen,



15. Each industry has a waybill box. Delivery begins by checking the box for cards representing cars to pick up, to shuffle offsite, or to leave in place. Filing the cards for setouts is the final step for completing the delivery.

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16. Billing Brothers Scrap Yard is next, with a single empty gondola to set out.



17. The waybill boxes for each of the remaining industries on your train's route have cards representing cars that you need to pick up.



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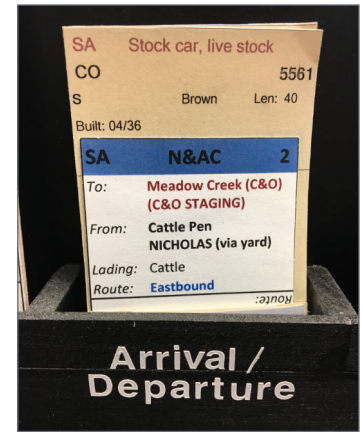
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and Putnam Brewing Co. [18a, b, c]. With the pickups now complete and the corresponding cards gathered and stacked on your clipboard, you're ready to head back to the Nicholas Yard.



18a, b, c. Today's pickups include a boxcar of lumber at the C&O Freight House (Top), a loaded cattle car from the stock pen (bottom left), and a reefer full of beer from Putnam Brewing (bottom right.)

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19. You leave the incoming cars on the ladder track and the train's cards in the Arrival/Departure box.

Things are a bit busier at Nicholas Yard as your train approaches. The Arrival/Departure track is occupied, and the yardmaster's Alco is tied up on Track 4. He tells you to leave your incoming cars on the ladder track, which will make his work easier and allow you to finish quicker. You spot the cars on the ladder and drop the car cards in the Arrival/Departure box [19]. You're almost done! All that remains is to return your caboose to the caboose track [20].

With the caboose put away, you head back to the roundhouse to return your locomotive. You stop briefly to dump ash from your locomotive's ash pan [21]. Then it's off to take a ride on the turntable, placing your locomotive in roundhouse stall 4, per the yardmaster's instructions [22]. You return your clipboard and throttle to the dispatcher and head to the crew lounge for soda and cookies before your next job! ✓



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20. Putting your caboose away is the last step of returning your train to the yard for classification.



21. An added interest point on my layout is an ash dump area, where engineers can pause to clean out their locomotives' ash pans at the end of a job.



22. Job's finished! Time to take a spin on the turntable, park the locomotive in the roundhouse, and hit the crew lounge.

MICHAEL ANTEAU



Michael Anteau comes from a railroading family. His grandfather was an engineer for the C&O, and his father was an engineer for CSX.

Michael was first bitten by the model railroad bug watching his dad's Lionel trains, and he built his first 4x8 layout at age 10. Michael is now working on his dream layout, a prototype-freelanced coal-hauling railroad set in transition-era West Virginia.

Michael lives in Northwest Ohio and works in information technology. He is married and has two grown children. When he is not working on the Nicholas & Ashley Creek Railway, Michael enjoys playing piano, biking, hiking, and traveling. ■

Car weighting ranks as probably one of the more controversial topics in the hobby. Some insist on making cars lighter to improve the ability of locos, especially steamers, to pull more cars.

Others like Mike Confalone advocate overweighting cars to add a more realistic sense of mass to your trains.

So which is it? Make stuff too heavy and your locos won't be able to pull a reasonable-sized train up a grade. Make the cars too light and things will go on the ground at the slightest bump.

Let's add some helpful insights to this discussion so we can make the most informed decision possible when it comes to weighting our rolling stock.

START WITH THE NMRA WEIGHT STANDARD

Let's start the car weighting discussion with the NMRA rolling stock weight recommendations, *RP-20.1 Car Weight*. The RP means recommended practice so this is optional but strongly advised. A lot of testing in the 1950s went into developing this RP, and because it's not just arbitrary, this is a good place to begin.

Some argue NMRA RP20.1 is obsolete given today's better car rolling performance. They have a good point so let's deal with that a bit later.

1. NMRA RP-20.1, the recommended practices on car weight.

SCALE	INITIAL WEIGHT (ounces)	+	ADDITIONAL WEIGHT per inch of car body length (Ounces)
O	5.0	+	1
On3	1.5	+	3/4
S	2.0	+	1/2
Sn3	1.0	+	1/2
HO	1.0	+	1/2
HOn3	0.8	+	3/8
TT	0.8	+	3/8
N	0.5	+	0.15



the Great Weight DEBATE

★★★★★
RATE THIS ARTICLE

MRH Running Extra | November 2020

JOE FUGATE ASKS, "WHERE IS THE ROLLING STOCK WEIGHTING SWEET SPOT?"

WE'VE SEEN IT ON THE MODEL RAILROAD FORUMS: "the NMRA weight standard is obsolete." Then on other forum threads, we see the contention that our trains need *more* than the NMRA weight if we want better rolling realism.



J. Fugate

WHERE YOU CAN LEARN MORE

Much of this article comes from my [Run like a Dream: Rolling Stock](#) book which you can get from the MRH Store: it is full of insights like this article.

Rather than just reprint the chapter on weighting, however, I've expanded and updated the discussion here with the latest findings. I bypass using low-melting point metals because using tungsten powder and tungsten shot for weighting are superior.

The tungsten mix is more dense, it's less toxic, you won't risk getting burned, and it's not as expensive either. A total win-win for tungsten-based car weighting methods. ■

But for now, let's look at RP-20.1 and how to apply it.

Looking at RP20.1 [1] we can see for an HO standard gauge car, the recommendation is 1 ounce, plus 1/2 ounce per inch of car body length. For an HO forty foot car (often such a car actually has a 42 foot car body and is 5.79" long), the NMRA weight should be: $1 + (5.79 \times 0.5)$, or 3.893 ounces.

To make things easy, let's round to just one decimal point and say 3.9 ounces [2].

Do note, we determine car weight strictly by the main body length alone – we ignore the couplers or any details that protrude from the main body like the brake wheel platform.

MAKING CARS LIGHTER THAN NMRA RP-20.1

Some contend that the NMRA weight recommendations made in the 1950s are somewhat outdated now that cars perform better on average than they did 60 years ago when these standards were made.

NEM recommended car weight (NEM 302)

Scale	Ratio	Weight (g/mm)	(oz/in)
II / F / G	1:22.5	4.00	3.60
1-Gauge	1:32	2.00	1.80
O	1:48	1.00	0.90
S	1:64	0.60	0.54
HO	1:87	0.40	0.36
TT	1:120	0.25	0.23
N	1:160	0.17	0.15
Z	1:220	0.12	0.11

2. NEM 302, the recommended practices on car weight by the Normal European Modelling standards organization.

In fact, our friends across the pond in Europe have their own weight recommendations too as part of the Normal European Modelling standards organization. The NEM recommended weight gives cars that are somewhat lighter than what the NMRA weight standards give.

In HO, for example, the NEM 302 standard [2] gives car weights that run about 1.9 - 2 ounces lighter than the NMRA recommendations, depending on car length.

Lest we overlook them, the Australian Model Railway Association (AMRA) also has weight recommendations: one for freight cars and another for passenger cars. In HO, the AMRA freight recommendation runs about 1 oz lighter than the NMRA guideline, while the suggested passenger car standard matches the NEM 302 car weight recommendation.

Putting this all together side-by-side in a chart [3], we can directly compare the three weight guidelines. It's clear the European and Australian modelers have elected to go with lighter weight cars than the North American modelers who follow the NMRA RP-20.1 car weight.



THE GREAT WEIGHT DEBATE | 5

Nominal length (ft)	Typical body length (ft)	Body length (in)	NMRA RP20.1 weight	AMRA Freight Weight	NEM weight
35	37	5.10	3.5	2.5	1.8
40	42	5.79	3.9	2.9	2.1
45	46	6.34	4.2	3.1	2.3
50	51	7.03	4.5	3.4	2.5
55	56	7.72	4.9	3.8	2.8
60	62	8.54	5.3	4.2	3.0
65	66	9.09	5.5	4.5	3.3
70	72	9.92	6.0	4.9	3.5
75	77	10.61	6.3	5.2	3.8
80	82	11.30	6.6	5.6	4.0
85	86	11.85	6.9	5.8	4.2
90	89	12.26	7.1	6.0	4.4

3. Many cars have a nominal length such as 40-foot but the actual main car body length may be a bit more. This chart uses typical common HO car body lengths in inches and converts to the NMRA, the AMRA (Australian Model Railway Association) and the NEM (Norms of European Model Railway) weighting standards. The AMRA weight has both freight weight and passenger weight standards. The AMRA lighter passenger standard matches the NEM car weight standard for all cars. The NEM does not differentiate passenger vs. freight cars.

The La Mesa club adjustments: I think it's also helpful to look at what is arguably the largest long-standing model railroading club in the US, the La Mesa club of San Diego. They have very well developed equipment standards that have been field-tested now for decades.

The La Mesa club's large HO layout reliably runs long trains up stiff grades daily for the public, who visit the Balboa Park Museum to see their layout. Talk about the ultimate stress test of standards!

THE GREAT WEIGHT DEBATE | 6

The club starts with the NMRA RP-20.1 weight, but they adjust it down based on how the car performs. They test all cars for rollability down a 2% grade and they further do a tip test with a protractor. Depending on what they find, they adjust the car weight down from the NMRA RP-20.1 recommendation as follows:

- If the car rolls down a grade less than 2%, subtract 1/2 oz for every half percent below 2%.
- If the car tips past 30 degrees off vertical and self uprights, subtract 1/4 oz for every 5 degrees past 30 degrees.

So if the car is a typical good-performing modern car, it will roll just fine down a 1% grade without any coaxing, so that's minus 1 oz there. Some very free-rolling cars will even roll down a half percent grade, giving us 1.5 oz off the guideline.

As to the tilt test, if the car maxes out at 40 degrees tilt and self-corrects back to upright, that's another 0.5 oz off. The resulting weight adjustment is essentially 2 ounces off, or virtually the same as the NEM 302 guidelines (or the AMRA passenger car guideline).

One good approach (it's been extensively field-tested after all) is to start with the NMRA weight and adjust it down based on how the car performs using the La Mesa adjustments [4].

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Scale	ROLLABILITY Below 2% - subtract each 0.5%		TIPABILITY Beyond 30° - subtract each 5°	
	ounces	grams	ounces	grams
II / F / G	5.00	140	2.50	70
1-Gauge	2.50	70	1.25	35
O	1.25	35	0.65	20
S	0.75	20	0.40	10
HO	0.50	15	0.25	8
TT	0.30	9	0.15	4
N	0.20	6	0.10	3
Z	0.15	4	0.08	2

4. Building on the La Mesa club's adjustments in HO, this table extrapolates to the other scales using ratios determined from the NEM weight recommendations for all the major scales. Start with the NMRA RP-20.1 weight, and factor the weight down based on how well the car performs. This tends to equalize overall car performance and set the car weight to help keep poorer-performing cars on the track better.

You can find an online weight calculator for all three of the car weight guidelines, NMRA, AMRA, and NEM, at this web URL:

www.trainspotted.com/model-railroad/calculator

One last note: NMRA RP-20.1 has no weight recommendation for Z scale, while the AMRA and NEM do have a Z weight recommendation. For Z scale, approximate the NMRA value by using 70% of the NMRA values for N scale – in other words, use 0.35 oz initial + 0.10 oz per inch.

THE CASE FOR OVERWEIGHTING CARS

While a good case can be made for weighting cars somewhat lighter than the NMRA guideline, recently respected modelers

like Mike Confalone [5] have started to advocate deliberately overweighting your cars. Ordinarily, I would quickly dismiss such a suggestion as out of touch.

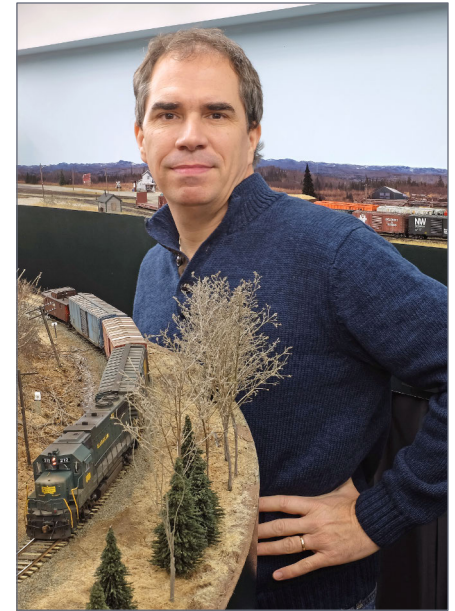
Things have improved since the NMRA car weight recommendations were developed some 70 years ago. So why still heavier?

After exploring Mike Confalone's rationale and experiencing first hand his Allagash operating sessions, I have to confess, Mike may be on to something.

Mike's contention is that our tiny plastic trains just don't feel like the full-sized trains scaled down unless we do things to deliberately impart a greater sense of mass to the cars.

To that end, Mike has found adding more weight to his cars than the NMRA RP-20.1 specifies adds a new sense of mass to the trains when you operate.

Having experienced one of Mike's all-day Allagash operating sessions first hand, I have to admit, the difference is quite interesting. The trains do feel more massive when you run them. It's true, you detect a subtle but compelling sense of weight to these tiny trains, just as Mike contends.



5. Contrary to hobby trends, Mike Confalone advocates **overweighting your cars** – that is, putting in more weight than NMRA RP20.1 specifies, rather than less. Mike's reasoning is interesting: see the text for more details.



The locos feel as if they're really working to get the trains over the road [6]. Those trains really do need the helpers!

Mike's overweighting philosophy clearly works. In an all-day operating session, I saw zero derailments. The only mishap – if you want to call it that – was the need for one train to double the hill because the four units on the front just couldn't get the train over the summit!

In fact, it was the flawless all-day operating experience I had on Mike Confalone's Allagash and my later interviews with him that lead to my "Run like a Dream" book series.

So what should we do? Confused yet? I told you this topic is controversial!



6. Mike Rose runs a long freight train at an op session on Mike Confalone's Allagash. Mike C. overweightes his cars, giving the trains a subtle but definite sense of mass. It really does take four units to pull a 20-car train on this layout!

WHAT TO DO: UNDERWEIGHT OR OVERWEIGHT?

I like to think of overweighting this way: we deliberately do things like selective compression to fudge our models for our miniature world. Few of us run 100 car trains on our layouts, yet we like running two, three, or even four diesels on the head end of our much shorter trains.

Why not selectively compress the mass of that 100-car train down to fit our much shorter trains? Why not make those short trains really need all that power to get over the road? It makes a certain kind of sense, actually.

True, if we were paying the bills for moving those cars over the railroad, we would want lighter cars, of course.

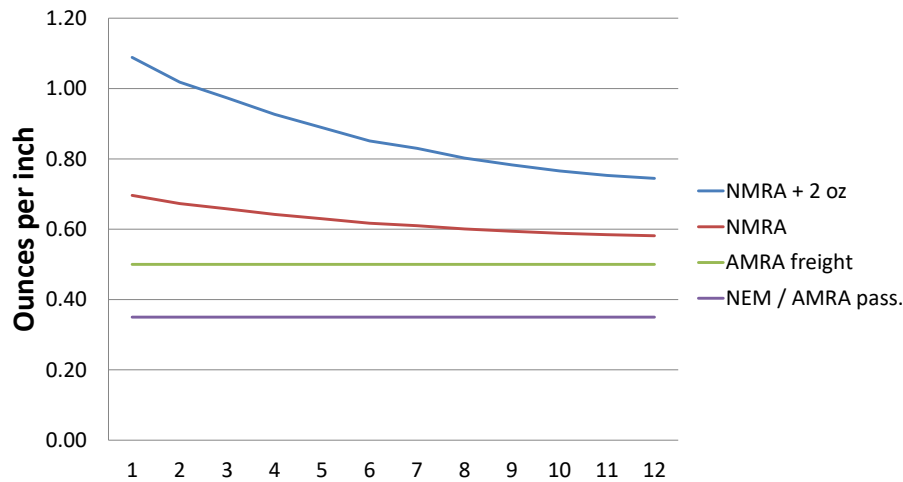
If making our trains feel more massive by overweighting the cars happens to make things less efficient, then so what? A key tenant of getting our model trains to run like a dream is pursuing a richer operating experience, not to win a medal for simply making things more efficient. Efficiency is laudable in our day job, but fun is the most important goal of a hobby like model railroading.

This all said, I am a diesel era modeler of a railroad that liked to run long heavy trains and long diesel lashups to go with them. I know the one major problem with model steamers is they often can't pull very many cars. In that case, going with the lighter weight standard probably makes more sense. But if you model the diesel era with long head-end lashups, you might want to give overweighting a try.

Implementing overweighting: I am currently experimenting with overweighting cars on my HO Siskiyou Line. I started out using one ounce per inch of car body length as my overweight standard, but I've since changed that.



Weight methods: Ounces per inch comparison



7. Analyzing the weighting methods for HO and charting them as ounces per inch of car length, note that methods based on the NMRA guideline makes longer cars lighter. It's also interesting the AMRA standard for generally longer passenger cars makes them lighter as well. Very interesting.

After careful analysis showed the NMRA weight guideline cleverly makes longer cars need fewer ounces per inch [7], I've moved to simply NMRA guidelines plus two ounces. This overweights shorter cars more than longer ones, easing the total train weight somewhat.

By going with the NMRA RP weight plus 2 ounces instead of my previous ounce per inch approach, an 80 foot passenger car or 80' TOFC flat only needs 8.6 oz. instead of 11.3 oz. This saves me from having to find a place for almost three more ounces. The AMRA European guidelines also make passenger cars 30% lighter than freight cars. Since passenger cars tend to be longer than freight cars, this also adds to the rationale for making shorter cars weigh less per inch.

I'm also applying the La Mesa weight reductions to my overweighting to lighten the car somewhat if it's a better tracking car. At the maximum reduction of two ounces, this gives me a car that matches the NMRA weight if the car is a tip-top performer.

To me, this is an optimum overweighting strategy. It allows lightening the cars so I can pull more cars, but it also makes the cars generally heavier to give me that greater sense of mass I'm seeking.

DETERMINING WEIGHT NEEDED

With the how-much-weight-is-best philosophical discussion behind us, how then do you measure a car and determine the amount of weight needed?

I start by measuring the main car body length, minus the couplers or body details.

I have marked my test track with car length measurements and the NMRA RP-20.1 guidelines to make determining the RP-20.1 weight easy and quick [8].

CAR WEIGHTING METHODS

Now let's look at how to add weight to your rolling stock. I focus on keeping the methods both easy and economical.

Pennies: Pennies can be an inexpensive way to add weight to a car. The price of 10 cents per ounce (28 grams) is hard to beat.

I've tried gluing the pennies to the car inside with super glue, but they often pop loose in time.

I've found using heavy duty foam tape like Scotch Permanent Outdoor Mounting Tape keeps the pennies in place forever and the install goes fast – and they never come loose again!





8. I have the NMRA weight and car length in HO feet marked on my rolling stock test track. To determine the car weight needed, I align one end of the main car body on zero and I read the NMRA RP20.1 weight on the scale at the other end of the car. This 50 foot HO car looks to be about 4.7 ounces (read between the two yellow arrows). This is the recommended NMRA weight for this car. Since I am overweighting by adding two ounces to the NMRA car weight, that means this car's base weight becomes 6.7 ounces. Other tests may factor that down per the La Mesa guidelines.

You can buy a 37-foot roll of this tape from Amazon (see the shopping list link at the end of this article) for less than \$15. That's enough tape to add an ounce of pennies to an HO car for about 30 cents per car (cost of the tape + cost of the pennies).

I know some modelers who don't like to use pennies because it is considered defacing the currency. If that concerns you, then check out the other methods I show.

Metal stick-on weights: For another convenient source of weight you can use metal stick-on weights. These weights work primarily on the inside of closed-top cars for adding

weight, although they can be used on the underside of some cars such as covered hoppers with plenty of space around the unloading chutes [9].

The move away from lead weight on car tires means the commonly available stick-on weight are steel, not lead. Because these weights can be attracted to magnets, they work best up inside the car rather than under the car.

I found an economical supply of steel stick-on weights on Amazon. This nine-pound box [10] costs just over \$20 US and comes with 576 one-quarter ounce weights (see the shopping list link at the end of this article). At one extra ounce per car, this is enough for 144 cars!

For adding weight on the underside of cars (when there is space), lead weights work better because they're non-magnetic. The most reasonably priced lead stick-on weights on Amazon go for \$6 for 6 ounces – see the end of the article for a link.

Steel weights are less dense than lead, so I show a comparison between 1/4 oz of lead to 1/4 oz of steel [10]. The 1/4 oz. steel weights are about 30% larger.





9. Stick-on lead weights can sometimes be used on the underside of cars like covered hoppers with chutes. I did have to cut down one weight to keep it from showing when viewing the car at eye level. See the bottom image – the weights do not show.

Lead rather than steel weights work best on the underside to avoid attraction to track magnets. The weights can be painted and weathered so they blend in with the car bottom even more.

Lead sheet: Lead sheet, if thin enough, has the advantage you can cut it and layer it as needed to fit the under-side of a car [12]. Lead sheet also works great for open-top cars like hoppers and gondolas as a false bottom (more on this later).

I prefer two thicknesses of lead sheet: 1/16" and 1/32". Amazon sells 12"x12" square sheets for a very reasonable price. The 1/16" sheet sells for about \$22. The 1/32" sheet goes for \$15. You can also get these sheet sizes and more from other websites besides Amazon, see the end article shopping list link for more.

Low melting point metals: Low melting point metals (120-160°) like Cerrobend have been known in the hobby since the 40s but they're not particularly safe. Cerrobend contains cadmium, which is a toxic metal. Filing these metals can be dangerous because accidentally ingesting cadmium metal filings can damage your organs or even kill you.

You can also get the non-toxic Fields Metal, but it's 20 times the cost! I've moved to using Tungsten power instead because it's a non-toxic metal that's more dense and less costly.

Tungsten powder: Solid tungsten is 70% more dense than lead for a given volume and tungsten powder is readily available for adding weight to golf clubs at about \$3 to \$4 per ounce.

Because of the airspace between the powder particles, raw tungsten powder is only 33% more dense than solid lead. Tungsten shot, on the other hand, is 42% more dense than solid lead, with the loss also being from the airspace between the shot balls.

Lew Phelps pointed out recently (see the [September 2020 MRH](#)) that adding tungsten powder to tiny tungsten shot solves the airspace problem by filling a lot of the low density air space with tungsten.

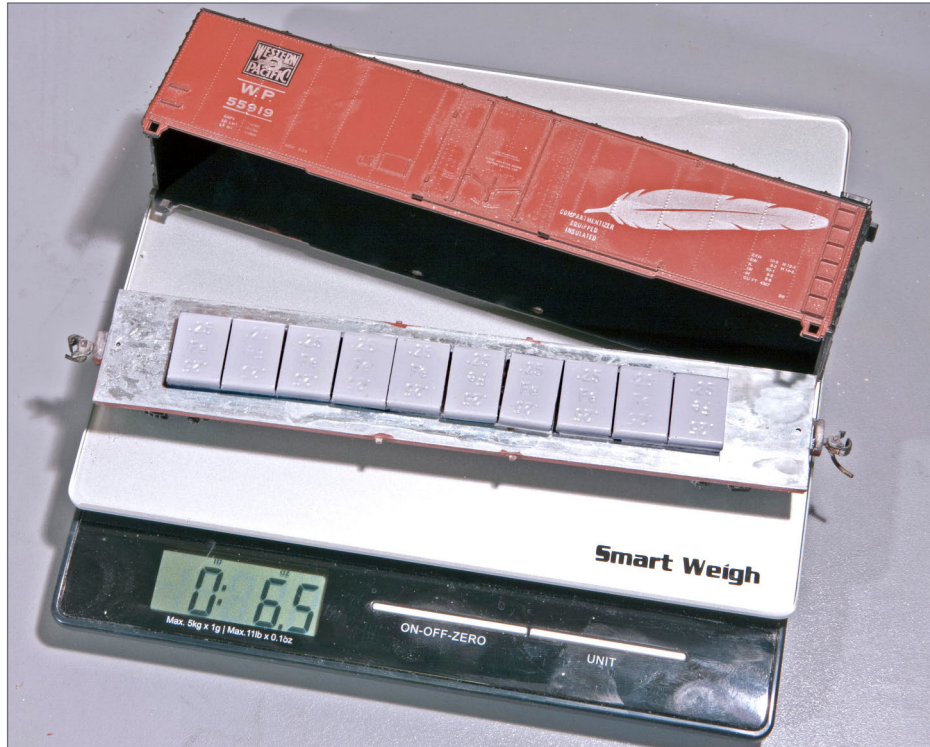
The tungsten shot + tungsten powder mix is 55% more dense than lead. While it's not as good as solid tungsten, it's a lot closer than the tungsten powder alone.

I like to mix the tungsten powder with something to make it into a putty that will harden. I've read online that some use epoxy or CA glue but that sounds rather messy.



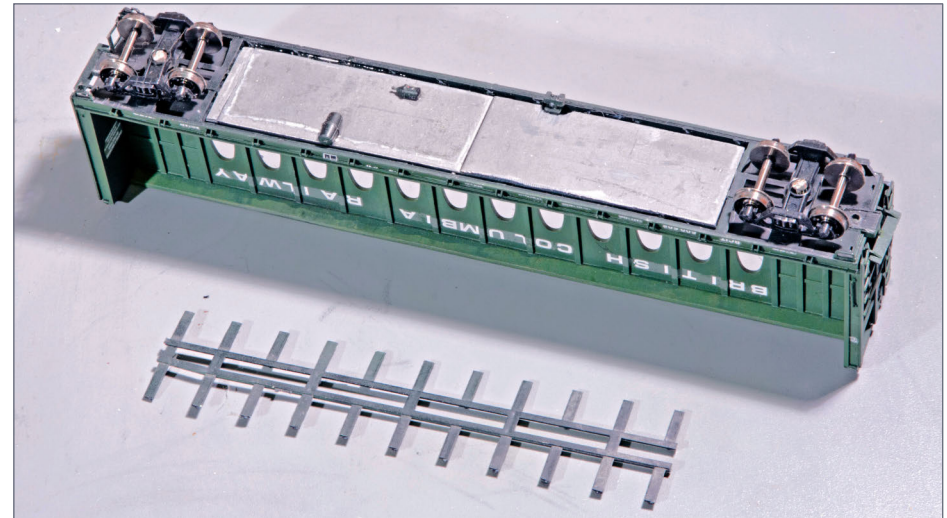
THE GREAT WEIGHT DEBATE | 17

10. I bought this box of 576 one-quarter ounce steel weights off Amazon for just \$20. Below the box, you can see a comparison of these steel weights to a one-quarter ounce lead weight. The lead weight is about 1/32" thinner and about 1/16" smaller in length and width.



11. This 50-foot box car needed more weight to get it to 6.5 oz. The steel weights work best if they're used inside the car body like this to keep them from being as affected by any track magnets. The steel weights are almost as economical as pennies.

THE GREAT WEIGHT DEBATE | 18



12. I added extra weight to this centerbeam flat car using 1/16" lead sheet. I removed the floor beams and glued the lead sheet in its place. I glued the brake detail to the lead sheet so when viewing the car at eye level from the side, the car underbody detail still looks correct. When using lead sheet on a car underbody, make sure the wheels cannot touch it or you will get a short.

I prefer Portland cement because it is more dense than CA glue or epoxy and I can pre-mix the tungsten powder with the cement as a dry mix.

Once I have this dry mix, I add the mix to the tungsten shot and just store this aggregate mix so it's ready-to-use when needed.



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J. Fugate

GETTING A MORE DENSE MIX

Note my tungsten powder + cement mix is roughly the two thirds the density of lead sheet. But when combined with the tungsten shot, the total mix is 50% heavier than lead, an excellent moldable weight for any irregular space such as what we find on the underside of a model railroad car.

By way of comparison, tungsten shot alone is 42% heavier than lead sheet in the same space. By filling all the air space around the tungsten balls with the tungsten powder mix as Lew Phelps suggested (see the [September 2020 MRH](#)), that adds another 8% to the total density giving us +50%. Bravo Lew Phelps! ■

I mix two parts tungsten powder to one part dry Portland cement. Then I fill a medicine bottle half full with tungsten shot and add a teaspoon of the tungsten powder mix dry into the bottle and shake it briskly to mix it well.

I keep adding more tungsten powder + cement until the powder just comes up to the top of the shot.

When I'm ready to use it, I just pour some out into my Pyrex pot topper (see shopping list), then add some wet water with a pipette. I mix it into a concrete aggregate-like slurry and trowel it into the model cavities [15] using a small palette knife. Amazon sells palette knives – see the shopping list link at the end of this article.

The tungsten powder mix doesn't stick real well to the smooth shot, so I add more tungsten powder mix to cover the shot entirely in the car cavity, then add some wet water with the pipette and smooth it down with the palette knife.

This putty mix+shot combination is a lot more convenient than using the low melting point metals, and it's a lot more dense as

well. This makes it easy to add weight to cars where you have odd cavities in the car underside.

You can find tungsten powder on Amazon. An 8 oz. jar goes for about \$27 US. Tungsten shot can be had in small quantities for about \$7 per ounce (\$22 for three ounces), or you can buy it bulk for about \$3 per ounce, but you'll need to buy five pounds at a time, for a cost of \$200. At one ounce per car, that's \$5-\$10 to add an ounce to each car.

When space for weight is at a premium such as with open-top cars, tungsten weighting methods provide a great solution, although they're not particularly inexpensive.

But how much is excellent equipment performance worth to you? I can tell you first hand, equipment that won't perform reliably destroys most of the hobby ops fun for me. I'd rather have fewer reliable cars than more unreliable ones.



13. I put 3.5 oz of my tungsten powder + Portland cement mix in the left cup, which is roughly equivalent to lead weights of the same volume. Then I put 3.5 oz of tungsten shot + tungsten powder + Portland cement in the right cup. Notice how much more dense and space efficient the tungsten shot + tungsten powder mix is.



Weighting method	Cost / oz.	Oz / cubic in.	Notes
Pennies	\$0.10	4.2	Some may dislike "defacing" currency
Steel wheel weights	\$0.15	4.7	Magnetic, best for car interior only
Plaster/Cement	\$0.15	1.7/1.8	60% less dense than metal weights
Lead sheet	\$0.55	6.6	Average cost (varies by sheet thickness)
Lead weights	\$1.00	6.6	Pricy but convenient
Tungsten powder*	\$3.50	4.4	Weight is average for putty: powder + cement
Tungsten powder + shot*	\$5-\$10	9.9	Weight is average for putty with shot + powder + cement
Fields metal	\$21	3.9	Safe non-toxic low melting point metal (144F)

*Tungsten powder is very dense (8.6 oz per cubic in), but must be mixed with some glue or cement to make a putty; that reduces the density. Mixing with small diameter tungsten shot dramatically increases the oz per cubic inches figure.

14. Comparison of the various weighting methods by looking at their cost and the density of the material used.

Plaster/Cement: Speaking of plaster or cement, in a few special cases using plaster or cement straight to add weight can be helpful. With plaster and cement, the hardening process relies on a crystallizing chemical reaction triggered by the water, rather than evaporation. This means it will harden inside a sealed model such as a tank car just fine.

I drill a hole in the bottom of a tank car and make a watery mix of Durham's Water putty or Portland cement and a small funnel to pour it into the car. I cover the hole with some sticky tape like duct tape and turn the car right side up to let it harden.

For more examples of difficult-to-weight solutions, see my book [Make it run like a Dream: Rolling Stock](#).

In chart [14] I summarize all the weighting methods discussed here as to cost per ounce and the weight per cubic inch. This chart shows which weight methods are the most economical and also which give the best space efficiency. ☑

Shopping list for this article:

mrhmag.com/magazine/running-extra/2020-11/weight-debate

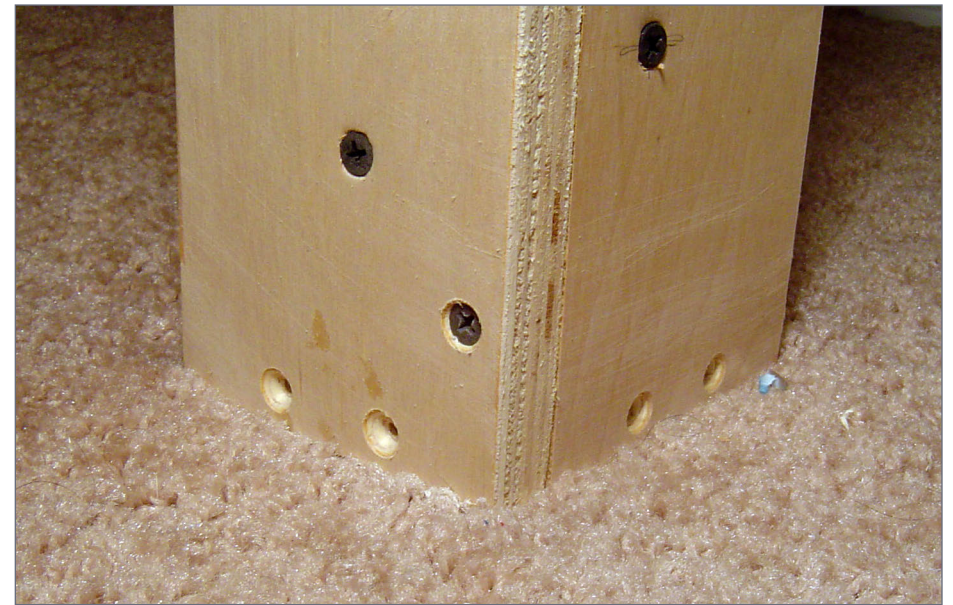


15. With open-top cars like flat cars, you need to use every nook and cranny underneath the car for weight. I replaced the standard steel weight with lead sheet (40% heavier than steel), then added some lead sheet and added stick-on lead weights to get the car to 4.2 oz. Using my NMRA weight + 2 oz and La Mesa adjustments, this car needs 6 oz of weight total. Thanks to the new tungsten shot + tungsten powder mix method, I was able to easily get the car to 6 oz.



encountered a problem. The room has wall-to-wall carpet installed over a concrete floor. I noticed that the layout's legs sank into the carpet pile so far that I couldn't see or reach the leveling bolts [1]. Also, I worried that the legs would sink even farther into the carpet over time, causing permanent damage to the carpet while ruining the benchwork's alignment. How to solve this? I've seen others put plywood or MDF sheets down over the carpet, but that wouldn't work for me. I store rolling carts and desks under the benchwork that I need to roll out on occasion.

My solution was to create cleated leg pads for the benchwork. The pad's 1.5" masonry nail cleats reach through the carpet pile to rest directly on the concrete floor, creating a firm base for the benchwork legs [2]. Important: this solution works for concrete floors only. The nails will damage wood floors.



1. The legs of my benchwork were sinking into my carpet, making it impossible to reach the leveling screws, while causing damage to the carpet.



Benchwork *Leg pads*



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MRH Running Extra | November 2020

RICK WADE SHARES HIS SOLUTION FOR MOUNTING HIS LAYOUT SECURELY ON THE CARPET ...

I WAS IN THE PROCESS OF INSTALLING BENCHWORK IN MY layout room/office when I



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BENCHWORK LEG PADS | 3

I started the construction process by ripping a piece of ½" x 24" x 24" poplar plywood into 3-inch-wide strips with my antique DeWalt radial arm saw [3]. *NOTE: Always read, understand, and follow the tool's safety instruction and always wear safety glasses.* I used a push block to keep my hands well away from the blade.

I clamped a stop to my saw table, setting a length of 3". I clamped my stop at an angle to allow sawdust a place to go so that it wouldn't end up accumulating at the stop, and affecting the cut. I cut the strips into 3x3" squares. I cut 44 pieces to create 22 pads, two of which would be stacked into a sandwich [4].

Next it was off to the drill press. I drilled four holes through 22 of the pieces. I made a right-angle wood jig to hold the pieces in proper position for drilling holes uniformly spaced from

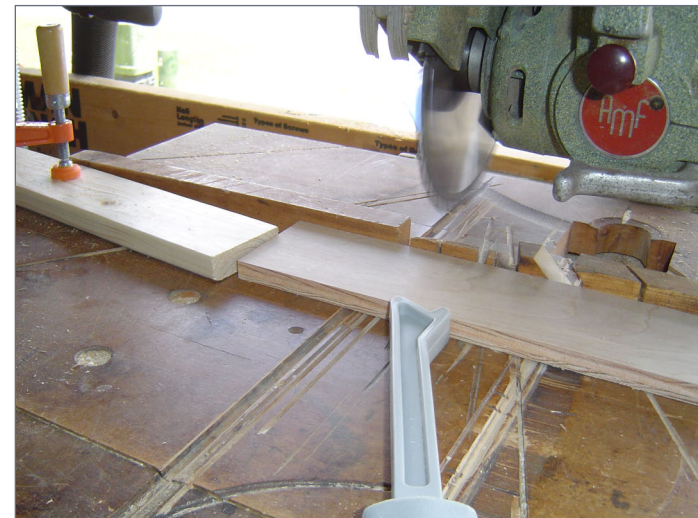


2. Completed pad with masonry nail cleats. The washer will provide a mount for the leveling screws on the legs of my benchwork.

BENCHWORK LEG PADS | 4



3. My trusty DeWalt made quick work of ripping plywood into 3" strips.



4. I cut 44 3x3" pads. Note that the stop is at an angle. This helps maintain a precise cut by channeling sawdust away from the stop's leading edge.

each of the four corners. Then I set the depth of the bit to create countersink holes for the heads of nails I would insert in the next step [5].

I chose 1.5" masonry nails because they are very hard, though any nail of proper length would do [6]. My idea was that the



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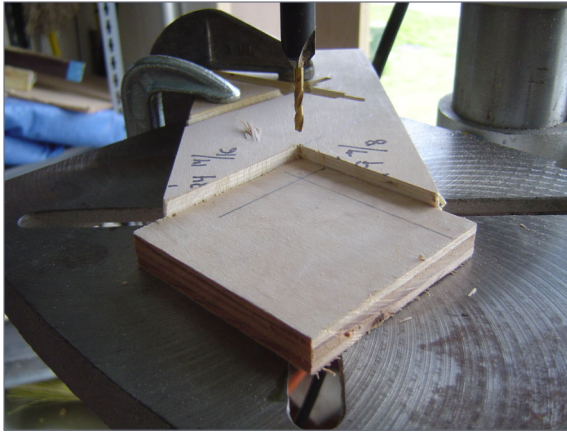
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BENCHWORK LEG PADS | 5



5. A right-angle jig helped me drill four uniform holes in 22 of the 3" squares.



6. These are the masonry nails I used.

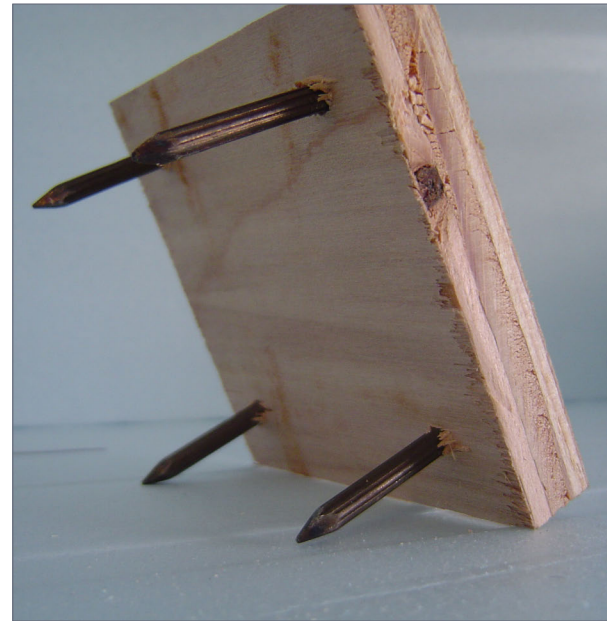
nails would pierce the carpet and padding to rest directly on the concrete. I tested to make sure the cleats would not damage the carpet and the nail holes would be invisible if the layout and pads would be removed later on.

Next I drilled pilot holes for the nails all the way through the 22 pieces. This made driving the nails easy. I simply used a hammer to tap the nails in until the heads were flush with the wood [7]. The pre-drilled holes made four uniform and well-aligned cleats [8].

BENCHWORK LEG PADS | 6



7. With the holes drilled through, it only took a few taps to put the nails in.



8. The bottom half of the pad with its four masonry nail cleats.



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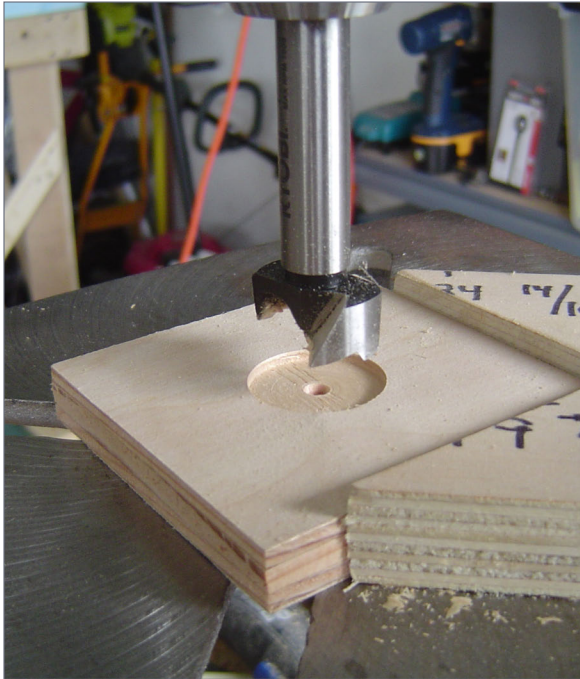
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BENCHWORK LEG PADS | 7

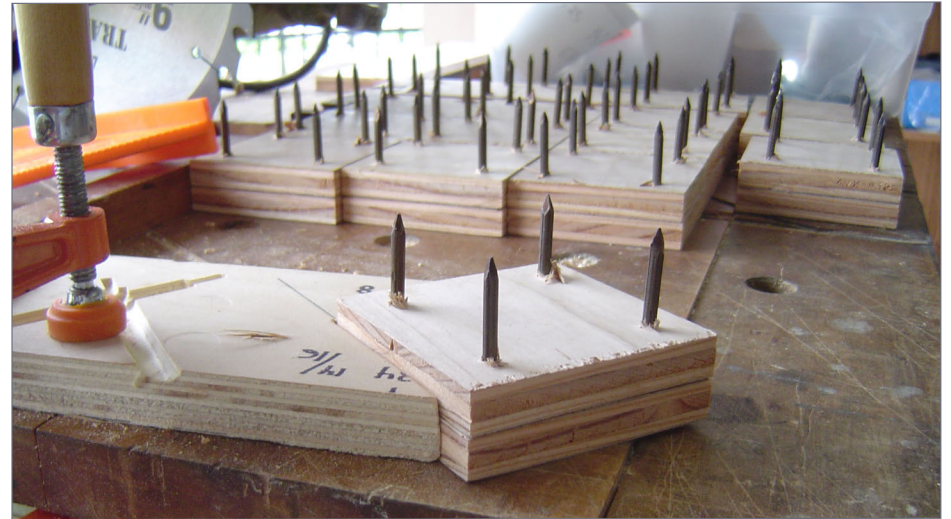
With that, it was time to turn my attention to the 22 top halves of the pads. Returning to my drill press, I set my positioning rig to center the squares. I used a 1" Forstner bit to drill a hole in the center of each shallow enough to accommodate a flat washer for a 5/16" bolt (the washer is about 1" in diameter) [9]. My idea was for the leg-leveling carriage bolt to sit on the washer in the hopes that it would not indent or sink into the wood.

With the holes drilled in the tops, I was ready to assemble the top and bottom halves of the pads. I clamped my positioning jig onto my saw table, and used hot glue to assemble the two pieces upside-down. I chose hot glue because it sets quickly and bonds strongly enough for this job [10]. Once everything was assembled, I used adhesive caulk to hold the flat washers in the shallow holes on the pad tops [11].



9. Drilling a centered 1" hole for a flat washer.

BENCHWORK LEG PADS | 8



10. My alignment jig and hot glue made joining the two halves of my pads a snap. All the assembled pads in the background are starting to look like some kind of medieval torture chamber!



11. The final step was placing the washer into its shallow hole and securing with adhesive caulk.



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With the pads installed, I have a stable surface and the legs are raised so that it's easy for me to get to the adjustment screws. Besides making it easier to adjust the legs, the pads protect the carpet from damage [12].

I would recommend this solution to anyone with a carpeted concrete floor. It protects the carpet, makes for a stable layout base, and gives easy access to the leg levelers for your bench work. Making them was simple and inexpensive and they do the job beautifully! ☑



12. The finished pad under the leg.



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RICK WADE



Rick had lots of opportunities to watch the Louisville & Nashville trains pass only 200 feet behind his home in his youth. His first real layout was an HO scale beauty that his father helped him put together when he was 8 years old.

In 2006 the local lake near Rick's north-east Georgia home was so low after a two-year drought that he couldn't use his boat anymore. Facing sheer boredom, he purchased the DPM "1st National Bank" kit and assembled it after reading up on construction and weathering. Rick enjoyed the experience so much that he bought another kit...and then another...and was hooked. With all the finished kits mounting up, the only logical thing to do was build a railroad.

As a work-from-home employee, Rick could use what would normally be his commute time to-and-from an office to work on his original basement HO layout, the Richlawn Railroad which was named after his childhood neighborhood.

Rick's favorite part of railroading is still structures, with scenery a close second. In the fall of 2012, Rick and his family moved from Georgia to Florida, and he is currently working on version two of the Richlawn Railroad. ■



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THE AH-HAH MOMENT

column



MRH Running Extra | November 2020

ERIC HANSMANN MAKES CLEVER PAINT

STANDS FROM HOUSEHOLD ITEMS ...



RATE THIS ARTICLE

A COMMON PAINTING TOOL FOR HOLDING AN HO SCALE BOXCAR or reefer car body is the tube from a toilet paper roll or a paper towel. I crimp the top of the tube to fit inside the carbody. But where do I put the tube after painting the model?



1. A paper towel tube sits in a yogurt container anchored with nuts and bolts in the bottom.

I've used a yogurt container [1] weighted with nuts and bolts for use with the paper towel tubes.

The extra weight prevents the tube and painted model from tipping when placed into the yogurt container.

A circle can be cut in the lid to match the paper towel tube and minimize any tendency toward tipping.

THE AH-HAH MOMENT | 2

2. A plastic dairy products bottle can be used with paper towel and toilet paper tubes.

Another option is a pint size plastic bottle used for dairy products [2]. Toilet paper roll tubes fit snugly over the top of the container.

I added rocks from the yard as ballast to keep the bottle from tipping when a newly painted model is placed onto the bottle.

My latest discovery: a recently emptied bottle of hot sauce [3]. The tubes fit right over the top of the glass bottle and it's heavy enough to use without additional weight, although I might add sand as ballast just to eliminate any possibility of tipping.

I usually paint more than one model at a time and I keep a few of these containers ready to use near the spray booth. ☑



3. Toilet paper tubes fit onto the tops of different bottles to use as drying stands for newly painted models.



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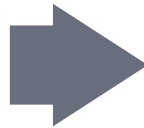
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Bonus section!

Here are all the pages from
the November issue of
*Model Railroad
Hobbyist* magazine
as well!



ALSO:

- Signaling a DCC layout
- Trick out a TrackMobile
- Simple, effective truck painting jig
- The case for exhibition layouts

... and more inside!

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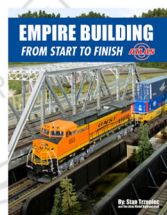
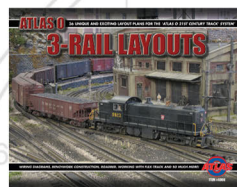
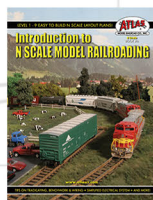
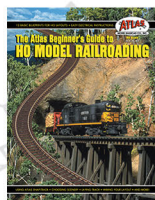
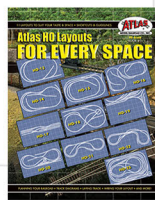
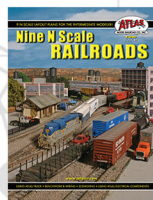
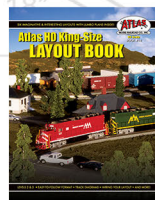
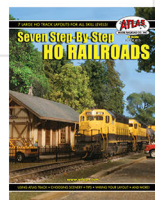
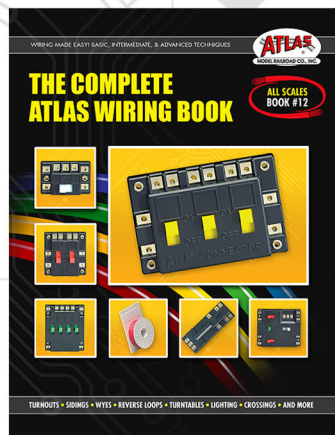
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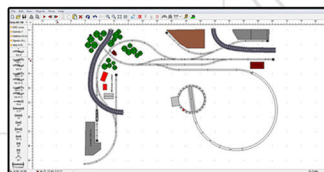
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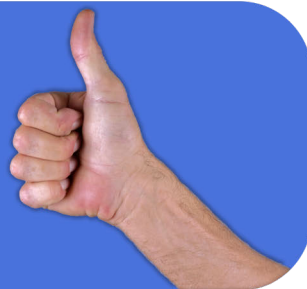
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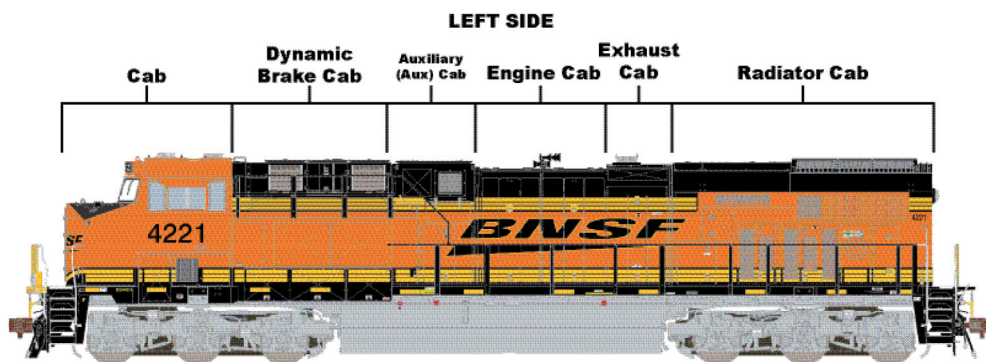
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PUBLISHER'S MUSINGS



Guest Editorial | Model Railroad Hobbyist | November 2020

NICHOLAS KALIS CONSIDERS EXHIBITION LAYOUTS ...

★★★★★
RATE THIS ARTICLE

I RECALL WHEN I FIRST VIEWED AN N-SCALE EXHIBITION layout at the Gaithersburg, Maryland Lion's Club model railroading show. What's an exhibition layout? It's a completely self-contained "mini-layout" with the backdrop, fascia, and valance all as a unit – scenicked and fully operational. Old trains for sale and clinics could not hold a candle to this exhibition layout for its power to attract someone to our hobby or to energize newbies such as myself who often flounder when starting the hobby.

Inspiring creativity and participation: Home decorating books aimed at apartment dwellers or small homeowners often publish the most creative ideas. Similarly, exhibition layouts – constrained by space – demand creativity in order to captivate viewers.

Exhibition layouts draw out all of one's creative thoughts and energies. MRH's The One Module Approach (TOMA) embraces some of this thinking, but exhibition layouts take it a step further. Conjuring another image – who joins a yacht club to stand on its dock to wave others a hearty bon voyage as they sail off? Isn't a model railroader without a layout a bit of the same?

Most, if interested in this hobby and given the opportunity, want to go further and abandon some pleasures to build themselves a layout.

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No bashing basement empires here: I delight in basement empire layouts – they're a marvel to build and behold – that is if you have the right stuff (apologies to Tom Wolfe). Some discover they do not have what it takes to build a basement empire – they can be a source of frustration and failure – and that failure can get repeated from old house to new house.

I'm not calling for us to abandon building basement empires. When I have served as layout tour chairman, I'm tickled pink to schedule a basement empire's open house. Most magazines, hard copy or online, will be pleased to feature your basement empire.

Challenges that exhibition layouts address

Why exhibition layouts? Is it because our hobby is dying? No. Because we're not living up to our potential? Heck no.

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PUBLISHER'S MUSINGS | 3

I get that model railroading naturally appeals to an older crowd: they have (protestations aside) the bucks, the time, and the room. Why not accept our golden age with more and better products than have ever existed before – and perhaps, when comparing apples to apples, cheaper adjusted for inflation?

Visiting any International Plastic Modelers Society Show (IPMS) demonstrates what we may be missing. For starters, IPMS attendees usually run two generations younger than the guys in our hobby.

Our publications and web sites suggest the answer as to why – it seems most of us in the hobby worship at the altar of basement empires. How does that appeal to people in their late twenties to late thirties who have put aside carousing and are settled into their first condominium or smaller home?

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Rather than getting smaller as some wrongly claim, American homes' floor space has grown in recent decades. I do concede, however, that family members often stake their claim on that expanding space for a home theater, gym, and a hobby room for the spouse.

Since homes appear to be expanding, then what is the challenge? Most don't just start out in that larger home: it takes a series of career promotions over decades to reach the larger home.

So what do modelers in their late 20s to late 30s do while working up to that mega-house? That's where exhibition layouts come in. Any smaller layout does not need to be seen as a concession to a larger layout – to many they can stand as the be-all and end-all of the hobby.

Plastic modeling allows this younger cohort to enjoy a non-computer hobby in one small corner of their home. Exhibition layouts can fill that role, too. A small workbench in their room corner works just fine with this exhibition layout (under construction or completed) on a shelf above the workbench. And there's always the garage or backyard for a few of the dirtier parts of layout building.

Exhibition layouts – albeit on a much smaller scale – can have it all. Craftsmanship, scenery, telling a story (all layouts must do this to be effective), operations, comradery, and completion.

Speaking of comradery – famed exhibition layout *B.A. Bodil* (see *Layout Design Journal* Second quarter, 2019) was the work of three friends, helped by their spouses. Can anyone think of anything better than this? And it did not end there – Bodil's three compadres have worked and exhibited other notable layouts together as well. The fun never ends.

The North American hobby press neglects exhibition layouts. Yet, editors on this side of the Atlantic give exhibition layouts the short shrift, with the occasional shout in the wilderness



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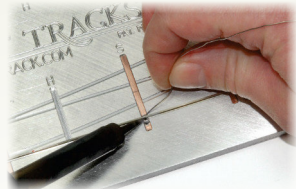
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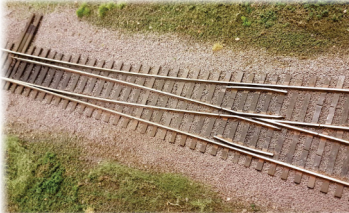


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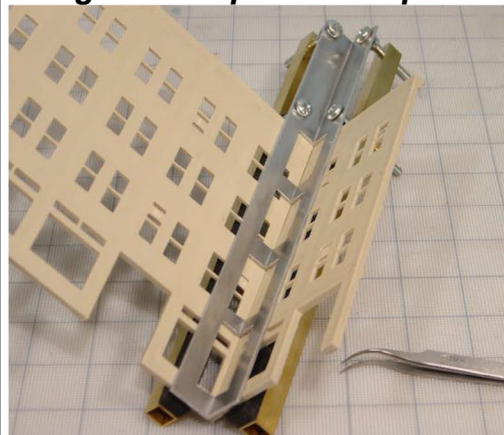
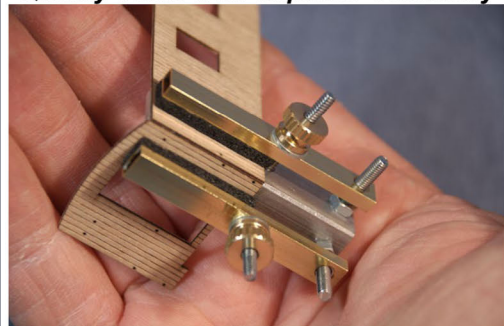
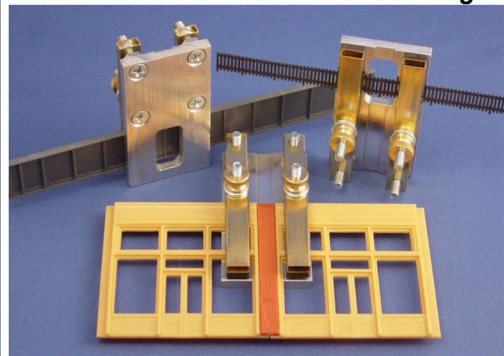


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www.coffmaneng.com**PUBLISHER'S MUSINGS | 5**

from writers like Paul Dolkos and Iain Rice.

But then little follows; keep an eye out in the future because *MRH* will follow up and feature such exhibition layouts regularly.

Spotlight on Newton Halt

This layout is creativity at its best – *Newton Halt* by Andrew McMahon and Sheila Perry. (the Brits use "halt" as we would "stop" or "station.")

Cramped spaces make for spectacular exhibition model railroads and to prove it www.carendt.com reports this 009/HOn30 layout, set in the inter-war period, won the Narrow-Gauge Competition at the Chelmsford Model Railway Exhibition.



Photo of Newton Halt exhibition layout scene.

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PUBLISHER'S MUSINGS | 6

Details to note:

- Artful valance painted to match skirts
- Tasteful valance support
- Two separate skirts matching its fascia
- Excellent portable lighting

Also of note: the layout uses a fiddle yard to facilitate operations.

Exhibition layouts like this send me into seventh heaven – and make me wonder how much better off would the American model railroad community be if those with limited resources would tackle such a layout rather than just pine for someday, maybe, eventually?

The only discordant note on Newton Halt – stickers applied to its fascia denoting either awards or attendance at prior shows. Yes, an invitation to exhibit at a show with some remuneration attached is a mark of honor in Europe. Gasoline prices in Europe being what they are, it seems only fair to award an honorarium to exhibitors such as these.

Encouraging more exhibition layouts

I have to wonder, though, might honorariums be in order *on this side of the Atlantic* to encourage exhibition layouts to be built here and exhibited at shows? The dictionary definition of an honorarium calls it payment made to honour an individual for their charitable service.

So why pay someone to bring his exhibition layout to a model railroading event? Perhaps we need to acknowledge that exhibiting your layout is not normally something you would expect to be compensated for. But bringing an exhibition layout to an event costs money not only for gasoline, but also often includes hefty tolls and/or parking costs.

And besides, you probably need to pay someone in your stead

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PUBLISHER'S MUSINGS | 7

to cut the grass or some such other trade-off so you can drive to the show. In addition, you may be taking along a buddy, with the two of you each likely eating two meals on the road since you're away from your home.

Back to the root of the word – an honorarium honors layout exhibitors – we're showing gratitude for their crew loading a layout for travel to the show, then unloading it at the venue; setting it up, taking it down; and then unloading and setting it up once again at home.

I'd say it's worth giving it a try if it would result in more exhibition layouts. ☑

Nicholas

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LAST ISSUE'S RATINGS

The three top-rated articles in the [October 2020 issue](#) of *Model Railroad Hobbyist* are:

4.6 What's Neat: Scenery from start to finish

4.4 Savvy Modeler online: Awesome diesel weathering

4.2 Publishers Musings: New MRH website coming

Issue overall: **4.3**

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Best of the
MRH WEBSITE Website
mrhmag.com **THIS MONTH**

Model Railroad Hobbyist | November 2020

Compiled by **JOE FUGATE**

★★★★★
RATE THIS ARTICLE



Modeling concrete standing areas *fast*

MRH forum member **JlandT_Railroad** (Jason Miller) posted several photos of his new concrete standing area that he installed in record time completely finished with a realistic concrete texture:

“This is the first section of the York - Pulp & Paper Mill. This uses 0.030” (0.75mm) styrene sheet with a concrete stick-on texture.

Removable, customizable, easily weathered, and extremely quick...”

Go have a look and participate in the discussion!

[View the full thread on the MRH website](#)

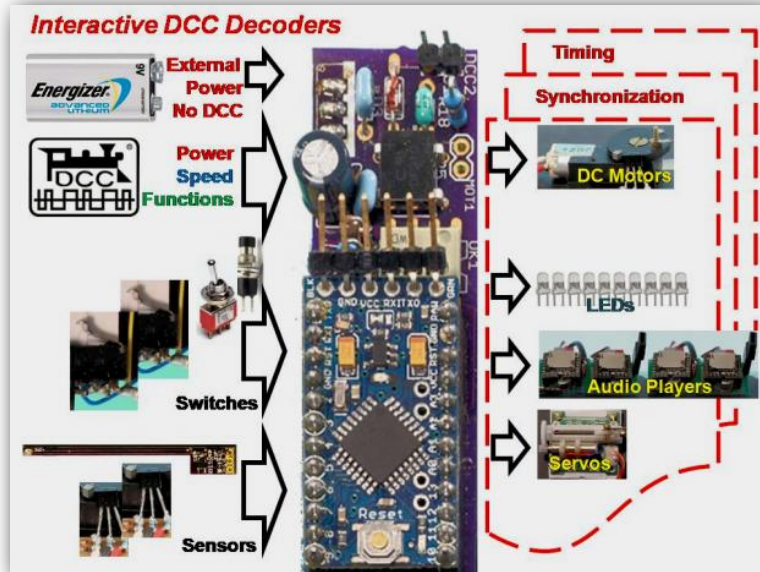
► **MRH'S MONTHLY GREAT MODELER POSTS**

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BEST OF THE MRH WEBSITE | 2



1. Animation whiz Geoff Bunza posted a new thread on making your own interactive decoder for easy layout animation.

New generation of interactive decoders

MRH forum member **geoffb** (Geoff Bunza) posted a new highly detailed thread on building your own interactive decoder that makes layout animation tasks a breeze:

“Scale Model Animation – bringing models to life – adds enormously to the interest and enjoyment of any layout ... this article introduces a new generation of decoder – DCC decoders ... allowing you and your layout to interact. The series of Interactive Decoders (IDEC) were designed as an integral part of my animation work, but the inventive modeler can apply them to a wide variety of projects.”

If this interests you, check out this highly detailed thread!

[View the full thread on the MRH website](#)

Check out this new TMTV series ...

Make it run like a

Dream

By Joe Fugate

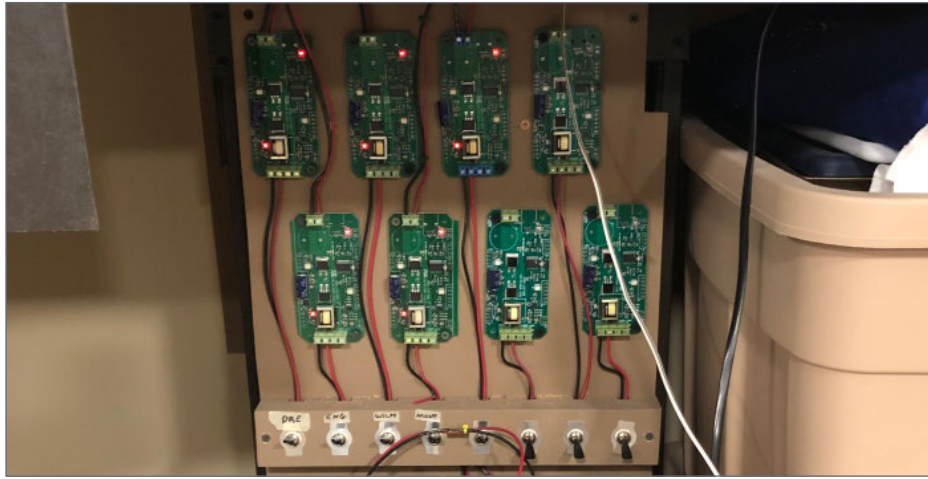


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2. Dave Husman illustrates how he subdivided his DCC layout up into different power districts for short management and troubleshooting.

Power districts & safety circuit breakers

Forum member **railandsail** (Brian Eiland) has a long running thread exploring how to do power districts and use short management circuit breakers:

"I think I need to divide the layout up into 'power districts'. And I believe I understand these districts should be protected from accidental shorting ... or rather the DCC system should be protected from shorting within the districts?"

Brian's thread has prompted a lot of DCC savvy modelers such as Dave Husman [2] to explain the concepts by showing what they have done. Seeing actual working examples from other modelers along with Brian's questions makes for a helpful discussion. The thread runs seven pages and has over 60 posts.

If this topic interests you, this thread has some great insights.

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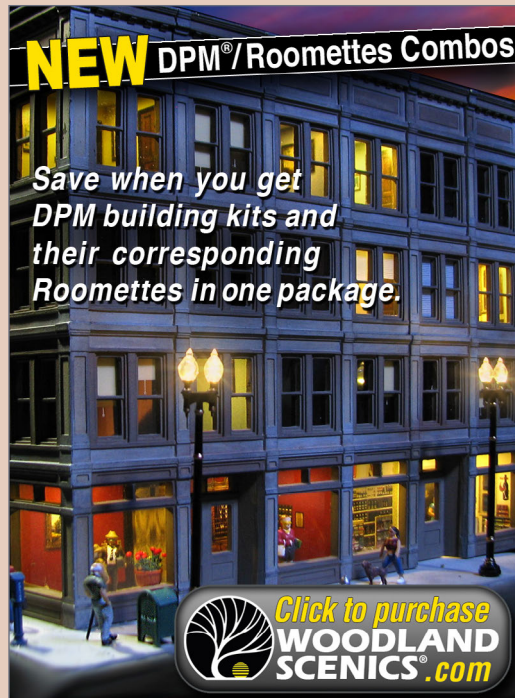
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3. Randy Seiler has this backdrop eyesore around the furnace in his basement, so he discusses his solution on his *MRH* layout blog.

Hiding a backdrop eyesore

MRH forum member **RSeiler** (Randy Seiler) chronicles the process of hiding a major backdrop eyesore on his *MRH* blog.

“Finished hiding the furnace tonight. Not perfect, but much better. And that is the last of the backdrop. There was much rejoicing.”

Visit Randy’s blog and dialog with him about his layout projects!

[View the full blog on the *MRH* website](#)

Latest *MRH* Weekly photo fun thread

Every week, a new Weekly Photo Fun thread appears. It’s frequently loaded with inspiring photos of great modeling ...

[View the full thread on the *MRH* website](#)



4. It’s hard to beat this photo of the diorama *MRH* forum member **Mountaingoatgreg** (Greg Baker) built to explore some scenery techniques. Greg, we say wow, this was “just an experiment?”



TMTV's *NEW* Backshop Clinic is here!



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One viewer commented: "I've long used the NMRA gauge, but I never realized all of the different things that were determined by the gauge."

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WHAT'S NEAT

column



Model Railroad Hobbyist | November 2020

KEN PATTERSON'S COLUMN THIS MONTH ...

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- Modeling realistic bushes
- A view along the bluffs
- Making Saguaro cactuses
- Modifying a BLI TrackMobile with sound and LED lighting ...

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WHAT'S NEAT!
MODEL RAILROADING
trick out a
Track Mobile

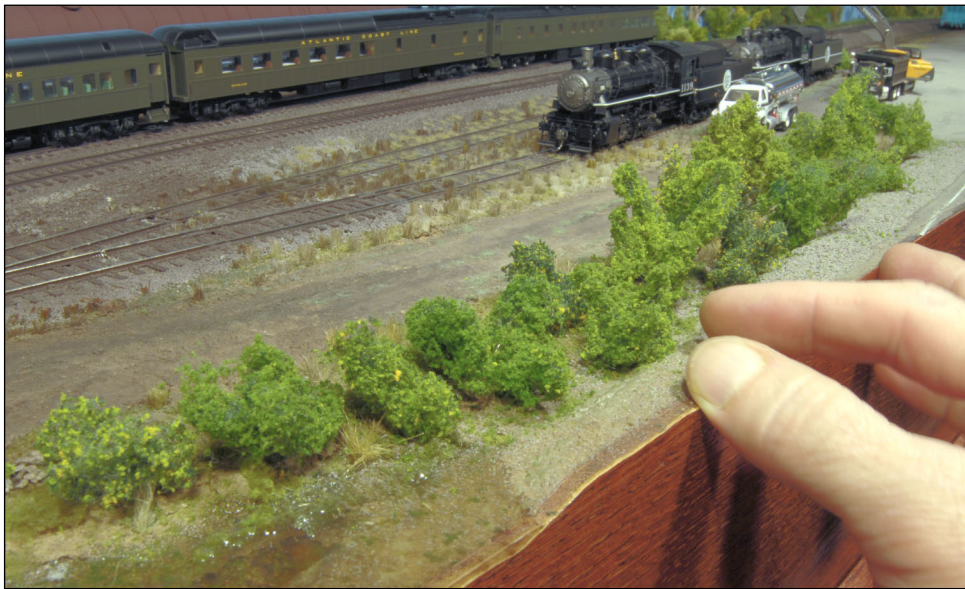


November 2020 show

PHOTOS AND VIDEO OF SUPERB MODELS

THIS MONTH KEN SHOWS HOW HE MODELS BUSHES WITH WIRE armatures from Bachmann and Saguaro cactuses with modeling clay; Steven M. Conroy features the Pacific Surfliner running along the bluffs above the California coast; and James Regier shows step-by-step how he added sound, LED lighting and keep-alive capacitors to a BLI TrackMobile.

Realistic Bushes for your layout



1. Ken shows how he makes trackside vegetation such as honeysuckle bushes that grow wild all over Missouri.



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2. The bushes begin with Bachmann SceneScapes Wire Foliage Branches, which make good looking bushes straight from the package.

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Chesapeake Western & Kankakee layout plan

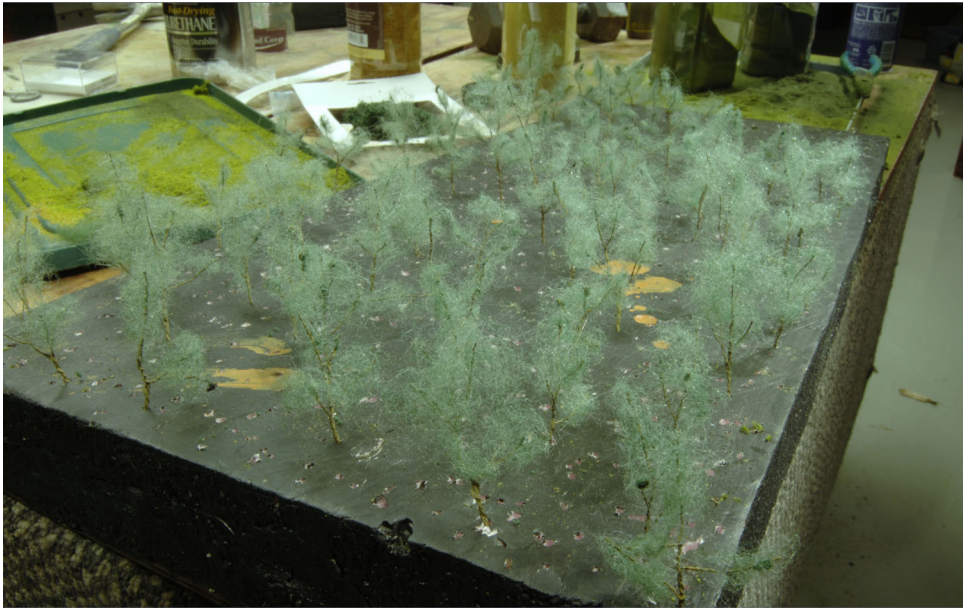
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3. Ken begins by removing all the ground foam from the wire armatures, covering the wire branch structure with Bachmann poly-fiber. Making 50 or more bushes at a time, Ken keeps them organized by sticking them in a foam sheet.

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4. Ken holds the poly-fiber covered armatures with needle nose pliers as he sprays them with extra-hold hairspray and sprinkles a variety of colors of fine ground foam over the bushes.

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5. The finished bushes await planting on the layout.

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6. Ken sticks each bush along the tracks in various areas to represent vegetation growing wild.

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7. Ken's bluff scene depicts an area where the bushes and other plants grow wild. This section of his layout was modeled from prototype photos and the modeled vegetation looks prototypical.



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Modeling Saguaro Cactus



8. There are many ways to make Saguaro cactus models, including shaping green pipe cleaners, and cutting and molding white plastic coat hangers, carving the vertical creases into the pieces and then gluing them together.

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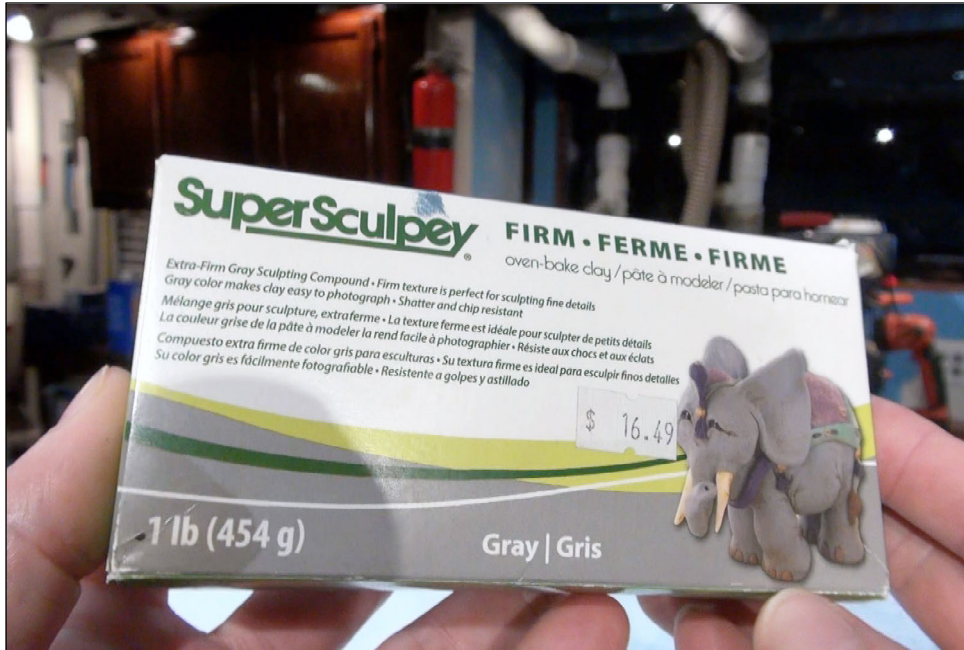
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9. The easiest way Ken has found to make Saguaros is by using bakeable modeling clay, such as the SuperSculpey seen here.

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10. Modeler Travis Handschug took this photo showing how he shapes a ball of clay into the trunk and arms of a Saguaro cactus.

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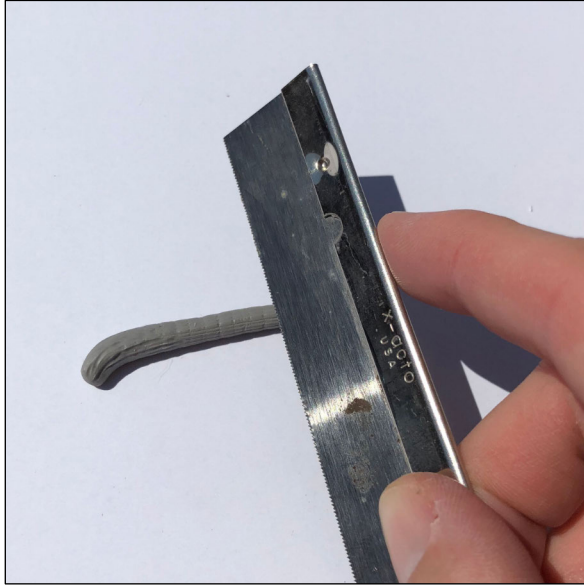
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11. Saguaro cactuses have distinct vertical furrows, which can be made by drawing a razor saw through the soft clay prior to baking.



12. Travis planted the finished baked-clay cactuses on a desert scene diorama.



13. ZYXCreative.com offers 3D-printed Saguaro cactus for sale on their website. Painted and ready-to-plant, the plants save modeling time and effort.

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Adding sound and lights to a TrackMobile



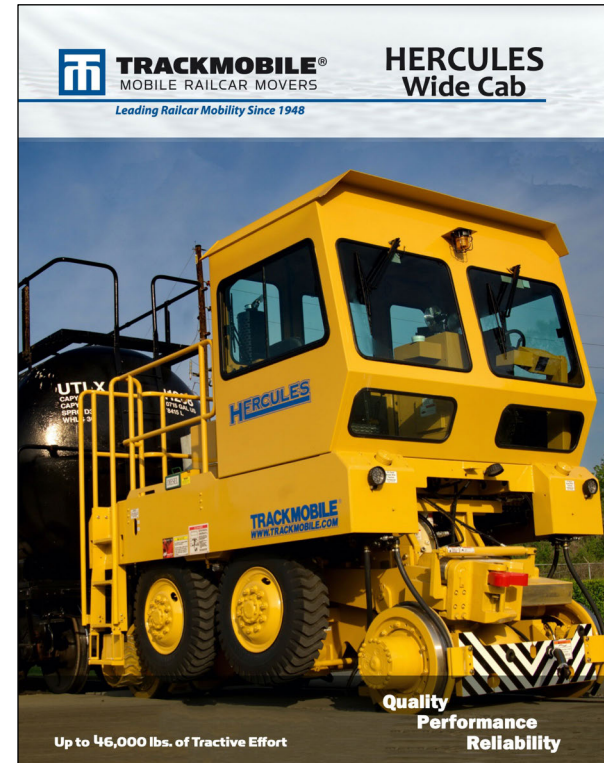
14. Adding light and sound to the BLI TrackMobile was a serious challenge, but the result was everything James had hoped for. He used a SoundTraxx Tsunami2 TSU-1100 with the GE soundset for the project, as it was the only decoder with factory-installed Cummins diesel industrial switcher sounds.

James Wright purchased a Broadway Limited Imports (BLI) TrackMobile and was looking for someone to upgrade it to DCC, preferably with sound and lighting. James Regier took up the challenge.



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15. Some research determined that the Hercules Wide Cab was the likely prototype for the BLI TrackMobile. A sales brochure assisted in determining where the 12 LEDs would be installed.



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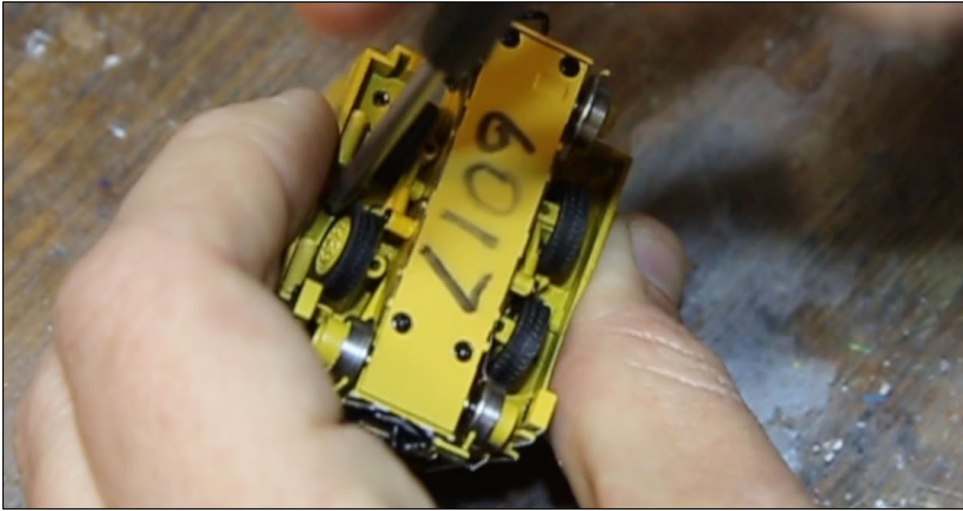
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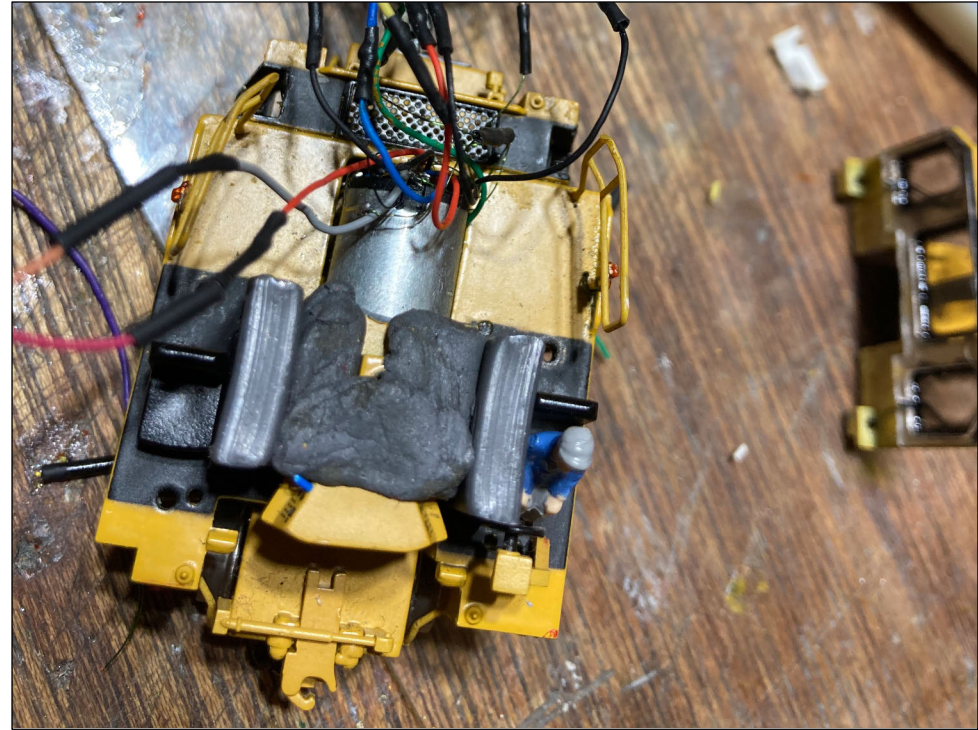
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16. Dismantling the TrackMobile to determine where to install the decoder involves removing the ten screws that hold it together. Four screws hold on the bottom cover panel, four more hold on the two-piece cab. The last two separate the motor/gear housing from the frame. To access the motor/gear housing, James also had to undo the screws holding the road gear struts on.



17. Installing the decoder in the cab involved removing the 0.65 oz. weight to make room.



18. The weight removed from the cab needed to be replaced, but in a model as small as the TrackMobile there were no obvious spaces. By removing, trimming, and reinstalling the seats James was able to make room for a quarter ounce between the motor housing and each seat. James also added some A-Line lead putty around the seats and on the center console. When painted Armor Yellow it largely disappeared from view.



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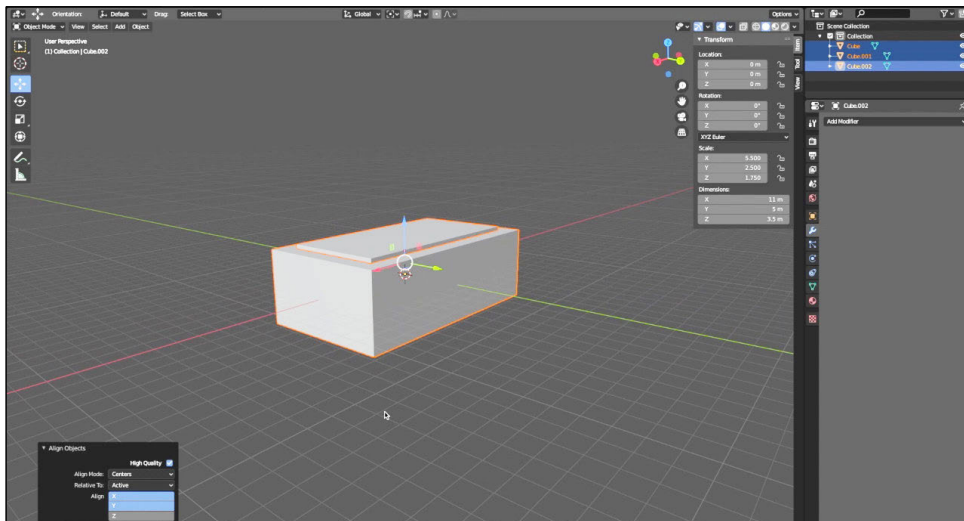
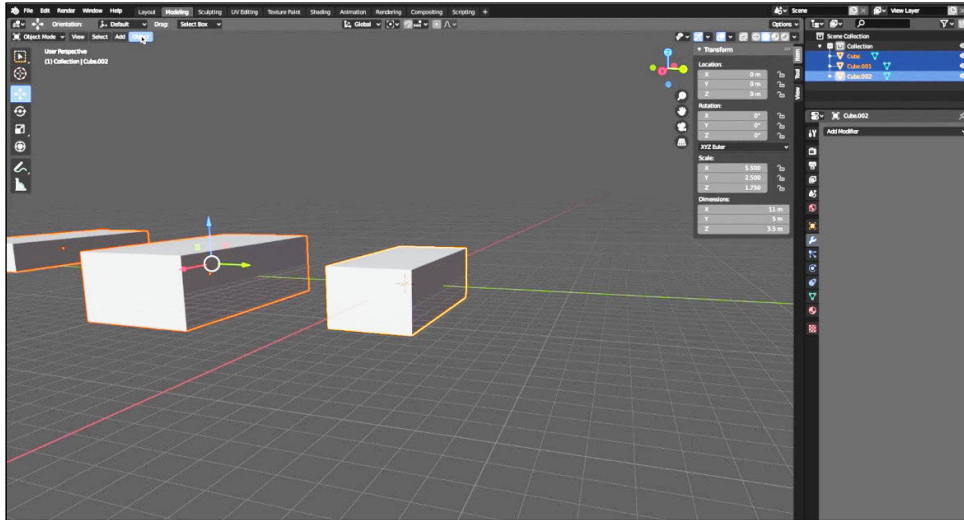
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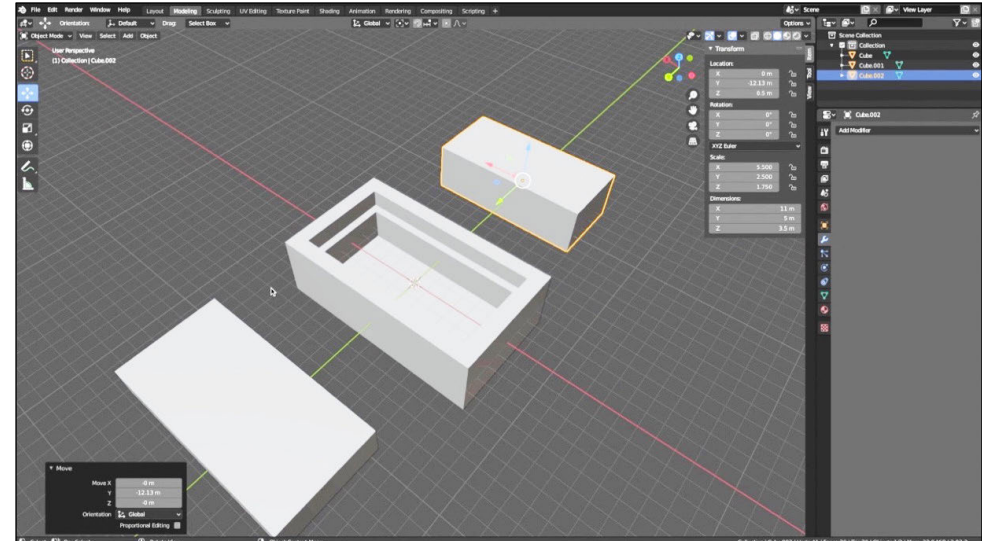
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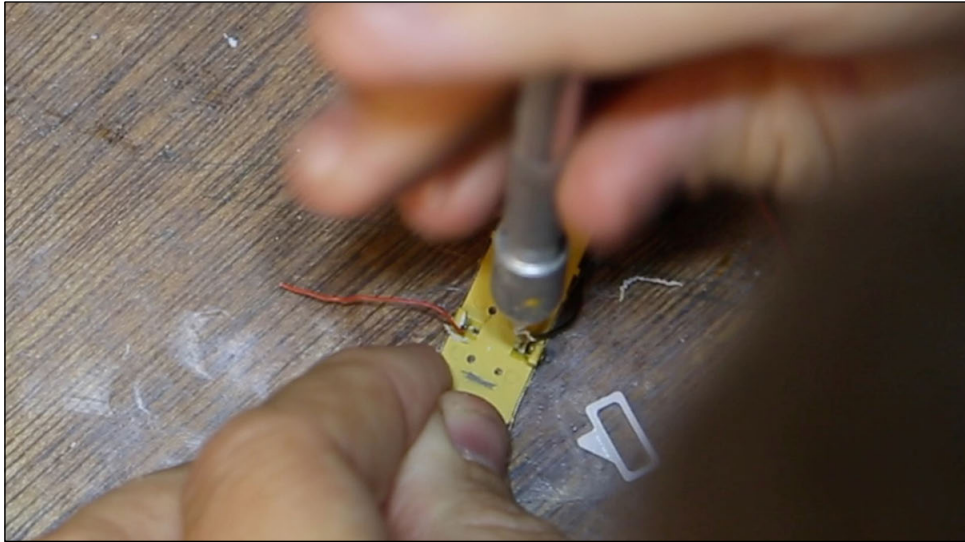
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19a, b, c, d (Above and facing page top and bottom). The cavity in the model for a speaker required creating a custom speaker baffle in Blender to be 3D-printed. In 19a, James created and sized three cubes to represent the speaker, the exterior of the speaker box, and the speaker box's reverberation chamber. In 19b, he stacked and aligned the



cubes to represent the speaker assembly's form. In 19c, using two Boolean exclusions, he carved out the echo chamber and speaker from the box. 19d shows the printed speaker baffle. The finished product was so exact in its dimensions that the speaker press-fit inside of it, not requiring any adhesive. The entire assembly was a perfect fit in the TrackMobile's bay.



20. James drilled a circular pattern of #68 holes into the bay cover to allow the sound to escape.

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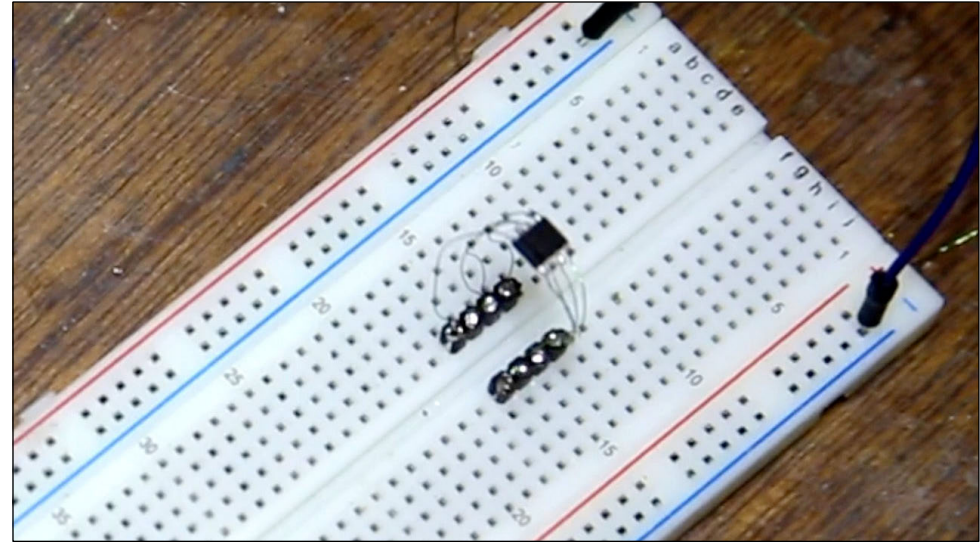
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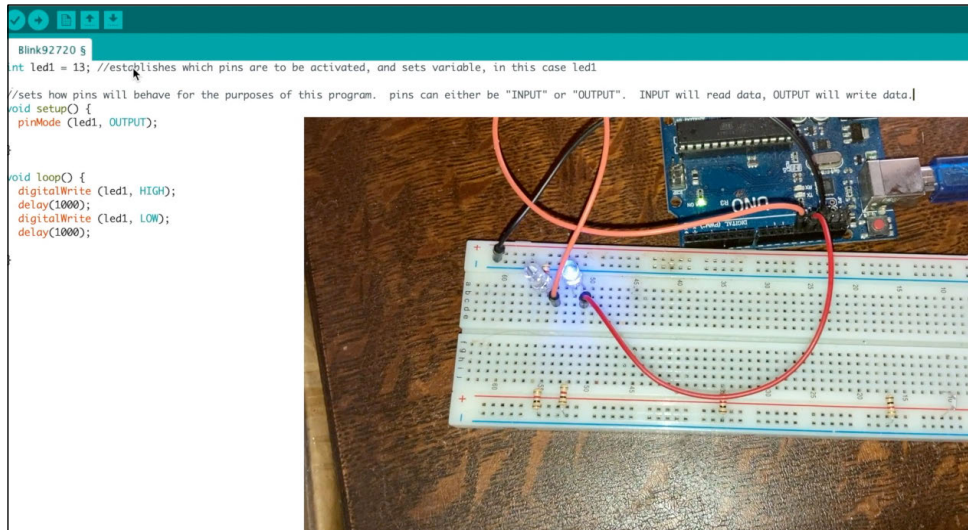


21. To control the strobe lights on the cab of the TrackMobile, James used a ATTINY13 chip to sequence the light flashes. Prototype strobes are rarely synchronized, with one flashing faster than another. He programed the chip to allow a slightly different off time for the two strobes, which would allow them to only be in sync once every 20 cycles. The ATTINY13 is a very small chip that can be programmed to turn on and off each of its six pins independently. It uses the same programming language as an Arduino.



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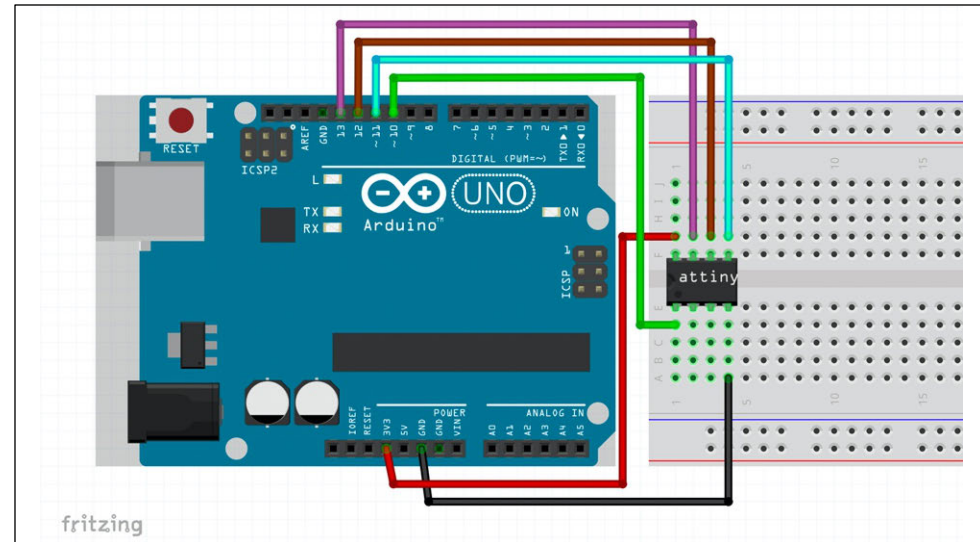
22. While “Blink” is the most basic sequence of programming for an Arduino, James required something more complex, controlling the blink rates for two LEDs in an offset, double strobe flash pattern simultaneously. After he struggled with it for about a day, James’ wife Allison, a bioinformaticist, had the required code figured out and running in under two minutes.

★★★★★
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23. After adjusting the code to work on the ATTINY13, James used the instructions he found at create.arduino.cc/projecthub/taunoerik/programming-attiny13-with-arduino-uno-07beba to reconfigure the Arduino into programming mode in order to write the code to the ATTINY13. This fritzing schematic shows the wire connections between an Arduino and the ATTINY13 to accomplish this. The Arduino is connected to a computer via USB.



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24. With the technical aspects worked out, James used a #78 bit in a precision chuck with his DeWalt drill for drilling the TrackMobile's body for the LED installations. He eased off the pressure and let the drill do the work, as well as using plenty of oil to lubricate the drill bit. Even so, he broke a few bits in the process.

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25. After drilling the #78 holes, James drilled countersinks for each headlight opening with a #68 bit. He drilled these by hand for greater precision, since he did not want to drill all the way through the body. The countersink was intended to minimize the potential contact between the exposed ends of the LED wires and the body of the TrackMobile.



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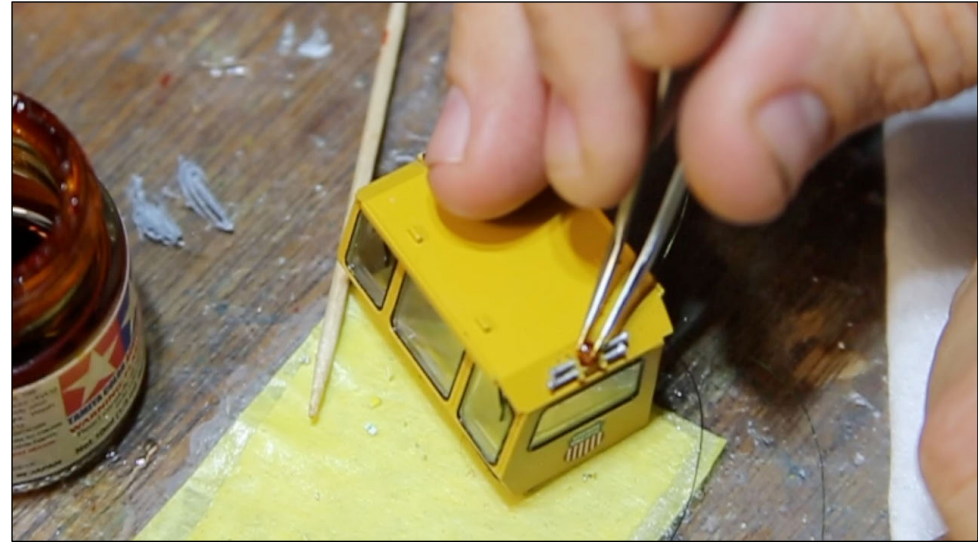
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26. James detached the rear walkway to assist in the drilling process. The walkway is a separate piece from the frame and is held in place by two pins. Gentle pressure on the pins was enough to pry it loose. James found it was better to reattach it before installing the LEDs to avoid wire tears.



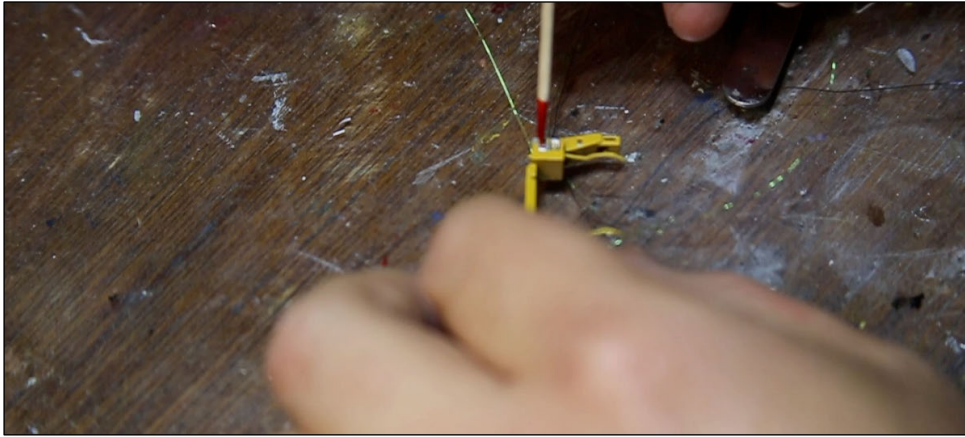
27. James clipped and filed the cast-on strobes flush with their mounts before drilling them out for the LEDs.



28. To mount the strobes, James countersunk the holes he drilled in the mounts with a 1/16" bit to provide space for the LEDs and to anchor the 1/16" clear acrylic tubing he used as the housing.



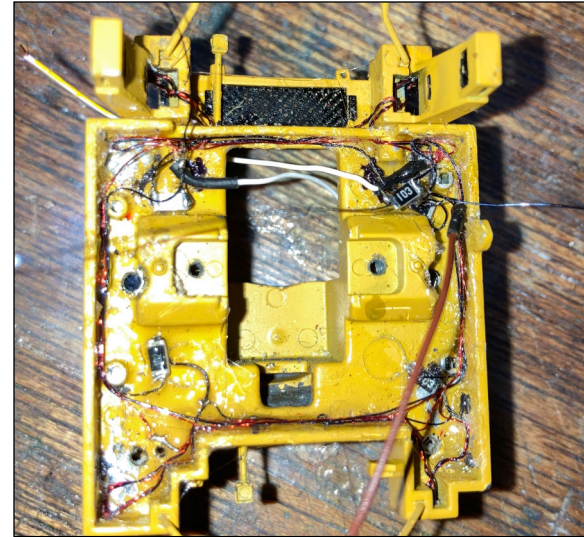
29. James wired 12 LEDs to install in the TrackMobile. Each was a warm white 0402 size LED, which he coated with silicone isolating paint to provide insulation for the LED leads and exposed wires. Allowing the paint sufficient time to dry was absolutely critical for this project.



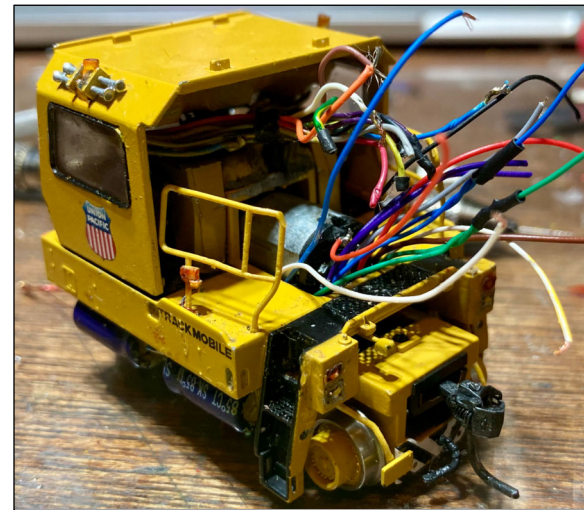
30. The LEDs for the taillights were painted with clear acrylic red and the hazard lights with clear acrylic orange. They were then set aside to dry.



31. To help obscure the electronics that were inside the cab, James both painted the decoder with a mix of Tamiya lemon yellow, orange, and black and tinted the cab windows with several coats of clear acrylic smoke. His goal was to be able to see some of the details in the cab, as well as the driver, without having the electronics ruining the view.



32. James used 1 k Ω resistors for the headlights and flashers, and 10 k Ω resistors for the taillights. Routing the headlight wires along one side of the TrackMobile and the taillight wires along the other, he avoided obstacles like screw holes or detail mounts. As can be seen, he used the silicone paint heavily, both as insulation for the wires and resistors, and as an adhesive to secure them to the frame.

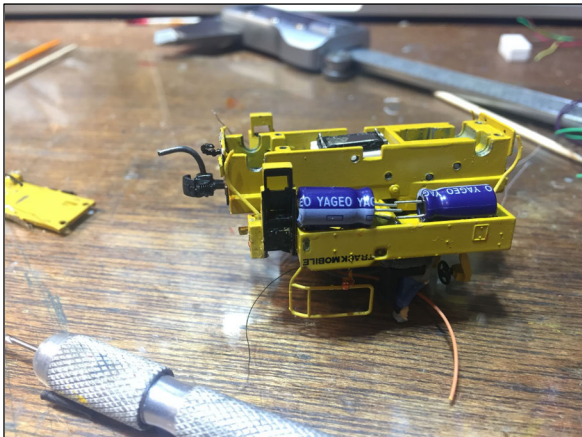


33. After the underframe wiring was complete, James soldered all the function common wires together with a blue 34-gauge buss wire. Similarly, all the lighting functions were soldered to the appropriate color of 34-gauge buss wire. Heat shrink protected all the solder joints. After this was done, he fed it through the back of the locomotive frame to the rear of the motor.



34. One of the problems with the TrackMobile is its short wheelbase, which results in poor performance on turnouts. Lacking space for a conventional stay-alive capacitor, James wondered if he could

wire a few together and hide them under the frame. George Bogatiuk of SoundTraxx recommended soldering four 25V 220µF capacitors together in parallel. The 25V 220µF capacitor is the one that comes with each SoundTraxx Tsunami decoder.



35. James tested several arrangements for the capacitors, making sure the polarities for the capacitors were aligned positive-positive, negative-negative before soldering them together, two to a side.



Also see the “What’s neat this week” weekly video podcast!

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36a, b. James' original idea of disguising the capacitors as air tanks beneath the TrackMobile frame

did not look convincing, as they were too bulky looking. Hiding the capacitors behind the roadwheels yielded more satisfying results, as the eye's attention is drawn to the wheels. The paint on the capacitors helps them hide in the background. James used hotmelt to attach the wheels, so removing them and placing them in alignment after taking this photo was easy.



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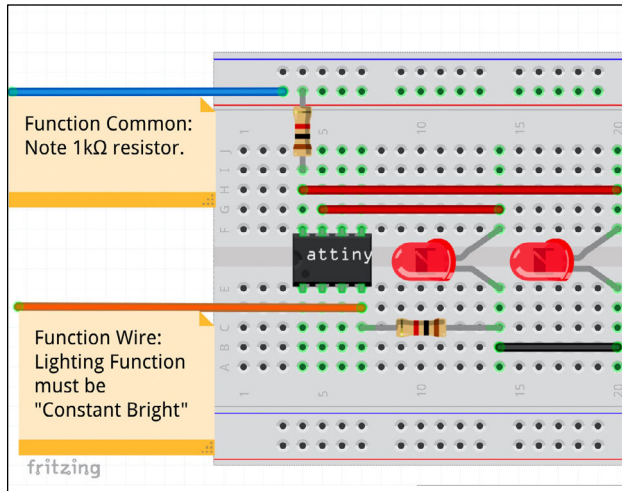
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ATTINY13's ground wired directly to the decoder function wire. On the LED side of the ATTINY13, the wiring is similar to connecting two lighting functions to a decoder, with one important difference. The ground is common, while the "function" pins are all positive.

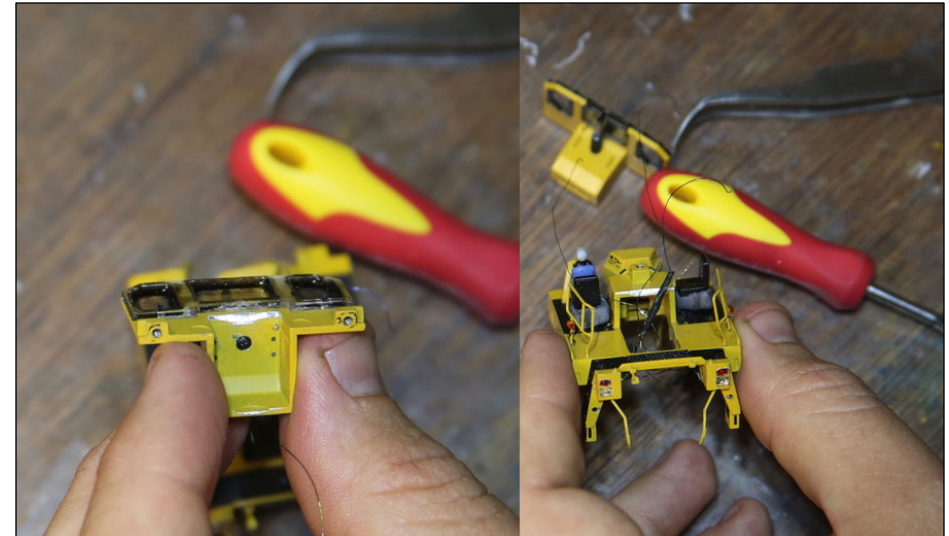


38. Here James shows how he soldered the ATTINY13 to the strobe LEDs. The decoder wires have not been added yet, but this shows the small size of the ATTINY13, which allows it to fit almost anywhere.



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39a,b. As part of reassembly, James had to cut a gap between the cab center console and the motor hood to pass the wires through to connect with the decoder in the cab. Completing this successfully, like colored wires were soldered together, with the joints covered with heat shrink tubing. For easier maintenance, he used 1mm pitch headliner pin and plug sets to make the motor, track power, and speaker unpluggable.



40. After successfully testing the TrackMobile, James closed the motor hood and tightened the screws for final assembly. Here it is seen complete, with twelve LEDs, a SoundTraxx TSU 1100 sound decoder, a 12mm speaker, and a four capacitor stay alive. Watch the video to see how James did it all.



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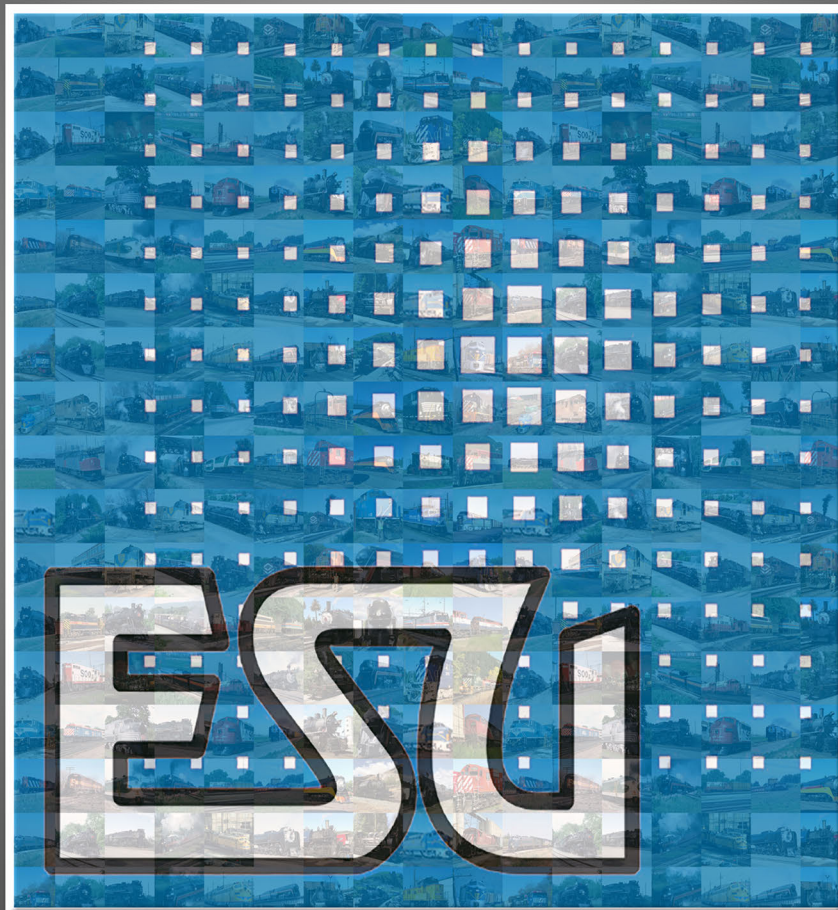
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**STEVE JURANICS ON HOW HE ADDED SIGNALS
TO HIS DCC LAYOUT ...**

**I'VE BEEN INVESTIGATING DCC SIGNAL SYSTEMS
AND SIGNALING OPTIONS FOR** several years. I even
designed and built a simple ABS (automatic block signalling)
system that operates standalone without a computer.

I hesitated diving into JMRI and relying on a computer to drive
the signals. Then Layout Command Control (LCC) appeared on
the horizon and added yet another consideration to the mix.

SIGNALLING A DCC MODEL RAILROAD | 2

I decided to attend the Amherst show in West Springfield, Massachusetts (late January every year) – I figured that would be the perfect opportunity to speak to some manufacturers and pick up the components necessary to install a working signal system.

I already had several signal masts in my inventory – I just needed the hardware to drive the signals, and then figure out how to operate it.

FIRST DCC SIGNALING DECISION

The first DCC signaling decision to make: do you want a computer working in conjunction with your DCC system to drive your signals?

Several manufacturers make components to drive simple signal aspects, like to go from green to red when a train enters a block. It's also very simple to wire signals to indicate turnout direction.

But these simple components do not indicate block occupancy over various routes and cannot talk to signals down the line. Some of these simpler signaling components are getting more sophisticated – and the new kid on the block, LCC, allows you to have standalone components capable of talking to one another.

I leaned in the direction of a standalone/LCC type system, but in reading some of the instruction manuals on programming the logic, I found them to be extremely confusing.

They claim to have default settings that make signaling easier to implement, but then you sacrifice some prototypical operation to get working signals. That starts to feel more like animated lights, and not really an operating signal system, which does not appeal to me.

MAKING MY CHOICE: JMRI

I chose to go with JMRI to drive my signal system. I knew Dick Bronson of RR-CirKits had developed hardware for both LCC

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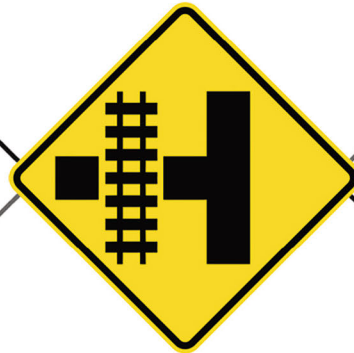
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SIGNALLING A DCC MODEL RAILROAD | 3

and JMRI signals, and that Dick is on the programming team for JMRI.

It also doesn't hurt that JMRI is free. I already had a computer hooked up to my NCE command station and regularly used JMRI's Decoder Pro. I have seen several of Dick's presentations at NMRA National Conventions, and that gave me the confidence that his signaling components lead the hobby.

So at Amherst, I went straight to the RR-CirKits booth and spoke to Dick for quite some time before the crowds arrived. I purchased the components necessary to set up a LocoNet and drive several signal masts.

IMPLEMENTING A JMRI SIGNAL SYSTEM

Steps for implementing a signal system driven by JMRI:

- A. Determine *where* you would like to place the signals
- B. Make gaps in the rails to isolate blocks

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- C. Determine how to throw turnouts, and if you need position feedback
- D. Set up turnouts and sensors in JMRI PanelPro
- E. Create the layout (signaled sections) in JMRI Layout Editor
- F. Create the signal masts in JMRI and have JMRI create the logic to drive the signals
- G. Determine how JMRI communicates with your signal driver hardware and program that hardware if necessary
- H. Install the hardware on your layout.

Let's walk through these steps in more detail; they're not as ominous as they sound when taken one at a time.

A. Where to place your signals

I chose turnouts and blocks visible to operators that required some protection from oncoming traffic. I did not put signals in areas where an operator could not see the aspect or where they really didn't serve a good operational function on the layout.

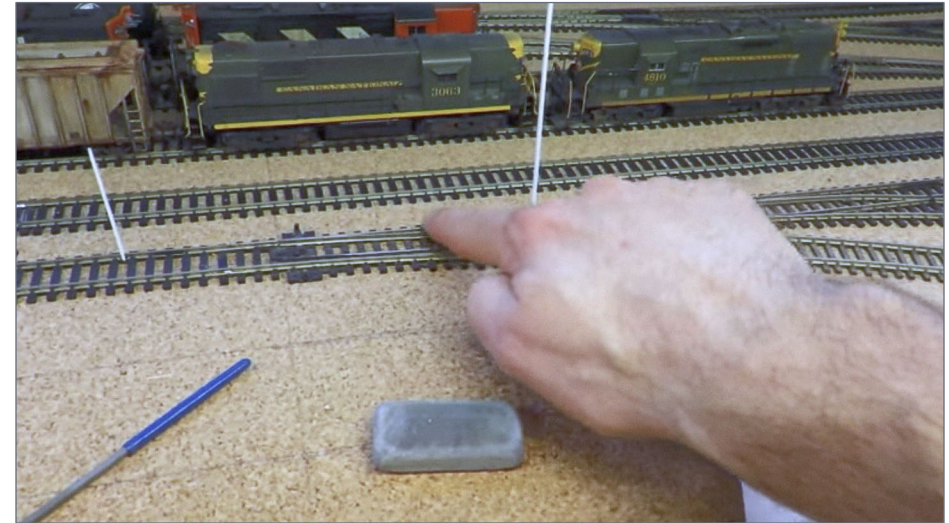
You typically place signals approaching turnouts or to protect long mainline runs. In JMRI you can only place a signal mast going into a turnout or at the break point between two blocks.

B. Gapping the rails to isolate the blocks

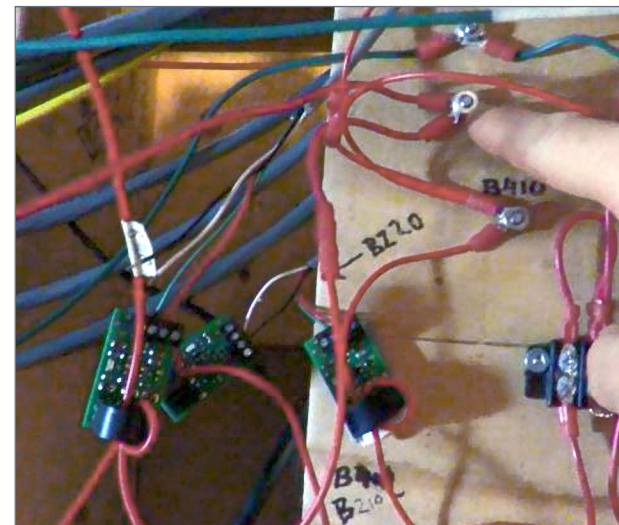
To correctly determine the logic for driving the signal aspects, rail gaps need to be placed near the signal locations and after any turnouts that create sidings or alternate routes [1].

Many manufacturers make block detection hardware. I prefer the coil type detectors, where you wrap a track feeder around a donut-shaped sensor, like an NCE BD20 [2]. You have no drop in track voltage with this type of sensor.

Almost all sensors operate by closing the loop between a feeder wire and a signal wire. The loop gets closed when the sensor detects current being drawn through the track feeder wire.



1. Marking gaps in one rail to isolate a block.



3. BD20s with red feeder wires to isolated rails looping through the current sensors.

C. Turnout control and feedback

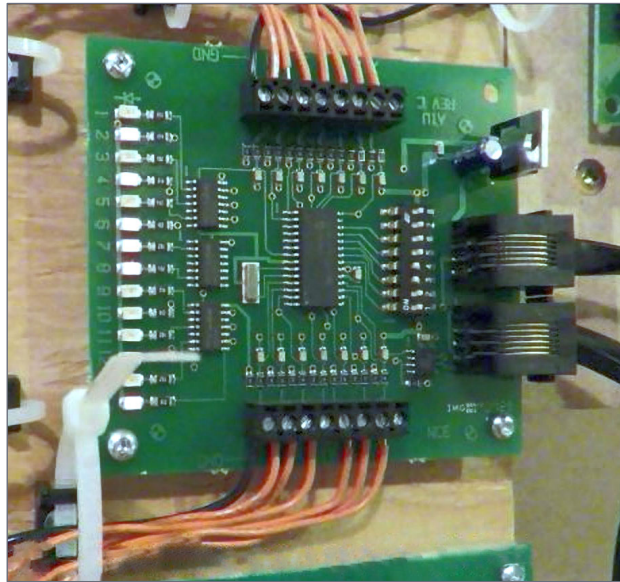
JMRI has the ability to throw your turnouts if you use DCC to control your turnouts. JMRI monitors the last command sent to the turnout over the DCC network.

But if you can also throw a turnout manually or from a panel switch, then you need some sort of sensor to monitor the turnout position. This can be very simple and operate the same as a block detection sensor.

You can connect wires to the Tortoise switch motor or other mechanical switch contacts, and when the connection is made by throwing the turnout, a signal goes to a detector. If you are using an NCE system, an Auxiliary Input Unit (AIU-01) can monitor turnout positions and feed that information to JMRI [4].

D. Setting up Sensors in JMRI

PanelPro has a set of tables. On the Sensor table, you give labels to the various signals feeding into JMRI. Once you have



4. NCE Auxiliary Input Unit (AIU-01) used to send feedback to JMRI.

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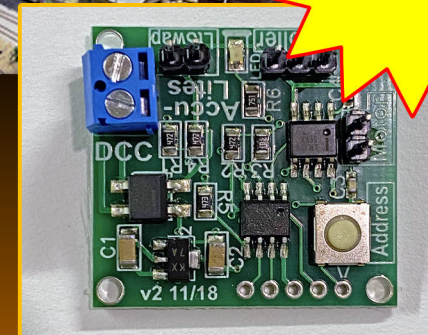
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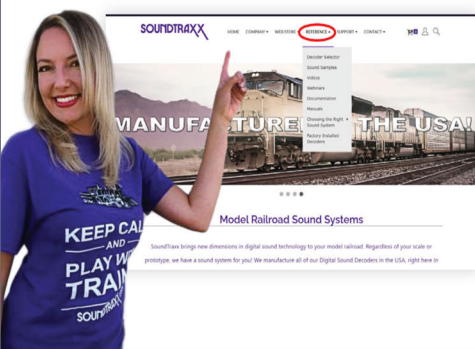
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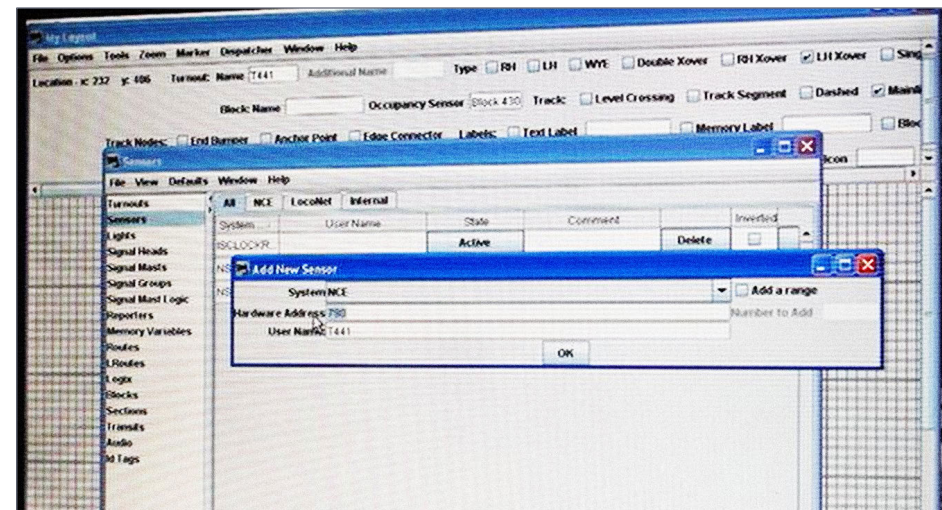
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SIGNALLING A DCC MODEL RAILROAD | 7



5. When you hit "ADD" Sensor, a pop-up box appears. You can add the address that corresponds to the AIU-01 output and then the label it.

the sensors set up [5], you then create your layout in JMRI Layout Editor.

E. Create your layout in the JMRI Layout Editor

Your layout in JMRI does not need to be created to scale and does not require all the sidings and sections if they're not part of the signaling system. You just need to represent the blocks and turnouts that do have signals in their correct orientation and sequence.

Assign the sensors to the related blocks and turnouts and test their operation right on the JMRI panels to make sure everything gets detected properly before proceeding.

F. Creating the signal masts in JMRI PanelPro

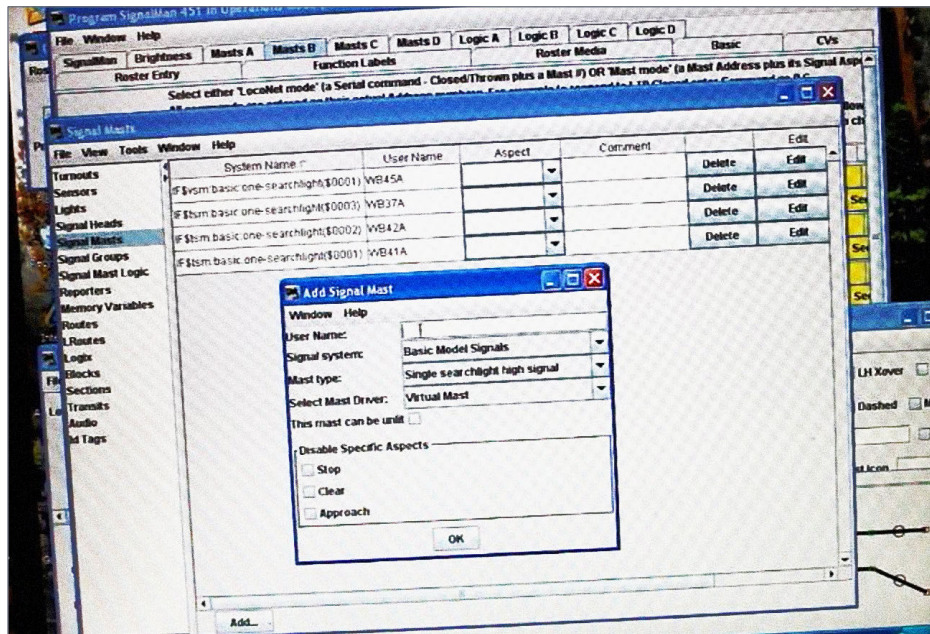
By this stage you should be familiar with using the tables in PanelPro. PanelPro has a separate table for setting up the

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signal masts. JMRI allows you to create a mast and use any one of many pre-programmed logic tables to drive the aspects on your signals.

JMRI already has many of the major railroad aspects pre-loaded in the software, or you can choose Basic Model Railroad aspects if you just want to keep it simple [6].

You may have some locations (such as a hidden section) where you do not have a physical signal, but on the real prototype there would be a signal. In these cases, you need to create a Virtual signal mast in Layout Editor. These signals appear on the computer, but don't appear on your layout. They're needed to properly communicate the logic to the signals on your panel.



6. When you select ADD Signal Mast, a pop-up box appears. I used Basic Model Signals but JMRI has pre-programmed logic for many major railroads available. You also choose the Mast type and Signal Mast Driver (virtual, DCC, or turnout signal).

Once you have the masts placed at all the turnouts and blocks on your panel, JMRI can discover the various routes and turnout positions and will auto-configure the logic for each of your masts.

This is probably the biggest advantage to using JMRI for signaling. With just a few clicks, it learns your layout and shows the correct aspects for whatever prototypical railroad you choose [8].

G. Send the signal aspect to your signal drivers

Now that you have the masts working in the virtual space on your computer, it's necessary to send that signal to some sort of signal driver hardware. Several manufacturers make hardware designed to work over the LocoNet system. I chose the SignalMan-S from RR-CirKits.

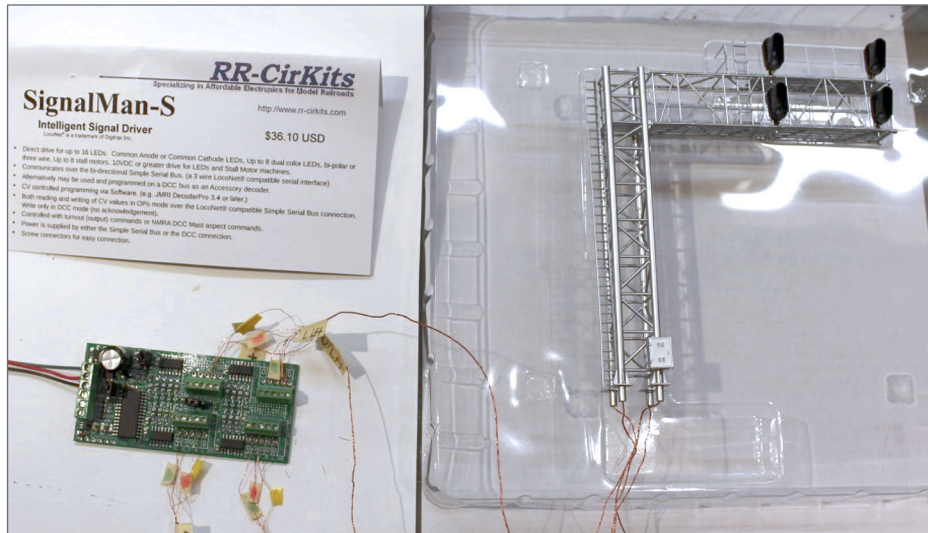
The SignalMan series operates just like a stationary decoder on your DCC track bus. You set up the SignalMan in Decoder Pro, just like you would set up an engine. You make a roster entry for each SignalMan, and tell the SignalMan what lamps (or LEDs) to light up when it receives a command from JMRI [7].

Each SignalMan has 16 output terminals and four common wire outputs, so you can run multiple Masts from a single unit, making it a very economical piece of hardware. It also has a lot of interesting features like fading from one aspect to the next and doing flashing lights.

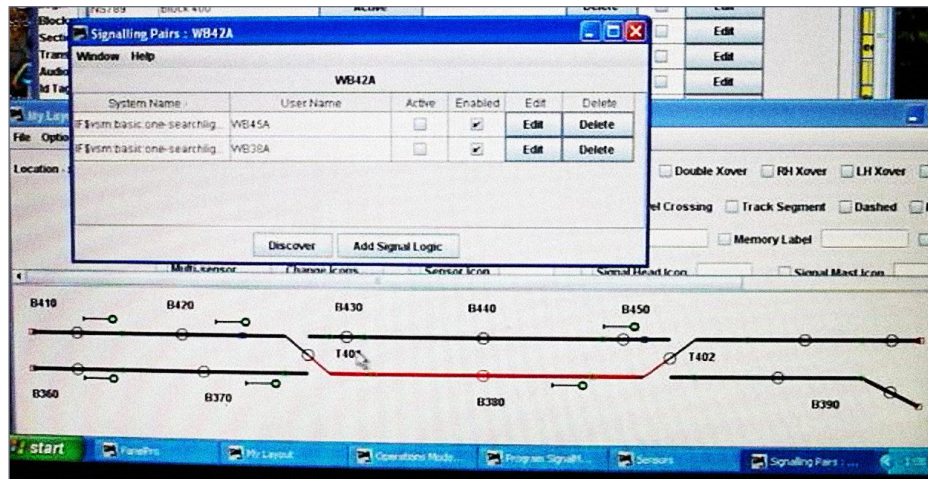
Once I learned a few simple steps, I found the SignalMan to be very easy to set up and operate. It does have the capability to set up the logic right on board, but I didn't need those features, since JMRI handles all the logic.

H. Installing your hardware

I programmed my SignalMan and masts at my bench, right next to the computer. Once I had them working correctly and matching the aspects shown on the computer screen, I



7. Wire the BLMA Four-head signal mast directly to one SignalMan-S to drive the signal aspects.



8. Setting up the signal mast logic. By clicking the Discover button, JMRI will find all masts down the line on possible routes.



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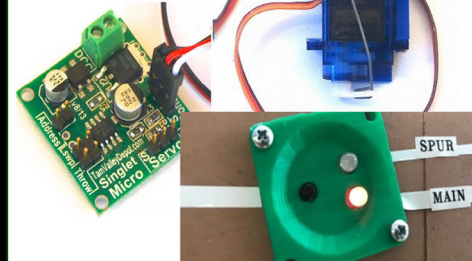
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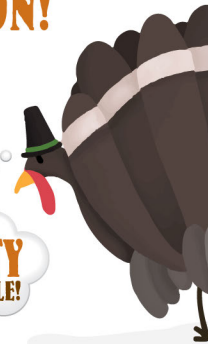
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SIGNALLING A DCC MODEL RAILROAD | 11



9. Two Signalman-S outputs drive two BLMA target signals. Each signal head has three individual LEDs.

disconnected the Signals from the SignalMan and installed some four-pin connectors to each mast's wires.

Then installing the signals became just a matter of placing the masts on the layout and running some wires.

Photo [9] shows the completed signals at the entrance to the interlocking. The signal aspects indicate block occupancy plus routing and turnout status.

CONCLUSION

I won't candy-coat it. Figuring out how to add a signal system to my layout involved a very steep learning curve. I had to figure out PanelPro, learn the SignalMan programming, figure out what hardware I needed, then install and wire it all.

But after painfully grinding through the setup of the first few masts over a few weeks, I breezed through next set of masts in

only a few hours. I also explain the entire signaling process in this five-part video series on my YouTube channel:

Signals on an NCE layout, part 1: youtu.be/8hCYF63Q07A

Signals on an NCE layout, part 2: youtu.be/xXaEOPcAn1k

Signals on an NCE layout, part 3: youtu.be/8Pz306USaAM

Signals on an NCE layout, part 4: youtu.be/FLYcqrVDD2w

Signals on an NCE layout, part 5: youtu.be/zdeAiAVVegA

Dick Bronson (RR-CirKits) readily provided help, as did the JMRI Group (groups.io/g/jmriusers).

I found the LocoNet and SignalMan components to be a very cost-effective option for driving my signals. Hopefully, this article will give you a boost up the learning curve. ☒



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STEVE JURANICS



Steve goes by the handle of “Muskoka Steve” on YouTube, and his channel is the Muskoka Central.

He built his first layout in his early teens before taking 30 years away from the hobby to experience life. He won his first modeling contest at age 16, and used the store credit to buy a Troller

Dual Power Pack.

Fast-forward to 2010 when Steve got back into the hobby and started working on The Muskoka Central Railroad. He was inspired by the scenery North of Toronto, Ontario called the Muskoka region. He models a proto-freelance railway based on the Ontario Northland and CN railways which run through that region. Steve is also the Superintendent of the NMRA Western Ontario Division.

Steve was the winner of the YouTube Model Builders Big Build contest; details of that build are on his YouTube channel. His channel features 20+ videos full of tips and techniques on a wide range of model railroading topics, including detailed steps on installing signals on his layout. See youtube.com/user/Moskoka.

Steve has also set up playlists with his favorite videos. ■



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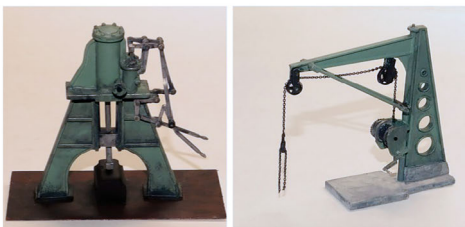
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1. The majority of the Jamestown yard lies to the left, with Tuolumne in the upper left and the Lyons Lake lumber loading operations on the far right.

Modeling from the prototype

Robert Schleicher visits Joe Heumphreus' Sierra Railway ...

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Model Railroad Hobbyist November 2020

OF ALL THE REAL RAILROADS THAT LONG-TIME MODELERS KNOW WELL, THE Sierra Railway remains one of the most recognized, thanks to PFM producing a replica of the pocket 2-6-6-2 articulated in the late 1950s. Modelers like that this compact locomotive looks realistic on the smallest model railroad, yet still gives a hint of that big steam look.



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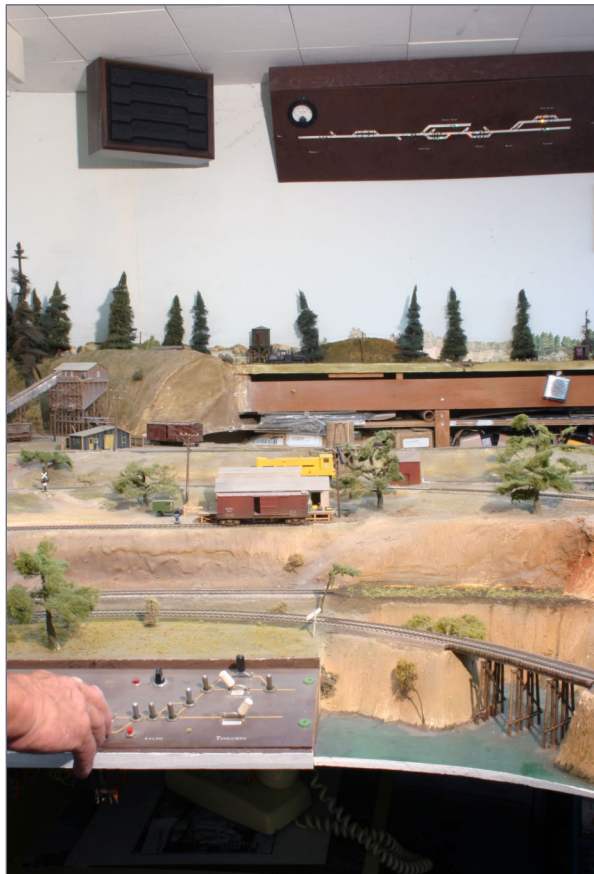
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The legendary John Allen had several, so his photographs added to the legend. The book *The Sierra Railway* appeared in 1960, not only being a great resource on a full-size railroad, but also including photographs of stations and industries as well as locomotives.

This book opened the eyes of many modelers because it documents a real railroad that you can capture in miniature. Most, like John Allen, just used the equipment – but a few, including Joe Heumphreus, *modeled the Sierra Railway itself*.



2. Joe has mounted the main control panel beside the Jamestown yard throat with an overhead schematic featuring illuminated block and turnout positions.



3. A brass NWSL 2-8-0 modified to represent the Sierra Railway number 24. Three scratchbuilt open excursion cars sit the on the siding in the background.

TAILOR-MADE FOR MODELING

The Sierra ran rails into pine forests but logging railroads, mostly three-foot gauge, carried on into the forests. The Sierra Railway interchanged with the famous West Side Lumber and the Pickering Lumber in the east and, in the south, with the Hetch Hetchy Railroad that was built primarily to construct the Hetch Hetchy dam.

The Sierra works very well as a model for a model railroad, thanks to its short trains, tight curves, plenty of bridges – not to mention an active interchange with both the Santa Fe and Southern Pacific at the west end – and with both charismatic narrow gauge and standard gauge logging railroads to the east.

The Sierra runs only about 30 miles north of the Yosemite Valley Railroad, so much of the scenic information that Jack

Burgess has perfected for his H0 scale Yosemite Valley Railroad applies equally to a model of the Sierra.

EQUIPMENT AND STRUCTURES

The Sierra had equipment like many of the Colorado mountain narrow gauge roads, but the Sierra ran a standard gauge operation in the relatively gentle foothills of the western Sierra Nevada mountains, right in the heart of the gold rush country.

The rolling hills did present access problems for the railroads because they rise ever higher from the San Joaquin valley floor to the edges of the rugged Sierra Nevada mountains. The Sierra hosted a wonderful array of wood and steel truss and trestle bridges that look designed to be modeled.



4. This water tower at Jamestown stands near the yard throat.



5. The Jamestown engine house and shops area accurately recreates the prototype.

The railroad's stations and some hotels had the upturned eaves of the pagoda style, popular in California during the early part of the last century. Most have burned down, however. Still, the roundhouse and shops have survived, so you can get a taste of what railroading in the Gold Rush country may have been like in the twenties and thirties.

The Sierra Railway evolved into a living museum in the sixties and it is now the Railtown 1897 State Historic Park. Those looking to preserve the shops retained most of the machinery, including the incredible overhead belt drives reaching down from the rafters to lathes and drill presses.

The Jamestown shops look similar to those on the East Broad Top in Pennsylvania; both sites stand as superb examples of





6. The turntable at Jamestown was a manually operated wood truss design – Joe has modeled it and powered it with a motor.



7. The car repair shops sit to the right of the roundhouse. These buildings still stand on the prototype, with the machinery inside as part of the California State Parks system.



8. The Jamestown station: one of the signature buildings on the Sierra Railway.

living history. The Sierra's open country made for a perfect setting for western movies, so the railroad became a back lot for Hollywood studios.

The 4-6-0 number 3 became one of the most famous steam locomotives in America, with various headlight and stack changes to back-date it to the mid-1800s. This served to depict the world as it was in the past – and, most recently, in the film "Back To The Future III."

The Sierra took part in the per diem freight car leasing scheme of the seventies, so cars with the round-X Sierra herald could be seen all across America.

The Sierra Railroad was sold to Silverfoot, Inc in 1980, which in turn sold it to the Sierra Pacific Coast Railway in 1995. In 2003 it merged with the Yolo Shortline Railway.

SMALL LOCOS AND TIGHT CURVES

The Sierra's locomotive roster could have been a wish list for a model railroader with limited space. The Sierra had at least one example of just about every small steam locomotive and some first-generation diesels as well.

The Sierra Railway purchased some of the smallest locomotives available, with several 2-8-0 engines fitted with 36-inch drivers. This resulted in locomotives about the size of many three-foot narrow gauge engines, but with wider cabs and tenders.

The curves on the Angels Branch are tighter than many on three-foot-gauge lines. As a result, the locomotives the Sierra ran on the branch include the aforementioned 2-8-0s, three Shays (two two-truck, one three-truck) a Heisler, and four 4-4-0s. The Sierra also owned five 2-8-0s, one 2-6-0, two 2-6-2s, two light 2-8-2s, two 0-6-0 switchers, and that well-known 2-6-6-2 articulated.



9. The station at Lime Junction, like all of the other buildings on the layout, Joe scratchbuilt from milled basswood sheet and strip stock.



10. The cement bins at Lime Junction serve three tracks, two to load the bins and the third to reload crushed limestone.



11. Logs and lumber made up much of the Sierra Railway's main source of business, so Joe has included one of the Westside Lumber Company sawmills at Tuolumne. The

Heisler is a Westside brass import.

In 1955, two Baldwin S-12 diesels took over most operations, and the railroad currently runs GP7, GP9, and GP20 diesels, with one S-12 Baldwin in storage.

There have been several brass replicas of the Sierra's locomotives including the 4-4-0 (similar to the Rivarossi Reno and Genoa) by PFM, 4-6-0 number 3, the number 28 small 2-8-0, 2-8-2 number 47, the number 10 Shay, number 9 Heisler, and a Westside Lumber Shay.

The most famous of the Sierra steamers remains their 2-6-6-2 articulated made in brass by PFM. Mantua (later Model Power) made a similar ready-to-run die-cast model. Arbour Models made number 3, the movie star 4-6-0 as a metal kit. Northwest Short Line made the compact number 18 (a medium-size 2-8-0 with 48-inch drivers) in brass.

The short passenger coach and combine stand out as probably the most famous images of the Sierra Railway. The Sierra did operate conventional 60-foot open-platform passenger cars, but found the shorter cars to be a necessity – along with the compact 2-8-0s – for the tight curves on the Angels Branch. Binkley models made a plastic version of the cars. MDC also made similar combines and coaches, but they are not accurate replicas of the Sierra's cars.

JOE'S SIERRA RAILWAY LAYOUT

Joe Heumphreus' recreation of the Sierra Railway fills 15 x 20-feet of his garage. He used L-girder construction but, in place of 1x3s and 1x2s, he used 2x4s and 1x3s so he was able to support the layout from the walls but with just two legs.

Joe installed plywood sub-roadbed and Homosote roadbed, but completed all the wiring from the control panel to terminal



12. Tuolumne includes a wye (out of the frame) to allow turning the locomotives for their return run back down the hill to Jamestown.



13. This log siding is the first stop on the Sugar Pine Railway.

strips near each town before laying any track. He finished the layout in 1972, long before DCC, so the layout has many electri-



14. The Sugar Pine Railway, part of the Pickering Lumber Company, had a station at Lyons Lake.



15. Notice the complex rigging for the log-loading operations located at the Lyons Lake area.

cal blocks. An illuminated display high on the wall shows which mainline block is assigned, and the direction of each turnout. The layout has two mainline cabs that can control any block, and four additional cabs dedicated to the major towns.



16. Joe used MDC models to represent the short combine and coach built for the Angels Branch of the Sierra Railway. He scratchbuilt the longer coaches and open excursion cars.



17. Joe scratchbuilt the unique cabooses of the Sierra, including this baggage/coach/caboose combine.



Three telephone handsets connect to the dispatcher at the main control panel. The layout has Florescent Sylvania “Criti-color” fluorescent lights behind 1x6 fascia boards above the aisles illuminate the layout.

At an NMRA Convention open house in 1970, John Allen (who did not care for fluorescent lighting) commented, “Joe, I like your lighting.” When Joe pointed out that those were fluorescents, John’s quipped “Joe, I know a fluorescent when I see one.”

The track is all handlaid code 100 rail on wood ties. Joe scratch-built all the structures. He has examples of brass locomotives made to be exact replicas of the Sierra’s roster plus some stand-ins for the 0-6-0 and larger 2-8-2.

For the modern Baldwin S-12 and GP7, Joe repainted Athearn models. He also repainted one of the cabooses in modern yellow and red. Joe also has a 1:29 scale scale outdoor Sierra Rail-



18. The number 1 caboose is a Central Valley kit modified to match the prototype.

way, with scratchbuilt cabooses and excursion cars, a Bachmann Pickering Lumber Company Shay, and a GP9.

Joe designed the layout to be point-to-point, with the Southern Pacific and Santa Fe interchange at Oakdale, then proceeding east through Jamestown, Sonora, and Ralph, ending at the wye at Tuolumne. The layout includes a connection with the Pickering Sugar Pine lumber Company logging operation at Ralph that extends to Lyons Lake.



19. The locomotive that made the Sierra Railway so well known to model railroaders, PFM’s replica of the number 38 Sierra Railway 2-6-6-2.



20. The Sierra’s first diesels were a pair of Baldwin S-12s. Joe repainted Athearn models to recreate the pair.

If Joe desires oval operation for guests, or to test equipment. He uses the crossover at Oakdale that leads to a hidden track around half the room to reconnect at Oakdale. Oakdale, in effect, works as a visible staging yard. The majority of the point-to-point operations begin at Jamestown with its turntable and end at Tuolumne with a wye.

Joe operates the layout with a thumbtack system similar to what John Allen used. The small tacks fit in a hole in the B end of each car. Joe has color-coded the tacks for each town, with a number for the spot in that area.

Joe uses a Sierra timetable from the 1930s to provide train numbers and times.

Joe's Sierra Railway may be a somewhat old-school, but it stands as a great example of a prototype just begging to be modeled!



21. The Sierra is still in operation with a series of GP7 diesels. This is a repainted and decaled Athearn model.



22, 23. The Sierra was one of the railroads that contributed their name to the pool of per-diem leased box cars in the seventies, so the remote little line became known across America.



24. Joe also operates a 1:29 scale Sierra Railway outdoors in his garden. The Aristo GP7 dwarfs the HO version.

A RIDE ON MY SIERRA

by Joe Heumphreus

Like the real Sierra, our HO version runs from Oakdale east to Tuolumne in California's Mother Lode Country. Oakdale has an interchange with the Southern Pacific and Santa Fe in real life; our Oakdale has a collection of storage tracks over the workbench, with a turntable partially hidden in a tunnel, and three-track departure yard.

As we pass the dwarf signal at yard limits, we enter the mainline. We will have to imagine the towns of Paulsell, Warnerville, Hetch Hetchy Junction, and Chinese, as our train enters a tunnel for a sixty-foot hidden run. It will reappear from the tunnel portal near the last switch of the Oakdale yard; we can cross through the crossover and make additional loops of the mainline (this is our chance for continuous running on the layout) or continue up the hill to Jamestown.

At the top of the grade, the main curves to the right, while ahead sits Jimtown. We almost expect the stars from the "Petticoat Junction" TV series in the water tank to our left! Jamestown has our engine and car service facilities. We store passenger and work equipment here.

Leaving the passing siding at Jamestown, we pass over the switch to the Angels Branch and approach Lime Junction – the prototype named this after the perpetual white dust from the U. S. Gypsum operation. That short passing track on my layout actually is prototypical length!

East of Lime Junction, we enter another tunnel and exit at Sonora. The trackwork here follows the layout at the real Sonora in the early part of the century when the Standard Lumber Company had a mill where a Safeway store now

stands. We've moved the present freight station to the area where the prototype passenger station once stood.

From Sonora, we again proceed around the loop to Ralph, the highest point on the mainline. Here the Sugar Pine/Pickering Lumber logging railroad leaves the joint trackage it uses from Sonora and continues around the room to Lyons, where we have modeled a log reloading operation.

Leaving Ralph, we enter Tuolumne, pass a runaround track, and end our mainline run alongside a model of the Tuolumne station. The engine will be turned on the wye for the run back to Oakdale.

Tuolumne served as the home of the Westside Lumber Company narrow gauge logging railroad. We have an old-time sawmill located there to remind us of that.

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25. A scratchbuilt pair of 1:29 scale excursion cars and a baggage/coach/caboose.



26. A Bachmann Shay repainted as the Sierra Railway number 10 hauls logs for the railroad in Joe's garden. The HO version can be seen at the bottom of the frame.



27. The tiny Pickering Limber Company caboose, recreated in HO and G scale.

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TEN SIGNIFICANT FACTORS THAT MAXIMIZE THE SATISFACTION FROM CREATING THIS MODEL RAILROAD

1. Why did he select this particular real railroad(s)?

I narrowed my list down to three railroads: the Virginia and Truckee, the Yosemite Valley and the Sierra. There were books and more information on all three. I picked the Sierra because it was still in operation and I have always been interested in the Gold Rush country of California. Trips to California along state Route 49 passed through Jamestown, with examples of the Sierra Railway's original roundhouse and locomotives and the incredible scenery.

2. How did he determine which portion of the real railroad to model?

The Jamestown yard and shops are the heart of the Sierra Railway so they have been recreated. The line to Tuolumne was also a must, but I opted for the interchange with the Pickering logging railroad rather than the Angels Branch.

3. How did he decide on which era or eras to recreate?

Since the railroad is still operating, I opted to recreate 1975.

4. What type of freight and passenger operations did he recreate?

The current operations include both interchange freight from the Southern Pacific and Santa Fe as well as passenger traffic as tourists and fan trips.

5. What were the most important factors he considered when designing the layout to fit the space?

Jamestown was the heart of the Sierra Railway, so I positioned it in the center of the layout room.

6. What are the defining (signature) structures?

The depots at Sonora, Jamestown and Tuolumne and the Jamestown roundhouse and shops were each distinctive buildings on the Sierra so they are all recreated on the layout.

7. What are the defining (signature) scenes?

The bridges over the Tuolumne River are landmarks on the line as are the gently rolling hills. Since logging was the industry that made the Sierra's link to the Santa Fe and SP so important, I recreated the Pickering log loading area to illustrate one source of most of the railroad's freight traffic.

8. How did he decide on the locomotive roster?

The most significant locomotives have been available in brass. I have the 2-6-6-2 number 38, the 4-6-0 number 3, the small 2-8-0 number 28, the 2-8-2 number 47 (as a later era example), the number 10 Shay, number 9 Heisler and a Westside Lumber number 3 Shay,

9. How did he decide on the mix of cars in the freight and passenger car fleet?

The signature passenger cars on the Sierra were the Angels Branch short combine and the number 2, 301 and 317 open-side passenger excursion cars. The Sierra number 7 and 9 cabooses were unique, as was the Pickering Lumber number 2. All of these cars are scratchbuilt.

10. What research sources were most useful?

Sierra Railway by Dorothy Newell Deane, 1960 Hardcover

Rails In The Mother Lode, Adolf Hungry Wolf (aka Adolf Gutohrein), Kratville publications

The Movie Railroads, Larry Jensen, Darwin Publications

Last of the Three-Foot Loggers, Alan Krieg, Golden West Books and Pacific Railway Journal

There are also some more recent reference works:

The Sierra Railway, by Stephen Mikeselli in the *Images of Rail* series. Arcadia Publishing (2016)

TEN SIGNIFICANT FACTORS *CONTINUED ...*

ADDITIONAL REFERENCE SOURCES

Books:

Pioneer Railroading in Old Tuolumne: the "Short Line" to Yosemite; the Sierra Railway; Hetch Hetchy Railroad (Chispa, Volume 9 #4, April-June, 1970) . 12 pages by Ted Wurm & Dorothy Newell Deane, published by Tuolumne County Historical Society (1970)

When Steam was King: Railroads of the Central Mother Lode Region of California: Sierra Railway, Pickering Lumber Company, West Side Lumber Company, 241 pages by Gerald French, published by Eureka Publishing LLC, Petaluma, CA (2007)

Maps:

The U.S. Geological Survey Topographical maps for Sullivan Creek:

www.topozone.com/california/tuolumne-ca/stream/sullivan-creek-13

Sierra Railway Historical Society, P.O. Box 1001, Jamestown, CA 95327.

www.facebook.com/Sierra-Railroad-Historical-Society-162829403831293



JOE HEUMPHREUS

Joe's dad was a Lionel dealer, so his first memory is watching his dad, two cousins and an uncle arranging tracks in a corner of the living room on Christmas afternoon.

Years and layouts later he built his final HO layout in the home where he now lives. Linn Wescott's mother lived about a mile from the store, and Linn would drop by when in town. Joe invited him to dinner, and Linn gave him some great advice on constructing the benchwork. On one other occasion there was a convention in town, and a number of well-known modelers, including John Allen, visited.

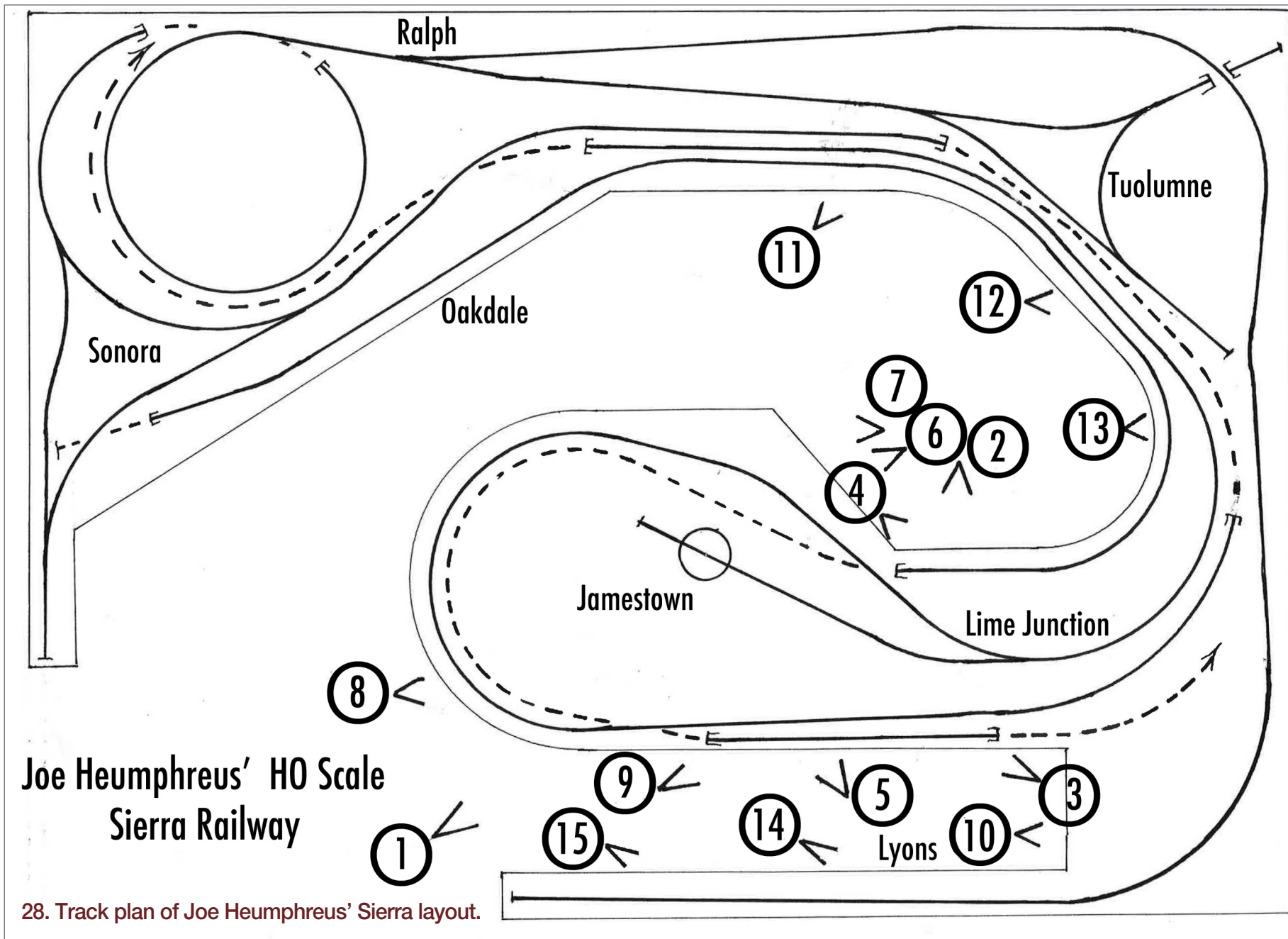
About 17 years ago he switched to large scale trains. He removed the HO, and moved his railroading to the backyard. ■

ROBERT SCHLEICHER



Robert was editor of *Railmodel Journal* for 19 years and, prior to that, editor of *Model Railroading* magazine. He has also authored over a dozen model railroad books including the *Tyco Model Railroad Big Book Of Model Railroad Track Plans* and three books for Lionel. Bob has been a consultant to

several manufacturers and helped to kick-start the Railroad Prototype Modelers concept. He is modeling the standard gauge Colorado & Southern in northern Colorado circa 1959 in HO scale. ■



NOTES ON THE TRACK DIAGRAMS

All of the layout drawings are single-line schematic diagrams of the route of the mainline, with no double-track or other parallel tracks or sidings shown. If two railroads run side-by-side, the drawing shows both tracks. The drawings do not illustrate where minor tunnels or bridges may be placed or any other scenic details. The thicker lines show the track center lines, the thinner lines indicate the exterior walls and the inner edges of benchwork. The circled numbers indicate the location of photographs. The individual capital letters in pairs help identify where hidden track disappears and reappears. ☑



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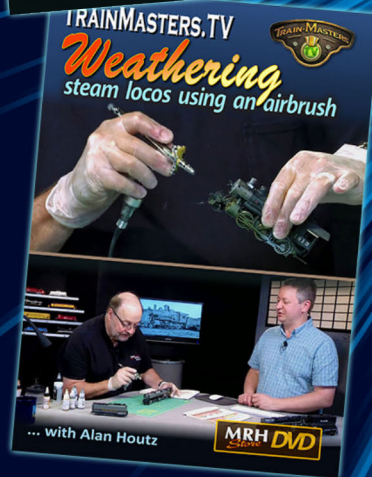
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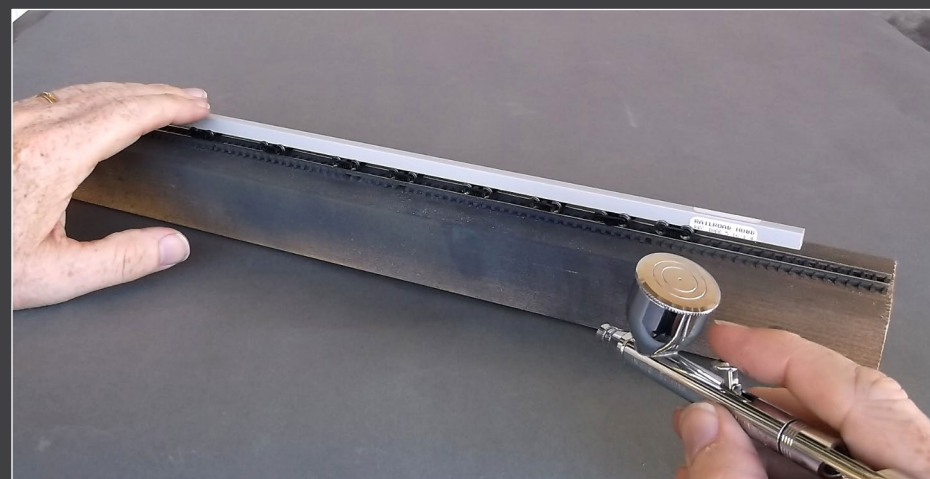
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Truck painting jig



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MITCHELL VALDER PAINTS HIS TRUCKS AND
 WHEELS ALL AT ONCE WITH THIS SPECIAL JIG ...

I DO NOT ENJOY HAND-PAINTING MY TINY N SCALE wheelsets to remove the shine, and hand-painting N scale trucks isn't particularly fun for me either. Yet the black unpainted trucks with silvery wheels don't look realistic.

So, I got to wondering how I could paint the trucks with the wheels still in them successfully, and I came up with this jig [1]. It's just a piece of styrene 5/16" x 1/4" square tubing with

TRUCK PAINTING JIG | 2

1/16" holes drilled down the center and reamed out gently. The trucks are held in place on the tube with their own pins.

To paint the trucks and wheels, I roll the trucks back-and-forth on some scrap track while I airbrush. This ensures the face of the wheels get covered evenly. It works great, and it's a lot easier and faster than hand painting. It also saves the hassle of removing the wheelsets from all the trucks to paint them separately in a wheelset-painting jig.

MRH STAFF: MAKING AN HO JIG

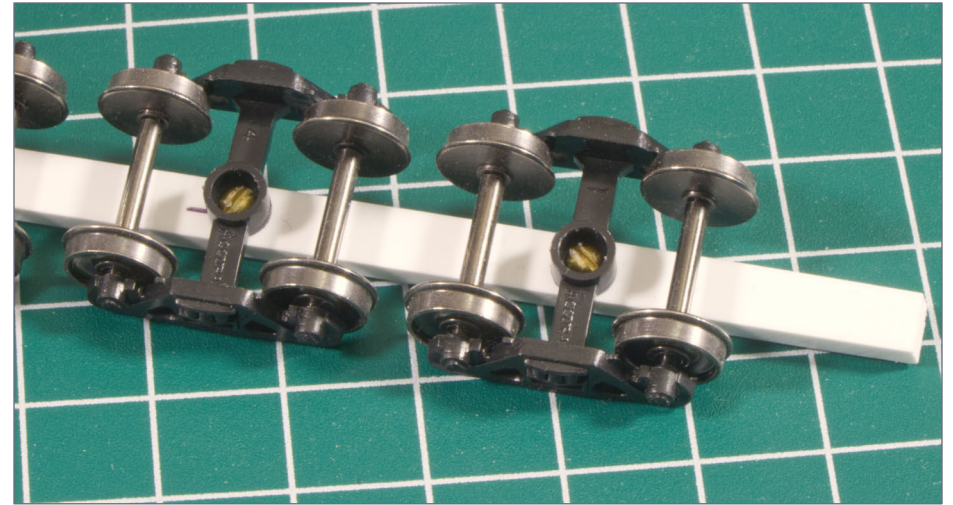
We liked Mitchell's truck jig idea so much we decided to use it to make our own version for HO trucks.

For our HO truck-painting jig, we used a 1/4" x 1/8" styrene strip 12" long. We drilled #50 holes every 1-3/8" and then tapped them for 2-56 screws. Finally, we used 3/16"-long 2-56 round-head screws to hold the trucks in place [2, 3].



2. We liked Mitchell's N scale truck painting jig, so we made one in HO to try out. See the text for details.

TRUCK PAINTING JIG | 3



3. We drilled #50 holes every 1-3/8" and then tapped them for 2-56 screws. We used 3/16"-long 2-56 round-head screws to fasten the trucks to the jig.

We found we didn't really need a piece of track, but it did help to have something elevated to work with, so we just used the back of an old passenger car box bottom turned upside-down. We then rolled the trucks back-and-forth in the spray booth to evenly cover the wheels with paint.

It worked like a charm! We let the paint dry on the trucks for several hours, then came back with Q-tips soaked with ethyl acetate to remove the paint from the wheel treads [4].

We found it helps to roll the trucks around on a piece of clean white paper, since the paper helps pick up any damp paint residue from the treads. The white paper makes it easy to see paint that's removed.

It's best to let the paint set up first before trying to remove it from the treads because otherwise you risk damaging the paint

finish on the wheel face – and that’s the whole reason we’re using this jig! In this case, patience paid off.

We like this method of getting a good base coat on the trucks and wheelsets. From here, the coat of paint provides some nice tooth for further weathering the trucks and wheels with PanPastels.

Thanks, Mitchell! ✓

You can find a shopping list for the materials listed in this article at this link:

<https://mrhmag.com/magazine/mrh2020-11/truck-jig>

★★★★★
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4. After letting the paint set up for several hours, we came back with a Q-tip soaked in ethyl acetate and removed the paint from the wheel treads and flanges by rolling the trucks around on a clean piece of white paper.

MITCHELL VALDER



In the beginning, there was a Marx 027 layout that the whole family enjoyed. That train set disappeared after Mitch was caught peeing in the smoke bottle, but the foundation was formed. In high school, he met lifelong friend and railroad photographer Dale Sanders who showed him mind-blowing things like hand laying code 55 track and airbrush-

ing locomotives. Years later, Mitch joined an Sn3 sectional group called Red Mountain Narrow Gauge. It was great fun, but the tedium of set up and tear down wore on him. So, he built a basement layout in N scale modeling the Northwestern Pacific RR. After dismantling that project for a recent move, Mitch was recruited by the Bay Area S Scale club to help create their new layout. But secretly Mitch has started his own venture, an HO logging pike set in California's North Coast.

Mitch is a retired Air Force aviator. He lives quietly in Loomis, CA with his wife and three cats. ■

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Engine Black			MRY 4028	HL 3000S VIOA F121	16-01	
Storm Pearl Black			MRY 4255	MRY 1107	16-08	
City Black			MRY 4107	MRY 1101	16-47	
Weathered (Unfinished) Black			MRY 4250	HL 2002 VIOA F104	16-05	
Reifer Grey			MRY 4067*	MRY 4103	16-04	
Reifer White			MRY 4023	HL 3004 VIOA F101	16-02	
Gring Black			MRY 4087	HL 2002 VIOA F116	16-03	
Concrete Red			MRY 4060*	HL 2001 VIOA F102	16-08	HL 4014-0142 grey (MRY 4060's grey is a good match)

* Indicates a color that will not match exactly. All MDOE/Ls are for a single gallon. HL 3000S, HL 2001S, HL 2000P, HL 2001, HL 2002, HL 2003, HL 2004, HL 2005, HL 2006, HL 2007, HL 2008, HL 2009, HL 2010, HL 2011, HL 2012, HL 2013, HL 2014, HL 2015, HL 2016, HL 2017, HL 2018, HL 2019, HL 2020, HL 2021, HL 2022, HL 2023, HL 2024, HL 2025, HL 2026, HL 2027, HL 2028, HL 2029, HL 2030, HL 2031, HL 2032, HL 2033, HL 2034, HL 2035, HL 2036, HL 2037, HL 2038, HL 2039, HL 2040, HL 2041, HL 2042, HL 2043, HL 2044, HL 2045, HL 2046, HL 2047, HL 2048, HL 2049, HL 2050, HL 2051, HL 2052, HL 2053, HL 2054, HL 2055, HL 2056, HL 2057, HL 2058, HL 2059, HL 2060, HL 2061, HL 2062, HL 2063, HL 2064, HL 2065, HL 2066, HL 2067, HL 2068, HL 2069, HL 2070, HL 2071, HL 2072, HL 2073, HL 2074, HL 2075, HL 2076, HL 2077, HL 2078, HL 2079, HL 2080, HL 2081, HL 2082, HL 2083, HL 2084, HL 2085, HL 2086, HL 2087, HL 2088, HL 2089, HL 2090, HL 2091, HL 2092, HL 2093, HL 2094, HL 2095, HL 2096, HL 2097, HL 2098, HL 2099, HL 2100, HL 2101, HL 2102, HL 2103, HL 2104, HL 2105, HL 2106, HL 2107, HL 2108, HL 2109, HL 2110, HL 2111, HL 2112, HL 2113, HL 2114, HL 2115, HL 2116, HL 2117, HL 2118, HL 2119, HL 2120, HL 2121, HL 2122, HL 2123, HL 2124, HL 2125, HL 2126, HL 2127, HL 2128, HL 2129, HL 2130, HL 2131, HL 2132, HL 2133, HL 2134, HL 2135, HL 2136, HL 2137, HL 2138, HL 2139, HL 2140, HL 2141, HL 2142, HL 2143, HL 2144, HL 2145, HL 2146, HL 2147, HL 2148, HL 2149, HL 2150, HL 2151, HL 2152, HL 2153, HL 2154, HL 2155, HL 2156, HL 2157, HL 2158, HL 2159, HL 2160, HL 2161, HL 2162, HL 2163, HL 2164, HL 2165, HL 2166, HL 2167, HL 2168, HL 2169, HL 2170, HL 2171, HL 2172, HL 2173, HL 2174, HL 2175, HL 2176, HL 2177, HL 2178, HL 2179, HL 2180, HL 2181, HL 2182, HL 2183, HL 2184, HL 2185, HL 2186, HL 2187, HL 2188, HL 2189, HL 2190, HL 2191, HL 2192, HL 2193, HL 2194, HL 2195, HL 2196, HL 2197, HL 2198, HL 2199, HL 2200, HL 2201, HL 2202, HL 2203, HL 2204, HL 2205, HL 2206, HL 2207, HL 2208, HL 2209, HL 2210, HL 2211, HL 2212, HL 2213, HL 2214, HL 2215, HL 2216, HL 2217, HL 2218, HL 2219, HL 2220, HL 2221, HL 2222, HL 2223, HL 2224, HL 2225, HL 2226, HL 2227, HL 2228, HL 2229, HL 2230, HL 2231, HL 2232, HL 2233, HL 2234, HL 2235, HL 2236, HL 2237, HL 2238, HL 2239, HL 2240, HL 2241, HL 2242, HL 2243, HL 2244, HL 2245, HL 2246, HL 2247, HL 2248, HL 2249, HL 2250, HL 2251, HL 2252, HL 2253, HL 2254, HL 2255, HL 2256, HL 2257, HL 2258, HL 2259, HL 2260, HL 2261, HL 2262, HL 2263, HL 2264, HL 2265, HL 2266, HL 2267, HL 2268, HL 2269, HL 2270, HL 2271, HL 2272, HL 2273, HL 2274, HL 2275, HL 2276, HL 2277, HL 2278, HL 2279, HL 2280, HL 2281, HL 2282, HL 2283, HL 2284, HL 2285, HL 2286, HL 2287, HL 2288, HL 2289, HL 2290, HL 2291, HL 2292, HL 2293, HL 2294, HL 2295, HL 2296, HL 2297, HL 2298, HL 2299, HL 2300, HL 2301, HL 2302, HL 2303, HL 2304, HL 2305, HL 2306, HL 2307, HL 2308, HL 2309, HL 2310, HL 2311, HL 2312, HL 2313, HL 2314, HL 2315, HL 2316, HL 2317, HL 2318, HL 2319, HL 2320, HL 2321, HL 2322, HL 2323, HL 2324, HL 2325, HL 2326, HL 2327, HL 2328, HL 2329, HL 2330, HL 2331, HL 2332, HL 2333, HL 2334, HL 2335, HL 2336, HL 2337, HL 2338, HL 2339, HL 2340, HL 2341, HL 2342, HL 2343, HL 2344, HL 2345, HL 2346, HL 2347, HL 2348, HL 2349, HL 2350, HL 2351, HL 2352, HL 2353, HL 2354, HL 2355, HL 2356, HL 2357, HL 2358, HL 2359, HL 2360, HL 2361, HL 2362, HL 2363, HL 2364, HL 2365, HL 2366, HL 2367, HL 2368, HL 2369, HL 2370, HL 2371, HL 2372,

MRY's Floq/ / PolyScale Paint Equivalents Conversion Chart - 2

Floq/	PolyScale	Color Name	MRY Name	VOL% (Min/L)	MDOE/L	Notes
Turkey			MRY 4055*	MRY 1105S	16-15	
Reifer Orange			MRY 4062*	MRY 1106S	16-09	
Reifer Yellow			MRY 4259	MRY 1109S	16-10	
Reifer Brown			MRY 4024	HL 2100S VIOA F124	16-17S	
Faded Red Brown			MRY 4055	HL 2001S VIOA F127	16-04	
Full Brown			MRY 4258*	MRY 2001 VIOA F109	16-15S	
Red			MRY 4075	HL 2001S VIOA F107	16-12	
Concrete			MRY 4026	VIOA F104*	16-01*	
Agel Concrete			MRY 4075	HL 2000P VIOA F103	16-10*	

* Indicates a color that will not match exactly. All MDOE/Ls are for a single gallon. HL 3000S, HL 2001S, HL 2000P, HL 2001, HL 2002, HL 2003, HL 2004, HL 2005, HL 2006, HL 2007, HL 2008, HL 2009, HL 2010, HL 2011, HL 2012, HL 2013, HL 2014, HL 2015, HL 2016, HL 2017, HL 2018, HL 2019, HL 2020, HL 2021, HL 2022, HL 2023, HL 2024, HL 2025, HL 2026, HL 2027, HL 2028, HL 2029, HL 2030, HL 2031, HL 2032, HL 2033, HL 2034, HL 2035, HL 2036, HL 2037, HL 2038, HL 2039, HL 2040, HL 2041, HL 2042, HL 2043, HL 2044, HL 2045, HL 2046, HL 2047, HL 2048, HL 2049, HL 2050, HL 2051, HL 2052, HL 2053, HL 2054, HL 2055, HL 2056, HL 2057, HL 2058, HL 2059, HL 2060, HL 2061, HL 2062, HL 2063, HL 2064, HL 2065, HL 2066, HL 2067, HL 2068, HL 2069, HL 2070, HL 2071, HL 2072, HL 2073, HL 2074, HL 2075, HL 2076, HL 2077, HL 2078, HL 2079, HL 2080, HL 2081, HL 2082, HL 2083, HL 2084, HL 2085, HL 2086, HL 2087, HL 2088, HL 2089, HL 2090, HL 2091, HL 2092, HL 2093, HL 2094, HL 2095, HL 2096, HL 2097, HL 2098, HL 2099, HL 2100, HL 2101, HL 2102, HL 2103, HL 2104, HL 2105, HL 2106, HL 2107, HL 2108, HL 2109, HL 2110, HL 2111, HL 2112, HL 2113, HL 2114, HL 2115, HL 2116, HL 2117, HL 2118, HL 2119, HL 2120, HL 2121, HL 2122, HL 2123, HL 2124, HL 2125, HL 2126, HL 2127, HL 2128, HL 2129, HL 2130, HL 2131, HL 2132, HL 2133, HL 2134, HL 2135, HL 2136, HL 2137, HL 2138, HL 2139, HL 2140, HL 2141, HL 2142, HL 2143, HL 2144, HL 2145, HL 2146, HL 2147, HL 2148, HL 2149, HL 2150, HL 2151, HL 2152, HL 2153, HL 2154, HL 2155, HL 2156, HL 2157, HL 2158, HL 2159, HL 2160, HL 2161, HL 2162, HL 2163, HL 2164, HL 2165, HL 2166, HL 2167, HL 2168, HL 2169, HL 2170, HL 2171, HL 2172,

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MRY Guide to acrylic painting

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Chapter 2 Paint conversion chart

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LOOK

column

Model Railroad Hobbyist | November 2020

RATE THIS ARTICLE

JEFF SHULTZ DISCOVERS A GREAT SOURCE OF DIFFICULT-TO-FIND HO, S, O, AND N SCALE FIGURES & OBJECTS ...



1. Turkey Vulture from the October miniprints-of-the-month subscription. Note that's a dime underneath!

IT ALL STARTED WITH A BEAVER.

Bernard Hallen created miniprints.ca when he discovered he couldn't find a 1/87th model of a beaver, which is an iconic animal in Canada. So, he purchased an *Elegoo Mars* resin printer and made his own [miniprints.ca/product/beavers/].

Bernard started making more animals for his own use and then started taking requests – and recently decided to make a



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2. Example of painted segulls from the miniprints website.

business out of it. His miniprints.ca site now has over 70 animals, figures, and other objects in HO, S, and O scale, with some select ones available in N scale as well.

All figures come unpainted, but the miniprints.ca website has photos of painted figures and they look amazing [2].



3. Kayaker with a fishing pole sitting on a dime.



4. Eagle with wings spread standing on a dime.

Bernard recently started a miniprints-of-the-month subscription program, where on the 15th of each month he ships subscribers a selection of animal, seasonal, and mystery miniprints.

I sometimes wondered why I purchased a 100mm Macro camera lens. Since receiving my first miniprints, I don't wonder anymore. In all my photos with this article you can see a dime.

Some of these figures are amazingly tiny, and the details like the turkey vulture's claws, and the antlers on the Buck Deer look positively lacy.

Now I get to paint them! ☒



5. Jack-o-Lantern from the October miniprints-of-the-month subscription.



6. Buck, doe, and fawn. The buck's antlers have amazing fine detail.



7, 8. Headless horseman and ghosts from the October miniprints-of-the-month subscription.



The Amherst Railway Society Railroad Hobby Show

Our 2021 show will be

CANCELLED
January 30 & 31, 2021

Save the dates!

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SAVVY MODELER *Online*



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Model Railroad Hobbyist | November 2020



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Fast and easy speed matching

YouTube modeler *railfan220* demonstrates his technique for quickly speed matching DCC locomotives. If you find speedmatching to be a real pain to do, then check out this video to see how simple speed matching can be.

This video runs for just 16 minutes and he not only explains the theory behind his method in detail, but he demonstrates how easy it is to do. ■



VIEW READER
COMMENTS

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NOVEMBER NEWS

column



Model Railroad Hobbyist | November 2020

RICHARD BALE AND JEFF SHULTZ
REPORT THE LATEST HOBBY
INDUSTRY NEWS ...



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INDUSTRY NEWS

Chooch Enterprises has been purchased by **Walthers**. The Chooch brand name will continue to be applied to the popular line of resin and flexible vinyl scenery products. Owner Mike O'Connell is retiring after 46 years in business.

Due to health issues and increasing age, **East Coast Railroads** will close their doors at the end of the year. The web site will close on December 31st, 2020, after which remaining exclusive stock will be sold wholesale only in large quantities. Email mikeh@eastcoastrailroads.com for inquiries to purchase wholesale remaining stock, fixtures, and/or proprietary products. For more information visit www.eastcoastrailroads.com.

THE LATEST MODEL RAILROAD PRODUCTS, NEWS & EVENTS

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AN APPRECIATION OF DENNY ANSPACH



By Tony Thompson

Denny Anspach, MD, passed away in Sacramento on September 20 at the age of 86. Professionally, Denny was a radiologist, having served as Chief of Radiology at Sutter General Hospital in Sacramento, but of at least an equal importance in his life was railroads, both prototype and model. Born in Chicago in 1934, he often mentioned growing up in his family's apartment "that looked right out on the main line of the Illinois Central Railroad."

After graduating from Stanford Medical School in 1960, Denny entered practice in a clinic in Spirit Lake, Iowa. His comment about that was, "I learned the science of medicine at Stanford, but the art of medicine in Spirit Lake." He subsequently accepted a job in Sacramento, where in 1967 he built a new home that was to remain his residence the rest of his life.

But his Iowa roots remained, and most summers he and his wife would return to a family residence at Okoboji, Iowa, not far from the town of Spirit Lake. There he often pursued another of his interests, the restoration of wooden inboard-powered boats.

Denny was among the leaders of the group that created the California State Railroad Museum (CSRM) in Sacramento. When legislation to form the museum as a state entity was stalled, he arranged in 1970 to entertain then-Governor Ronald Reagan at a dinner aboard the Gold Coast, formerly Lucius Beebe's private car. With Reagan's support, the museum came into being. Reagan would later wield the first shovel at the museum's groundbreaking.

In 1972, Denny was the editor and main author of "California State Railroad Museum: Recommendations for Planning & Development," a nearly 200-page master plan that did become the basis for the construction of CSRM. And when the museum was opened in 1981, Denny served as Master of Ceremonies at the festivities.

A parallel organization, the private CSRM Foundation, was created to accept donations and provide non-state-budget funding for CSRM projects, and manage

such things as the museum's tourist railroad and gift shop. Denny served on the Foundation's board and its executive committee for many years.

Denny was also the founding president of the Sacramento Trust for Historic Preservation, another example of his drive to preserve historical information and artifacts as part of our common heritage. Four years ago this month the national Railway & Locomotive Historical Society presented him with the Gerald M. Best Senior Achievement Award, named for the famed railroad historian and photographer.

As a modeler and as a historian, Denny's first love was the Milwaukee Road, and he had stories to tell of riding their branchline trains when he was a boy. But he was impressively knowledgeable about the history of many railroads, and about the corresponding modeling details. His own layout, though of "modest" size (his word), was well thought out, and hosted many "classic-era" HO scale freight cars, meaning pre-1960 kits from various sources.

Denny rarely missed the annual "freight car nationals" at the Cocoa Beach, Florida, and Naperville, Illinois meetings, and his outgoing and genial manner won him many friends from all over the country. I think I first recognized the depths of his model railroading passions after one of the times I attended the Roseville model railroad show, a very big swap meet-type event held every November. Denny and Bob Church, who were good friends, used to get a table to sell off their surplus stuff, and I went a few times to add some of my own items to their offerings.

During the show, we would take turns visiting the other booths, and Denny soon returned with a totally decrepit, damaged and broken HO scale freight car, that he knew was a Varney paper-side kit. He was beside himself with joy, though I wasn't sure I understood why.

Sometime later I happened to visit Denny at his house, and he showed me that Varney car: carefully disassembled with acetone to dissolve the "airplane cement," cleaned up and all parts repaired and paint retouched, and then carefully reassembled, with more modern grab irons and sill steps. It looked quite good, and his joy was undiminished. That was Denny. ■

NEW CLUB CARS

The **Chicago & North Western Historical Society** is selling a 50-foot PS-1 boxcar specially produced for **CNWS** by Kadee.



The HO scale model represents a prototype car Pullman Standard delivered to the C&NW on September 30, 1955. The car remained

on the roster, in this paint scheme, until its retirement on August 23, 1989. For ordering information visit

www.cnwhs.org,



The **Battle Creek Model Railroad Club** is selling an Evans 50' plug door boxcar decorated for Kellogg's. The unique HO

scale model was produced for BCMRC by Accurail. For additional information visit www.bcmrrc.net.

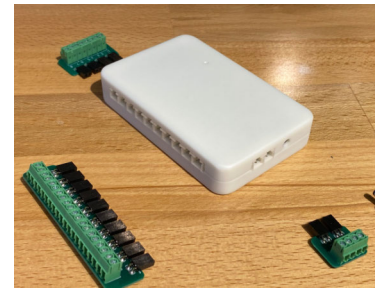
NEW PRODUCTS FOR ALL SCALES



Model Train Technology has released two new lighting controllers. The first is the Fiber Lighting Controller, which features eight fiber optic control ports. Each control port has two

fiber lights per port, for a maximum of 16 fibers per controller. Animations include On, alternate flashing, and blinking, which can be used for such things as crossing gates,

emergency vehicles, or building flashing signals. The Fiber Lighting Controller also includes eight detection circuits, so events can be triggered by a remote detection system. One or more detection ports can be assigned to one or more ports. The on-board DCC decoder can behave as either a multi-function or accessory decoder, supporting up to 8 separate switch addresses that can be assigned to any port. It also supports NMRA short and long addressing. An 18VDC power supply is included.



The second new lighting controller is the LED Scene Controller IIa Compact. Replacing open board versions, this non-keypad controller is set up to allow plug-in terminal adapters on all three sides, for a total of 16

ports that can be used with JST plugs, Fiber Lighting Dongles, or Screw Terminal Adapters. The controller is controlled via DCC and includes a power supply. For more information visit modeltraintechnology.com.

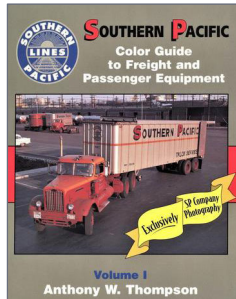
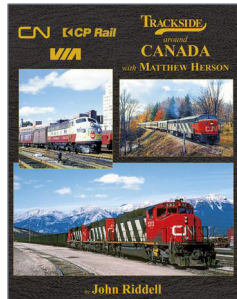


SoundTraxx has announced the Tsunami2 for Big Steam (TSU-BIGSTEAM) series of sound decoders. Utilizing audio recordings from the UP #4014 Big Boy during it's

excursions prior to the Covid-19 shutdown, this decoder has been optimized for the UP Big Boy locomotives, with the standard sounds that would be associated with small engines



replaced by those which are unique to the Big Boy, including whistle recordings in yard and on the road, the 4014's brass bell, exhaust chuff, brakes, feedwater heater, and others. The same sounds are on the sound-equipped Big Boy model from Athearn. The Big Steam version of the Tsunami2 decoder will be released in the TSU-1100, TSU-2200, and TSU-21PNEM formats. For more information visit www.soundtraxx.com.



New books from **Morning Sun** include *Trackside Through Canada* in which John Riddell presents a vast collection of Canadian railway photos that range from Newfoundland to Vancouver between 1957 to

1984. Narrow gauge, steam excursions, Montreal commuter operations, logging on Vancouver Island and shovel-nosed diesels in the Yukon are all covered. Also available is Tony Thompson's *Southern Pacific Color Guide to Freight and Passenger Equipment*. For additional information contact a dealer or visit www.morningsunbooks.com.



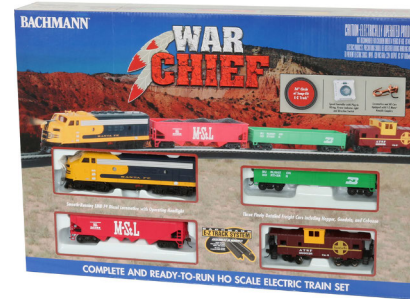
Doug Mayer has written *Canadian Pacific Railway on the Revelstoke Division: Volume Four* as a fund raiser for the **Revelstoke Railway Museum**. A history of the Revelstoke Division of the Canadian Pacific Railway, all proceeds of the book will go to the museum. The

book, as well as the previous three volumes, can be purchased from the museum website at www.railwaymuseum.com/museumstore.

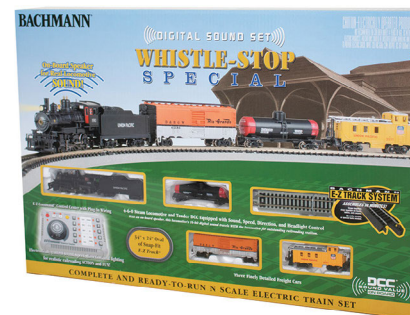
MULTIPLE SCALE PRODUCT NEWS



With Christmas fast approaching, **Bachmann** has released several new train sets in HO and N scale. The new sets include the standard DC equipped HO scale *Yard Master*, which includes a Baldwin 0-6-0 in UP's "Greyhound" paint scheme, an offset cupola caboose, and a gondola.



The HO scale *War Chief* includes an F-series diesel locomotive decorated in the Santa Fe "Yellowbonnet" scheme, a maroon and yellow ATSF wide-vision caboose, a 4-bay hopper, and a gondola. Both HO scale DC sets come with a DC power pack and a 36" circle of E-Z Track consisting of 11 sections of standard curved track and one section of curved plug-in terminal rerailer track. All cars and locomotives are equipped with body-mounted E-Z Mate couplers.



In N scale, the *Whistle-Stop Special* includes DCC with sound, featuring a 4-6-0 Sound Value DCC equipped locomotive decorated for UP, an offset cupola caboose, a boxcar, and a single dome tank car.



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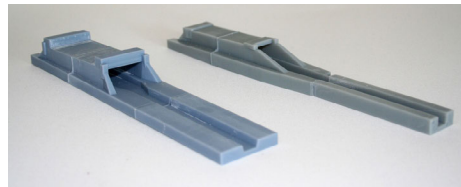
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Roaring Rails is an N scale DCC and sound equipped set, including a GP40 locomotive, wide-vision caboose, boxcar and gondola. Both N scale DCC/Sound train sets include a 34"x 24" oval of snap-fit nickel silver E-Z Track and an E-Z

Command Control Center with wall pack and plug-in wiring. All cars and locomotives are equipped with body-mounted E-Z Mate couplers. For more information visit

bachmanntrains.com.



ZYX Creative now has under-track culverts 3D Printed in high resolution resin available in HO, N and Z scales. Representative of

culverts found on the former SP coastline Seacliff section, they are available in single, double, and triple-track configurations. Featuring front and rear portals, the water channel is through and through and includes an extended spillway. Height, width, and length can be customized to the customer's specifications. For more information visit

www.zyxcreative.com.



LARGE SCALE PRODUCT NEWS



Bachmann has released a G scale model of a wood caboose with a centered cupola. The model features Big Hauler compatible knuckle couplers and trucks with blackened,

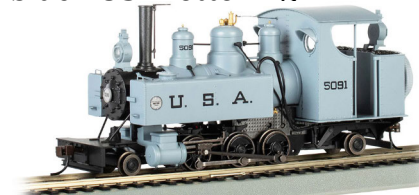
machined metal wheels gauged for 45 mm track. In addition to Denver & Rio Grande Western, the model is available for Pennsylvania Railroad, and unlettered. For more information contact a dealer or visit www.bachmanntrains.com.

O SCALE PRODUCT NEWS



Bachmann is selling its On30 scale 2-6-2T Baldwin Class 10 tank engine in several new paint schemes including unlettered black. Additional

schemes include olive drab lettered in white for the Quartermaster Corps, and in gray with a choice of white or black USA lettering.



The model is based on narrow gauge trench locomotives used by allied forces in France during World War I.

Bachmann's On30 version is equipped with TCS WOWSound DCC and Chuffinity technology that features a significant increase in the number of chuff sounds over previous sound

systems. Chuffinity senses and adjusts the sound for load and grade changes.



New On30 rolling stock from Bachmann includes these 18' low side gondolas.



Also new are these 18' double-sheathed wood boxcars decorated for the U.S. Army. The models are sold in pairs and come with

an extra set of doors and two optional running board extensions. For additional information contact a dealer or visit www.bachmanntrains.com.



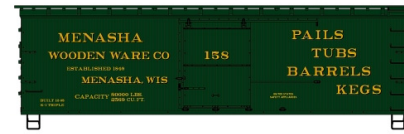
Rusty Rails has released an On30 flat car that is the first in a new series of work train cars with different parts and junk loaded on the car. This initial release includes a flat car with a square oil tank and a bin with a junk pile casting. The kit includes San

Juan detail parts of four stirrups and a brake wheel. Two Kadee coupler boxes are included. Couplers and trucks are not included.



Also new from Rusty Rails is a 1:48 scale 1937 Ford pickup truck with a load of junk in the back. The same model is available as a derelict truck with flat tires. For additional information visit www.rustyrail.com.

HO SCALE PRODUCT NEWS



Although Trainfest 2020 has been cancelled, **Accurail** is moving forward with its annual release of HO scale car kits

decorated for railroads that operated in the region of the Milwaukee-based show. This year's limited edition cars will include a green 36' wood boxcar decorated for Menasha Wooden Ware Company, of Menasha, WI.

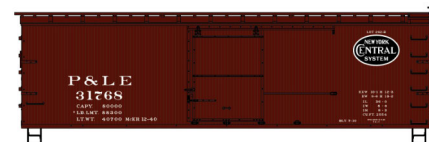


The same 36' wood boxcar will be available decorated for La Crosse & Southeastern Railway with a Coon Valley Route herald.



Additional new HO scale kits from Accurail include this Milwaukee Road 40' rib side automobile boxcar with

staggered double doors. The 1942 prototype displayed a *Route of the Olympians* slogan.



This Pittsburgh & Lake Erie HO scale boxcar is based on a prototype built in July 1910 for the New York Central

subsidiary. All Accurail kits come with appropriate trucks with plastic wheelsets and Accumate knuckle couplers. For additional information contact a dealer or visit www.accurail.com.

Athearn has announced plans to release a Genesis series GP39-2 next October. Details on units decorated for Reading will

include a 2900 gallon fuel tank, ratchet-style hand brake, cab wind deflectors, and unique roof gutters. Delaware & Hudson GP39-2s share many of the same details as the Reading units plus ditch lights. Additional road names for Athearn's Genesis GP39-2 include Union Pacific, BNSF, and CSX.



Notable features on all road names include LED lighting, coupler cut levers, flexible rubber

MU hoses, flexible rubber trainline hoses, see-through cab windows, full cab interior, walkway tread, Celcon handrails, windshield wipers, lift rings, wire grab irons, fuel tank details, sander lines, and all-wheel drive.

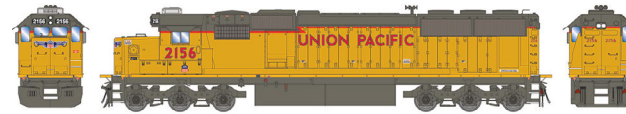
The GP39-2 DCC models will have a factory installed decoder with SoundTraxx Tsunami2 sound for operation in both DC and DCC environments. DC models will be DCC-ready with a Quick Plug for installation of an aftermarket decoder.



R. Bale

EMD SD60 LOCOMOTIVES

EMD introduced the SD60 in the summer of 1984. The clean lines of the huge body were similar to its SD50 predecessor. Most of the changes were internal, including a new 16-cylinder 3,800 hp prime mover, wheel slip control, and microprocessor controls. Production continued through 1991 with a nearly 600 SD60s purchased by American railroads. Some customers ordered SD60s with wider safety cabs.



Athearn is preparing a group of HO scale SD60 diesel locomotives for

release in October 2021. Road names will be Union Pacific, Oakway, Chicago & North Western, and Soo Line. The Ready-to-Roll model will have several road specific details including an operating beacon (in DCC sound versions), winterization hatch, and variations in antenna and handrails.



A Genesis series model of a Trinity triple-bay covered hopper is included

in Athearn's October 2021 production schedule. The HO scale model is based on a popular 5161 cu. ft. prototype introduced in 1995. Like the prototype, Athearn is producing the model in both 10 and 12 panel variations.

In addition to Archer-Daniels-Midland, road names will CSX (two schemes), GATX Lease, Agrium Wholesale, Cargill, CP Rail (Soo Line), Borax, BNSF (two schemes), and David J Joseph Co. The cars will have separate brake cylinder, valve and air reservoir with wire brake plumbing; uncoupling bars and air hoses, separately applied end cages and etched end platforms, a photo-etched metal running board, and 100-ton trucks with 36" machined metal wheels and rotating roller bearing caps.



Athearn's October 2021 production schedule includes

a 50' exterior post boxcar based on a prototype built by PC&F in the 1960s. Cars equipped with a 10' 6" plug door will be available for Burlington Northern, Denver & Rio Grande Western, Golden West, Missouri Pacific, Frisco, Helm Leasing, and two Conrail schemes. Boxcars decorated for SSW-Cotton Belt, Evergreen, and Southern Pacific will have a pair of 8' Landis doors on each side.



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Features on the Genesis model include individual uncoupling bars, trainline and brake hoses, wire grab irons, etched metal coupler platforms and running boards, and 70-ton roller-bearing trucks with machined metal wheels and rotating bearing caps. A minimum track radius of 22" is recommended for reliable operation.



In the 1970s the North American Car Corporation built some 30' tank cars for customers who either didn't have the facilities to handle big cars or didn't need large quantities of various liquid commodities. Athearn plans to deliver an HO scale version of the 30' 8,000 gallon tank cars next October. Road names will include NATX-Amazio, RAIX, GATX, AESX, UTLX-American Maize Products, and Union Tank Car.

Features of the Ready-to-Roll model include separate manway and vent, photo-etched metal platforms, wire end and platform railings, underbody detail including brake gear, air reservoir, and tank outlet. Depending on the prototype being modeled, trucks with machined metal wheels will be either 100-ton roller-bearing or Bettendorf-type with solid-bearings.

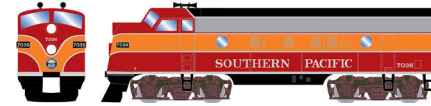


New intermodal equipment coming from Athearn next October includes a group of 20' containers with a chassis. Carrier names for the HO scale models will be CMA-CGM and CMA on Trac Leasing chassis. Tropical and Beacon containers will be mounted on Hyundai chassis, while ONE and Hapag-Lloyd containers will have Flexi-Van chassis.



Athearn has included a new run of 45' trailers in its October 2021 production.

The models will have separate mud flaps and rubber tires. The trailers will be available decorated for Rio Grande, Chicago & North Western, Southern Pacific, Florida East Coast, Fredrickson, and Penner.



New **Roundhouse** brand models coming from Athearn next October include economy priced EMD F7A diesel units and matched F7A/B sets. Road names will be Santa Fe, Southern Pacific, Chicago & North Western, CP Rail, and Southern Railway. F7A units will have single or dual headlight per the prototype being modeled, all-wheel drive and all-wheel electrical pickup for DC operation. B units will be non-powered.



Additional HO scale models coming Roundhouse next October include a 40' grain boxcar. Road names will be Santa Fe, Chicago, Burlington & Quincy; CP Rail, Great Northern, Soo Line, and Union Pacific. The model will come with appropriate trucks with machined metal wheels.



Athearn's October 2021 production schedule includes a Roundhouse brand chemical tank car featuring wire handrails and machined metal wheels. The list of road names includes Gulf, New Jersey Zink, Warren, Procor, Ethyl, Hooker, and Staley.



Completing the long list of new Athearn/Roundhouse product scheduled for release next October is an HO scale wood caboose with a centered cupola. In addition to the Southern Railway, road names will be Santa Fe, Southern

Pacific, CP Rail, and Chicago & North Western. The HO scale model will ride on Athearn's new Barber-Bettendorf swing motion caboose trucks with machined metal wheels. For additional information contact a dealer or visit www.athearn.com.



Atlas has announced a special Christmas run of the HO scale ACF 5800 plastics hopper. The model has graffiti on both sides, with one side being a Merry Christmas illustration photographed on a prototype covered hopper in Pennsylvania and the other side consisting of purple and blue tags. The 5800 plastics hopper features a nine-panel body with ten weld seams, etched metal roof walks, transverse mounted air reservoir, 100-ton roller-bearing trucks with blackened metal wheels, and Accumate couplers. The Merry Christmas graffiti on the other side of the car can be seen in the N scale entry. For more information or to order visit atlasrr.com.



Bachmann has introduced two modern HO scale freight cars equipped with a track powered flashing end of train device (FRED). The track-powered device is standard equipment on all freight trains since the demise of the caboose. Bachmann is offering the device on Canadian quadruple-bay cylindrical grain hopper cars and 50' outside braced boxcars.



Road names for the grain hopper are Canadian National and Alberta.



A FRED equipped HO scale boxcar is available decorated for Norfolk Southern, SL-SF Frisco, Valdosta Southern, and Conrail.



Bachmann's track-powered FRED device is also available separately. Because of variations in bolster heights and truck bolster mounting hole dimensions, the device may not be suitable for all brands of HO scale models. To determine compatibility with Bachmann products visit files.constantcontact.com/b83917db301/b5d570c6-2036-43e4-8ffa-d6dfbdfddfb6.pdf.



Also from Bachmann, the HO scale Track-Cleaning Reefer will be available in three new roadnames - Manhattan Brewing Co., Oppenheimer

Casing Co., and Jelke Good Luck Margarine. The Silver Series based cars include a reusable, dishwasher-safe track-cleaning pad; blackened machined metal wheels with brass axles, E-Z Mate knuckle couplers, and Celcon trucks. For additional information contact a dealer or visit www.bachmanntrains.com.

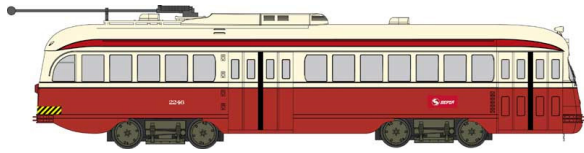


Bowser is working on a project to produce Kansas City PCC cars. The HO scale models are based on prototypes

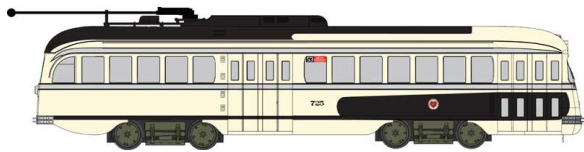
built in 1946 and 1947 without the small standee windows. After just 10 years of operation, the prototype PCCs were sold to Philadelphia, Toronto, and Tampico. Another 79 were sold to Belgium. In 1975, with the cars already approaching 30 years of operation, 11 of the Toronto cars went to San Francisco with another 11 being sold to Philadelphia.



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Bowser will offer DCC-ready and DCC sound equipped models of the PCC cars decorated for Kansas City, Philadelphia (green), Philadelphia (orange and blue), Toronto, SEPTA (ex-Toronto), and two Bicentennial schemes.



The injection molded models will have correct window glazing, operating roof poles, and a functioning headlight. The drive system includes a can motor with a flywheel. DC models will be DCC-ready with a 21-pin plug. Sound equipped trolleys will come with a LokSound decoder. Pre orders are due November 15th with delivery planned for Fall 2021.



Bowser has also announced new HO scale 40' steel-side boxcars for delivery in Fall 2021. The ready-to-run cars

feature metal wheels and knuckle couplers. Multiple roadnumbers will be available for DL&W – Blue Coal; D&H – Blue Coal; Boston & Maine; Chicago Great Western, Burlington, CN, D&H (yellow); Duluth Winnipeg & Pacific; Great Northern, Linde Liquefied Gases, New Haven, T&NO; and Western Pacific. Pre-orders are due by November 27th.



Finally, Bowser has a new run of HO scale 100-ton hopper cars featuring roller bearing trucks with metal 36" wheels,

interior and slope sheet braces; and knuckle couplers. Road names in this release include BNSF, Canadian National, Chesapeake & Ohio, DRG&W, Frisco, L&N Yellow 1976 Anniversary Logo, L&N Decoursey 1981 repaint, Penn Central

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H43D, Seaboard System, Southern Pacific, Upper Merion Plymouth, and Wheeling & Lake Erie. Pre-orders are due by November 27th. For more information contact a dealer or visit www.bowser-trains.com.



New 1:87 scale **Classic Metal Works** Mini Metal vehicles set for release in December include this 1941-1946 Chevrolet Fire Truck. The model will also be available with a yellow body and red fenders.



Also due for release in December is this 1957 Chevrolet truck fitted with a septic pumper rig.



Classic Metal Works new Forklifts represent equipment in use during the 1950s and 60s. For more information contact a dealer or visit www.walthers.com.





East Coast Circuits has announced a new release of Ricko-based 1:87 scale custom lighted Dodge Charger models. Available before Christmas 2020, the cars come in six different Police paint schemes, including NYPD, as well as a Sheriff's Deputy and Fire Department Battalion Chief paint schemes. Powered by a 9-12V DC source (not included), each car includes 14 LEDs (16 on the push-bumper models) in six flashing patterns. NYPD cars have different colored LEDs to follow the prototype. Both the headlights and taillights flash in a strobe pattern. For more information or to order visit eastcoastcircuits.com.



ExactRail expects to complete another release of its Thrall 54' coil car within the next

30 to 45 days. The HO scale model will be available in seven paint schemes including three for Conrail: G52U, with re-painted hood, and with a patched hood. Additional road names will be CSXT/NYC (patched and in a blue repaint), Norfolk Southern (1992 as delivered), and Norfolk Southern (post-2010). The ready-to-run Platinum series model will be equipped with ASF 100-ton Ride-Control trucks with 36-inch machined metal wheelsets. For additional information visit www.exactrail.com.



The latest 1:87 scale vehicles released by **Oxford Diecast** include a 1965 white Mustang with a red interior, and a 1957 Cadillac Eldorado wearing silver over Copenhagen Blue.



Additional new vehicles available from Oxford include a yellow 1954 Pontiac Chieftain four-door sedan, and a 1957 Dodge D100 Sweptside pickup truck in turquoise and black. For additional information contact a dealer or visit www.walthers.com.



Kadee has released an HO scale ACF 11,000 gallon insulated tank car leased by Pacific Gas Corporation from the Conservative Gas Corporation.

The prototypically accurate model is based on an insulated tank car with a step platform built in 1948. All Kadee ready-to-run models come with Kadee couplers and two-piece self-centering trucks. For additional information contact a dealer or visit www.kadee.com.





R. Bale

EMD GP35

The EMD GP35 is a four-axle road switcher built by General Motors between July 1963 and January 1966. The GP35 was EMD's first direct challenge to GE highly successful U25B. It was also one of EMD's first diesels to have a modern car body design with a beveled cab. Over 1300 units were built for American, Canadian, and Mexican railroads. GP35s are powered by EMD's 16-cylinder 2,500hp 567D3A engine. Although low nose is standard, GP35s built for N&W, Southern, and Ferrocarriles Nacionales de México had high-hoods. Many railroads traded in EMD F-units and Alco FA units for GP35s, reusing the trucks and traction motors.



KatoUSA is selling HO scale models of EMD GP35 Phase Ia road switchers in two popular road names: Santa Fe and New York Central.

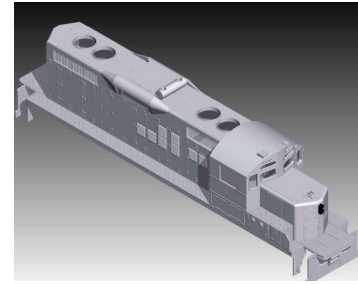
Notable features include

directional headlights, all-wheel electrical pickup, a five pole motor with dual brass flywheels, and an 8-pin plug to simplify installation of an aftermarket DCC decoder.



In addition to being available fully assembled, an economy priced version includes a package of parts for consumer application including truck brake cylinders, MU hoses, and

grab irons. Kato's GP35s are available for DC operation and with ESU non-sound DCC. For more information contact a dealer or visit www.katousa.com.



Maple Leaf Trains is selling a kit for an HO scale GP9RM locomotive. Kits for locomotives with 36" fans on the long hood are scheduled for release this month. Units with 48" fans will be available in December. The kits feature resin body components,

formed wire handrails, grab irons and eye bolts; three types of battery boxes, two types of classification light assemblies, two types of exhaust stacks, and an assortment of etched metal parts for details including fans, stanchions, windshield wipers, and door handles.



The Maple Leaf body kit is designed to fit on a Walther's Mainline GP9 chassis. For additional details visit www.mapleleaftrains.com.



miniprints.ca has started a new monthly subscription program. Each month subscribers will receive a selection of HO scale 3D-printed figures including one set of animal miniprints, one set

of seasonal miniprints, and one set of mystery miniprints. While the subscription is US\$24.99, miniprints.ca guarantees that the value of the unpainted miniprints that will be included

in the sets will be at least US\$50 retail. Shipping is included. Additionally, subscribers will get a 15% discount on any miniprints.ca orders and have access to exclusive figures only for subscribers. The above photo shows the October selection. For more information visit miniprints.ca.



Monster Modelworks has released a new kit named Machine Works. The HO scale craftsman kit is based on a brick building constructed in 1850 in Enfield, CT. It was occupied for over 60 years by the Hazard Powder Company. The kit includes a stencil to achieve the signage shown above, however, the structure can be adapted to a variety of enterprises.

Monster Modelworks uses laser technology to create highly realistic components. This includes 3D laser-engraved aged brick walls, and 3D laser-engraved brick overlays for the pilasters and sills. Laser-cut peel & stick parts include asphalt shingles, roof cap, windows and glazing. The assembled kit has a foot print of 4.25" wide x 4.5" deep. The structure is 3.5" tall. For additional information including ordering instructions visit www.larkspurlaserart.com.



National Scale Car has released a CMO mini kit for a Chicago, St. Paul, Minneapolis & Omaha 40' 1937 modified boxcar with a

Duryea underframe. As a base for the car the modeler must supply an InterMountain Railway, 10'6" IH 40' boxcar kit with 5-5 ends.

The NSC mini kit includes resin castings to correctly model the prototype's Duryea underframe with Z26 type center sill. The

kit includes cast resin ends, Universal slack adjuster, underframe etchings, trust plate etching, and decals with *The Route of the 400 Fleet* slogan. Detailed instructions are available for download. For ordering information visit nationalscalecar.com.



Pacific Western Rail System is selling 20' open top containers manufactured by PT Trains of Portugal. The HO scale containers have positionable doors, detailed interiors, and removable canvas tops and supporting bars.



Open top containers are available decorated for Mediterranean Shipping Co., Maersk, PSL, Seaco, TEXU, and Triton. For additional information visit www.pwrs.ca.



R. Bale

CONRAIL G52X BETHGONS

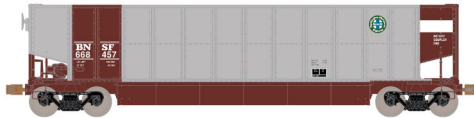
Developed in the late 1980s by Bethlehem Steel Company – with follow up work by Johnstown America and Freight Car America – the Bethgon has become one of the most common cars for hauling coal. The Bethgon design added 15 to 18 additional tons of coal carrying capacity to a car by replacing moving hopper doors and high-maintenance locking mechanisms with long tubs on either side of the cars center sill. In 1997, Conrail built 600 Bethgons using construction drawings supplied by Johnstown America. These were 4,100 cu. ft. cars with a capacity of 116 tons of coal. They were identified as Conrail class G52X. After the breakup of Conrail, most of these cars went to Norfolk Southern where they can be seen today in almost every NS coal train. Originally called the Coal Porter, the name was changed to Bethgon when the family of composer Cole Porter asked Bethlehem Steel to come up with an alternate name.





ScaleTrains.com is working on an all-new Bethgon coal gondola with delivery planned for May

2021. Fully featured Rivet Counter versions of the HO scale ready-to-run model will be available as well as a basic Operator version with simplified brake gear and less definitive printing details.



Road names for the Operator series Bethgon will be AEPX-American Electric Power Company,

Burlington Northern, BNSF (circle cross herald), Conrail, CSX, and Union Pacific.

Features on the Rivet Counter model include unique COTS and end data specific to each road number, 32 wire grab irons, photo-etched see-through end crossover platforms, wire retainer valve rod, and photo-etched metal retainer valve rod supports.

The extensive brake details include brake cylinder and arm, air reservoir, control valve, brake wheel, brake wheel housing, brake wheel housing rod, wire formed brake wheel housing rod guide, brake plumbing including auxiliary reservoir pipe, emergency reservoir pipe, branch pipe, and brake cylinder pipe. The Rivet Counter model accurately replicates the Conrail G52X Bethgon. ScaleTrains.com will offer the Conrail car in both red and gray paint schemes.



The Operator and Rivet counter models will both have body mounted metal semi-scale Type E knuckle

couplers, and ASF motion control 100-ton trucks with 36"

machined metal wheels and rotating bearing caps. For more information visit www.scalettrains.com.



Tangent Scale Models has released a new production run of General American 8,000 Gallon 1917-design radial course tank cars. Depending on the prototype being modeled, the HO scale ready-to-run tank cars come with or without Cardwell draft sill springs, either KC or AB brakes, and different hand brakes. This release includes the CGTX-Canadian General Transit 1955-era car with AB brakes. Data includes both imperial and US gallon capacities.



The release includes this GATX 1936-era car with K brakes. A similar GATX car with small lessee lettering for Wadhams Oil, East Chicago, IN is also available.

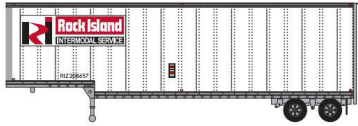


This red TROX Marathon billboard tank car with K brakes is based on a 1920s-era prototype operated by Products Tank Line, a wholly-owned subsidiary of Union Tank Line. Completing this release is a Spokane, Portland, & Seattle MOW car stenciled for Water Service.



Features common to all models in this release include circumferential riveted tank body and riveted underframe, radial course tank body, all-new underframe for the GATC 1917-design, see-through cast knee above the bolsters, full dome appliances, dimensionally-correct hazardous placards, separately applied tank handrail and tank strap detail, wire grab irons and coupler lift bars, separate air hoses, Kadее couplers, and ASF spring plank

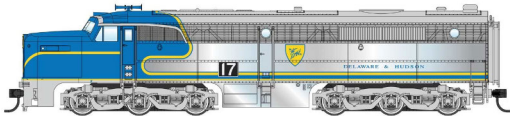
trucks with separate brake beams and machined 33" wheels. For additional information visit www.tangentscalemodels.com.



Trainworx has announced a series of new HO scale drop frame trailers. Available for reservation are trailers decorated for Rio Grande, Texas and

Pacific; SOO Line, Santa Fe, Southern, Rock Island, Penn Central, and Monon. Each will be available in three road numbers, except for Rio Grande, which will be available in two. For more information see www.train-worx.com.

Walthers continues to expand its commitment to HO scale passenger equipment. The Milwaukee Road Hiawatha name train is nearing completion with the release of the Super Dome and Skytop observation car last month. The complete Santa Fe Super Chief is entering production soon with the initial cars scheduled to arrive next June. New announcements this month include 17 cars decorated in Union Pacific's Heritage Excursion Fleet, 14 Santa Fe and BNSF business-excursion cars, and a dozen passenger cars to accompany ALCo PA locomotives in Delaware & Hudson's blue and yellow copycat Warbonnet scheme and Southern Pacific's Daylight livery. Here are the details:



Walthers is scheduled to begin releasing its new Mainline series ALCO PA and PB diesel units to dealers later this month.

Models decorated for Delaware & Hudson and Denver Rio Grande & Western will have small number boards, dynamic brakes, and working Mars lights.

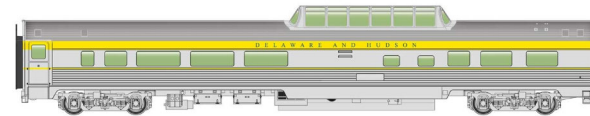
Nickel Plate Road and Southern Pacific locomotives will have large number boards and Mars lights. The SP units will also

have dynamic brakes. An Erie-Lackawanna PA with small number boards is included in this release.



Handrails on the HO scale model will be factory installed. The bodies will have molded drill starter

points to assist hobbyists wanting to add individual grab irons using Walthers Alco PA-PB diesel detail kit (910-252) which is sold separately. Walthers Mainline model uses the same drive system as the Walthers Proto models. In addition to DC operation, Walthers will offer the ALCO PA locomotives with an ESU DCC sound decoder.



To accompany the PA-PB locomotives, Walthers has 85' Budd passenger cars decorated for Delaware & Hudson and in Southern Pacific's Daylight scheme. The models have full interior details and tinted window glazing. The cars have molded drill starter points for the installation of wire grab irons using Walthers Exterior Detail Kit 931-200. Interior lighting kits are sold separately.



A large-window coach is available now. A dome coach, diner, and a

baggage-lounge car should be available later this month. A combination baggage-RPO car and a round end observation car will be available in December.



A few Union Pacific Heritage Fleet passenger cars are available now from Walthers. The 85' HO

scale Proto series cars are decorated in UP's modern-era

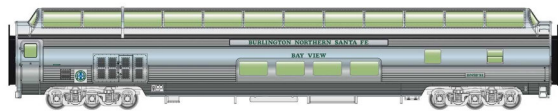
excursion service scheme. Models of ACF prototypes currently available include a baggage car, 44 seat coach, dome lounge, dome-diner, and a 48-seat diner.



An 85' ACF dome coach is scheduled for release in late November. Walther's UP Heritage series will be completed in December with the release of an 85' Budd-built 10-6 sleeper. The Proto series models have factory installed grab irons and will be available in both standard and lighted versions.



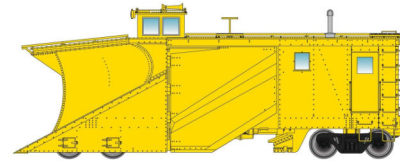
Walther's comprehensive passenger car program includes new Santa Fe and BNSF cars for a company business or excursion train. The HO scale models will have factory installed grab irons and tinted windows. At the front end is a 74' Pullman-Standard steam generator car that will be available painted silver and lettered for Santa Fe, as well as in a Bicentennial red, white, and blue scheme. Availability is planned for May 2021. The steam generator will be followed a month later by a 74' Pullman-Standard baggage car.



An 85' Budd-built big dome bar-lounge-dormitory car is due in October 2021, with an 85' P-S 36-seat diner scheduled for December 2021.



Walther's will conclude the business cars series in January 2022 with three different Santa Fe and BNSF schemes applied to six 85' P-S 4-4-2 Regal series sleepers. Non-lighted cars as well as cars with full interior lighting will be available in this Santa Fe/BNSF series.



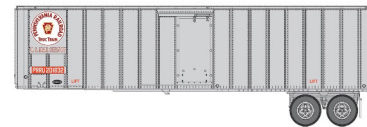
Walther's has scheduled a December release date for another production run of its HO scale Russell snow plow. In addition to the unlettered yellow model shown here, fully decorated models will be available for Canadian National, Grand Trunk, Penn Central, and Great Northern.



Walther's plans to release a 53' bulkhead flatcar in January. The HO scale Mainline series model is based on a prototype manufactured by General Steel Casting Co. Road names will be Burlington Northern, Santa Fe, Northern Pacific, Soo Line, Union Pacific, and Chicago, Burlington & Quincy.



Walther's plans to release a selection of 53' Stoughton trailers later this month. Features of the 1:87 scale vehicle models include see-through roofs, sliding undercarriage-wheels, positionable landing gear, and four nicely detailed latch bars. The models will be sold in pairs with different numbers decorated for JB Hunt, MS Carrier, Knight Transportation, Marten, and Ozark.



A new group of 40' Flexi-Van trailers are scheduled to be released by Walther's in December. Decorating schemes on trailers with both a rear and side door will be US Mail and Pennsylvania Railroad.



Trailers with a rear door only will be available for Santa Fe, Chicago, Burlington & Quincy, Illinois Central, Louisville &



Nashville, Milwaukee Road (three schemes), New York Central, Flexi-Van, Penn Central, Pittsburgh & Lake Erie, Soo Line, and Southern Railway.

Also coming from Walther's in December is an HO scale kit for a heavy duty container crane. The kit does not include the container.



New items from Walther's Cornerstone include a kit for a modern communication tower. Components include standard triangular top-mount and lower three-legged mounting brackets. The parts are molded in gray ABS plastic reinforced with glass fiber to resist bending. Each kit includes two antenna towers that measure 9.75" tall.

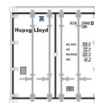


New Walther's Cornerstone models coming in January include a kit for three HO scale metal yard sheds.



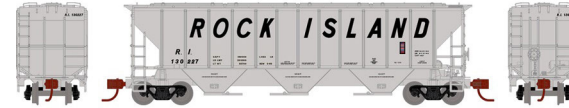
A kit for a multi structure vehicle maintenance facility is scheduled for release in February. For more information contact a dealer or visit www.walthers.com.

N SCALE PRODUCT NEWS



Athearn has announced plans to produce an N scale model of a 20' reefer container. Carrier

names will be Hapag-Lloyd, CMA-CGM, Tropical, ONE, CGM, and Beacon. Availability is scheduled for October 2021.



Athearn's 2021 production schedule includes a P-S 4427 cu. ft. covered hopper

with screw mounted roller-bearing trucks. The N scale model will be available for Rock Island, Burlington Northern, BNSF, Chicago & North Western, Continental Grain, Corn Products, Denver & Rio Grande Western, and Santa Fe. For more information contact a dealer or visit www.athearn.com.



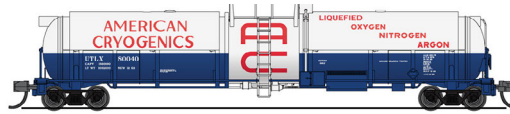
Atlas has announced a special Christmas run of the N scale ACF 5800 plastics hopper. The model has graffiti on both sides,

with one side being a Merry Christmas illustration photographed on a prototype covered hopper in Pennsylvania and the other side consisting of purple and blue tags. The 5800 plastics hopper features a nine-panel body with ten weld seams, etched metal roof walks, ten 20" hatches and pneumatic outlets; transverse mounted air reservoir, 100-ton roller-bearing trucks, and Accumate couplers. The purple and blue graffiti on the other side of the car can be seen in the HO scale entry. For more information or to order visit atlasrr.com.

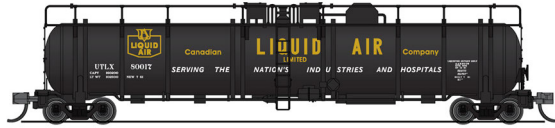


Broadway Limited has released to dealers another production run of its well-regarded N scale

cryogenic tank car. With a capacity of over 15,000 gallons of liquid oxygen, these specialty cars were also used for other cold liquid gas products that needed to be transported at controlled temperatures down to -320 degrees Fahrenheit.



BLI is selling the cryogenic cars in three versions (Type A, B, and C) with variations in some fixtures and the type of loading and discharge valves and their location.



Paint schemes for this run include AirCo, Air Liquide, Air Products, American Cryogenics, Canadian Liquid Air Co., Linde, and UTLX. Undecorated models of each type of car are also available. The painted cars are sold in both single and two-packs. For more information see your dealer or visit the BLI website at broadway-limited.com.



New 1:160 scale **Classic Metal Works** Mini Metal vehicles include a 1957 Chevrolet truck fitted with a septic tank and pumping rig. The model will be available from dealers in December. For additional information contact a dealer or visit www.walthers.com.

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In **MRH** **RUNNING** **EXTRA**



R. Bale

PENNSYLVANIA X58 BOXCAR

Between 1964 and 1966, the Pennsylvania Railroad designed and built a fleet of 2,500 multiple-purpose boxcars designated class X58. An additional 100 cars were built for the Lehigh Valley Railway.

The interior of the X58 cars were fitted with various types of loading fixtures resulting in the cars receiving modified designations including X58A, X58B, and X58C. Although the appearance of many X58 boxcars changed over the years, some retained their original PRR paint. During the Penn Central era many were shopped and painted and had their running boards removed and brake gear and ladders lowered. Under Conrail, some X58s had their running boards removed but the hand brakes remained high on the ends. Some of the sturdy cars continued in service beyond the Conrail era, with a small fleet being repainted into Norfolk Southern. Most X58s were retired by the mid-2000s. An X58 in its original configuration is on display at the Danbury Rail Museum in Danbury, CT. R.



Eastern Seaboard Models plans to release the latest version of its N scale 50' class X58 exterior post boxcar to dealers this month. This production run is based on modernized versions of the 1960s-era cars with no running board, shortened ladders and lowered brake gear.



Road names will be Penn Central (with a red P), Penn Central (patched), Conrail (three schemes including patched ex-PC), Burlington Northern (two schemes), Milwaukee Road, Lehigh Valley, and Canadian National. ESM

will also have a limited quantity of a Conrail car in pink with a *Help Fight Cancer* slogan.



The ready-to-run N scale model will have ASF 70-ton roller-bearing Ride-Control trucks with low-profile metal wheelsets, and Micro-Trains #1015 knuckle couplers.



Also newly available are X65 boxcars in Lehigh Valley and Conrail patch-out.



Additionally, new schemes for the X72 boxcar include Conrail and Canadian National.



Eastern Seaboard Models is also expanding its line of trucks and wheels with 36" fine-scale metal wheels on

.540" length axles. Features include accurate front and rear profiles. Operational on Code 40 track, the wheels come in clamshell packages of 12. For more information contact a dealer or visit www.esmc.com.

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R. Bale

THE DREYFUS HUDSON

The Hudsons were a series of 4-6-4 steam locomotives favored by the New York Central Railroad and a few other roads serving territories void of mountains. Named after the Hudson River, the NYC used

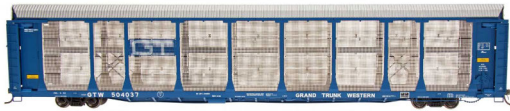
the 4-6-4 locomotives to handle its crack passenger trains, including the 20th Century Limited and the Empire State Express. The forte of all Hudsons was power at top speed. They were poor performers at low speed and required a booster engine on the trailing truck for starting. For this reason, they were generally assigned to routes with flat terrain. In response to the sensation created by the increased promotion of diesel powered locomotives in the late 1930s, the New York Central dressed ten of its class J3a Hudsons with Art Deco streamlining designed by famed industrial stylist Henry Dreyfuss. The Dreyfus locomotives featured prominently on NYC advertising until the railroad accepted the inevitable and assigned diesels to its premier name trains.



GHB International plans to import an N scale model of a J3a Dreyfus 4-6-4 Hudson. The N scale model will offer alternative steam power to the diesel led 13-car New York Central 20th Century Limited currently under development by Kato. Plans call for the N scale DCC sound equipped

version of the distinctive art deco Hudson to be produced in South Korea by Boo Rim Precision. In announcing the project GHB noted that moving forward with the N scale Dreyfus Hudson will be entirely dependent on the response of hobbyists and collectors interested in committing to the model. Inquiries may be directed to George Barsky at geoghb@erols.com.

InterMountain and Fox Valley Models have teamed up to release an N scale bi-level auto rack. The project calls for 16 paint schemes on auto racks and flat cars using tooling originally owned by Red Caboose. The ready-to-run model will have a heavy die-cast underframe, etched-metal side panels, and Micro-Trains couplers and trucks with metal wheelsets.



Providence & Worcester, BNSF (brown scheme) and Canadian National.



Auto racks and railroad owned flats will be available for Grand Trunk Western, CP Rail,

Pacific (two schemes), Southern Railway, Ferromex, Kansas City Southern, Transportación Ferrociaria Mexicana, Conrail, Norfolk Southern, BNSF (new small logo), and CSX.



InterMountain is selling an N scale model of an ACF 4650 cu. ft. triple bay covered hopper in 16 decorating schemes including

NCLX-Sclair Polyethylene. Additional road names are Burlington Northern, Southern Pacific, SSW-Cotton Belt, Reading, Reading Blue Mountain, Conrail, Erie Lackawanna, CCLX-Corn Products Co., Chicago & Eastern Illinois, ADM, SHPX-Tabor & Co., BNSF, ATSF, and CN-Wisconsin Central, and ACFX-French's.



For more information contact a dealer or visit www.intermountain-railway.com.



R. Bale

EMD SD70ACE

EMD developed the SD70 series of diesel-electric locomotives to counter GE's popular Dash 9-44CW. More than 5,700 SD70 units have been produced since production began in 1992, with most being SD70M and SD70MAC models. The SD70ACe is the successor to the SD70MAC with several design changes to comply with emission standards. The SD70ACe engine features fewer components in the inverter and functions with 15 percent lower internal pressure to significantly reduce emissions. Tier 2 versions of the SD70ACe are rated at 4,300hp. Subsequent Tier 3 models are rated at 4,500hp.



KatoUSA has expanded the selection of road names for its N scale SD70ACe diesel locomotive. The new decorating schemes include BNSF Swoosh, Norfolk Southern, and Union Pacific in the

Powered Buy Our People promotional livery.



Previously announced models include CSX, and two Union Pacific schemes: *The Spirit* and *George Bush Library*.



The choice of operating system for each road name includes DC, Digitrax DCC, and ESU LokSound DCC.





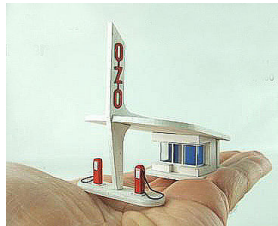
preprinted illuminated number boards.

Features of the N scale ready-to-run models include prototypically accurate bolsterless non-radial HTSC trucks, directional headlights, illuminated ditch lights, and



Coming in March/April 2021, Kato has announced two new roadnames for its N scale EMD SD70M locomotives. The new roadnames are CSX "Dark Future" and Southern

Pacific "Bloody Nose." The models will come with a 5-pole motor with dual-brass flywheels, floating-axle shock-absorbers truck design, directional headlights, illuminated numberboards, Kato magnetic knuckle couplers, and either DC compatible with Digitrax and TCS drop in decoders or ESU LokSound DCC by special order. For additional information contact a dealer or visit www.katousa.com.



Minifer is selling an N scale kit for a post-war gas station. Kits are available for a 1970s-era TOTAL station and a 1950-1960 OZO brand station. The assembled

laser-cut cardboard model has a foot print of 2.95" x 2.16". Detailed instructions are included. For additional information visit www.minifer.fr/en.



observation car with an open rear platform. The Tuscan red N

New **Micro-Trains** models released to dealers include this 85' heavyweight

scale model is decorated for Pennsylvania with buff lettering and a Keystone herald.



Although this 39' Union Pacific tank car appears to be a standard single dome fuel oil carrier, the N scale model is based on a prototype designated to haul fish oil.



Micro-Trains N scale version of this 50' steel gondola with fishbelly sides comes with a removable load. The model rides on 70-ton Bettendorf solid-bearing trucks.



Micro-Trains N scale 39' Chateau Martin 6,000 gallon aluminum tank car was inspired by a prototype car built in 1940 for Commodities Car Company. It was leased to Eastern Wine Corporation, owners of the Chateau Martin Brand Wine. The wine was shipped from Chateau Martin's famous winery in Waterford, California to New York where it was bottled at a factory in the Bronx. For additional information on Micro-Trains models contact a dealer.



Walther's plans to release a new kit for a pair of oil storage tanks in February. The N scale models will be available in a 2-pack. For additional information contact a dealer or visit www.walthers.com.

NEW DECALS, SIGNS AND FINISHING PRODUCTS

Mask Island Decals has released five new water slide lettering sets including one for Laurinburg and Southern 50'



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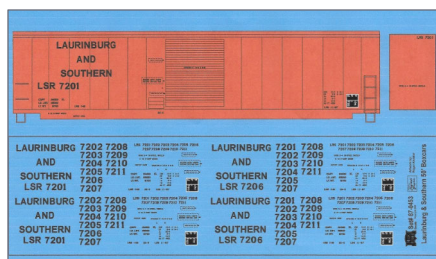
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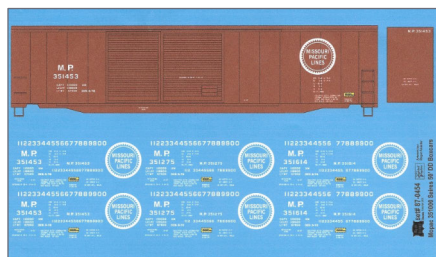
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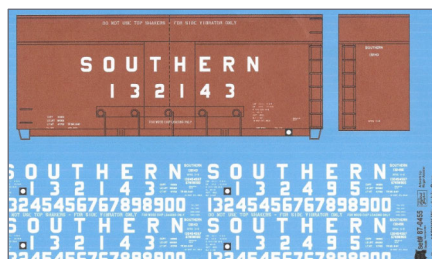
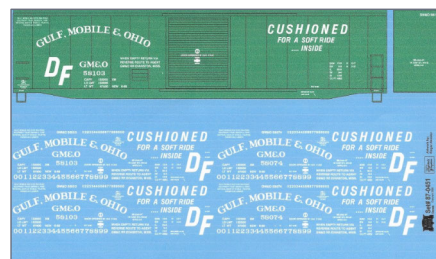
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PS boxcar. Also new is set for a Missouri Pacific 50' boxcar with double Youngstown sliding doors.



New Mask Island decals are available for a 40' Gulf, Mobile & Ohio boxcar 40' and a GM&O 50' PS-1 boxcar with a cushion underframe and a DF slogan.



Also new from Mask Island is a decal set for a 40' Southern boxcar converted to WOOD CHIP LOADING ONLY. To purchase visit www.maskislanddecals.com where the decals are displayed in alphabetical order by road name under freight cars.



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! BRIEFLY NOTED AT PRESS TIME ...

Bachmann has released a group of HO scale 40' single-dome tank cars decorated for Tidewater, Staley, Warren, Clark Oil, Eastman Chemical, and Alaska Railroad. N scale 36' 6" single-dome tank cars are available for Quaker State and Union Pacific Water car ...

Instead of a Christmas car, **Con-Cor** will celebrate the 2020 holiday season with a 2-pack of 53' containers. One will be decorated in a Christmas theme with the second container displaying a Happy New Year 2021 message. Both HO and N scale models will be available. For details including reservation information visit www.con-cor.com/product-category/2020-christmas-cars ...

Kadee's Christmas car for 2020 will be a specially decorated PS-2 twin-bay covered hopper car. Pre-orders are now being taken by Kadee and Kadee dealers ...

Morning Sun has announced a November 15 release date for Volume 3 of Penn Central in the Conrail Era. Details at morningsunbooks.com ...

Tichy Train Group has released 50 new N, HO, S, and O scale decals. Check them out at www.tichytraingroup.com/Shop.aspx ... ■

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SELECTED EVENTS



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Due to COVID-19 restrictions, please check with any organization hosting an in-person event for the latest status of the event. ■

Ongoing

ONLINE, Zoom, dates vary, see website. Operation Special Interest Group Meetups – limited attendance available. For more information visit www.opsig.org/Virtual. Past meets are available online at www.opsig.org/Virtual/Past.

ONLINE, Zoom & YouTube, dates vary, see Facebook page. “New Tracks” Meetup, hosted by Jim Kellow, MMR. See www.facebook.com/groups/544983829687669/user/100012440913008 for more information.

ONLINE, YouTube, every other Saturday. 4th Division, Pacific Northwest Region, NMRA hosts online layout tours and clinics. Archive available at www.youtube.com/channel/UC-pc9_xA-w2t3RdhLZ7BNOA.

CALIFORNIA, SAN DIEGO, Cancelled – TT&TO sessions on the Tehachapi Pass Layout of the La Mesa Model Railroad Club have been cancelled due to COVID until further notice. The museum is open to limited amounts of visitors on Fridays, Saturdays, and Sundays, and trains will be running on those days.

November 2020

CANADA, ONTARIO, FENWICK, November 14-15, 21-22, Greater Niagara Model Railroad Engineers Open House, 1141 Maple Street. For more information visit newtracksmodeling.wordpress.com.

INDIANA, DANVILLE, November 21, Danville Train Show, presented by the Central Indiana Division of the NMRA. Hendricks County Fairgrounds, corner of E. Main St. and County Road 200 E. Due to COVID-19 restrictions, Masks will be required, hand sanitizer stations provided, and contact tracing in effect. For more information visit www.cidnmra.org/services.

Future 2021-2022

CALIFORNIA, SANTA CLARA, July 4-11, 2021, Rails By the Bay, 2021 NMRA National Convention and National Train Show. Santa Clara Marriott Hotel. For more information visit www.nmra2021.com.

CANADA, CALGARY, **Cancelled** – SUPERTRAIN 2021. For more information visit supertrain.ca/Info.html.

CONNECTICUT, WEST SPRINGFIELD, **Cancelled** – 2021 Railroad Hobby Show. For more information visit www.railroadhobbyshow.com.

TEXAS, PLANO, January 16-17, Dallas Area Train Show, hosted by the North Texas Council of Railroad Clubs, Plano Event Center, 2000 E. Spring Creek Pkwy. For more information see dfwtrainshows.com/#clients.

INDIANA, NOBELSVILLE, January 31, Noblesville Train Show, presented by the Central Indiana Division of the NMRA. 2003 Pleasant Street. For more information visit www.cidnmra.org/services.

INDIANA, FRANKLIN, May 15, Franklin Train Show, presented by the Central Indiana Division of the NMRA. Johnson County Fairgrounds. For more information visit www.cidnmra.org/services.

MISSOURI, St. LOUIS, tentatively September 2022, NMRA National Convention and National Train Show. ■

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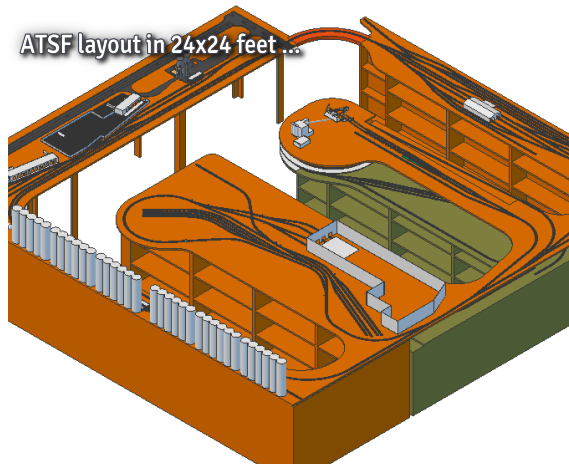
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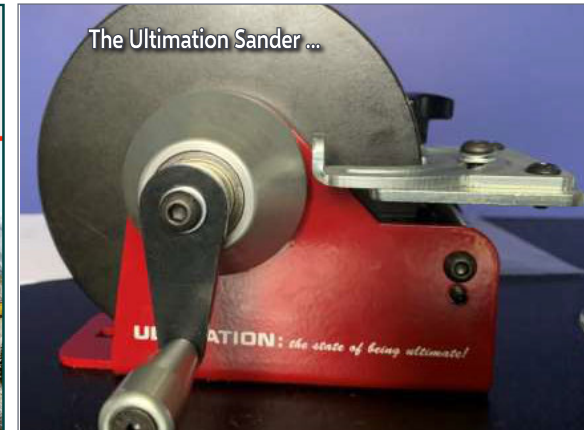
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