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- Pre-USRA NYC steamers
- Scratchbuild a better sandhouse
- Stock cars used for other things
- ... and much more inside!

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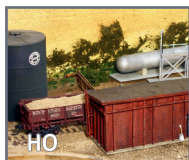
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JOE FUGATE



Limited Modeler: Pre-USRA NYC steam locomotives

JIM SIX



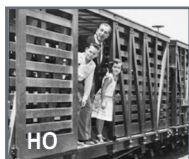
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JOE FUGATE



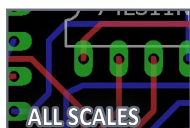
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Compiled by JOE FUGATE



What's Neat: Four ways to make conifers, ...

KEN PATTERSON



My tortoise drilling template solution

MICHAEL MCGINLEY



Ops for the rest of us: Two lightweight ops examples

DOUG MATHESON



The Santa Rita mini layout

FERNANDO BELLINI



Using a hobby chop saw

JEFF PALMER



Savvy Modeler online: Superdetailed handlaid track

Compiled by the MRH STAFF



January 2021 news and events

RICHARD BALE and JEFF SHULTZ

PUBLISHER'S WELCOME

introduction



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JOE FUGATE GIVES MORE NEAT AND TIDY DCC INSTALL TRICKS ...

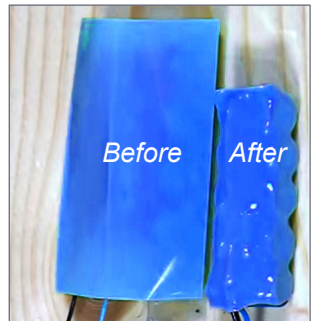


RATE THIS ARTICLE

LAST MONTH I DISCUSSED SOME OPTIONS TO HELP KEEP your DCC installs more tidy, namely Kapton tape and black waxy thread. This month, let's keep going because I have still more goodies to help keep things neat and tidy.

First, the more obvious item: shrink tubing. You can literally get shrink tubing in all kinds of sizes and colors beyond just the tiny black shrink tubing we're all used to. One important tip: buy shrink tubing in rolls, not in cut-to-length packages. You will pay up to 20 times less for shrink tubing on a roll [1, 2]!

Don't overlook large flat shrink tubing, it can be very handy for wrapping things like your own stay alive circuitry [3].



1. To get the best pricing on shrink tubing, buy it in rolls: ~10¢ per foot.

2. Buying shrink tubing cut-to-length can cost far more: up to \$2.50 per foot.

3. Large flat shrink tubing allows neatly wrapping your own circuits.

To get a shopping list for this article, visit the *MRH* website at this link: mrhmag.com/magazine/running-extra/2021-01/publishers-welcome



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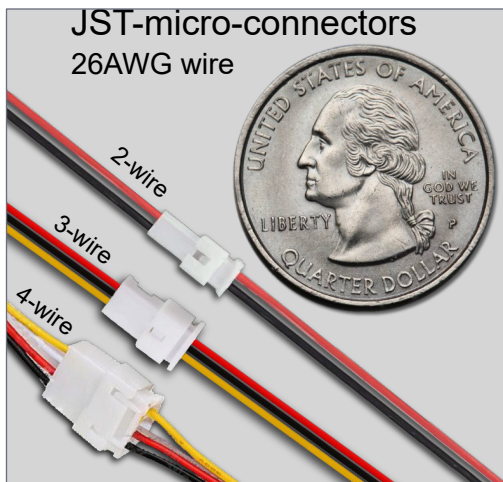
It can also be helpful to make it easy to disconnect lighting installed in the shell from the decoder installed on the chassis/motor.

For this, you can get JST connectors pre-wired with 26AWG wire – the most useful sizes include 2, 3, and 4 wires [4].

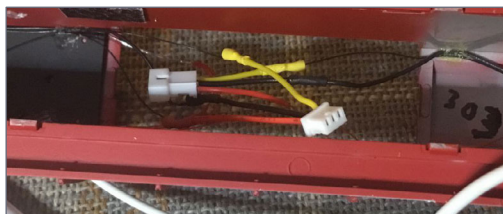
The price is certainly right on these pre-wired JST connectors - they can be had for as low as 30 cents each!

Compare that to the price of \$12 to \$14 per pre-wired connectors from DCC vendors. While the JST connectors may not be quite as compact, they're not that much larger and they're much more economical.

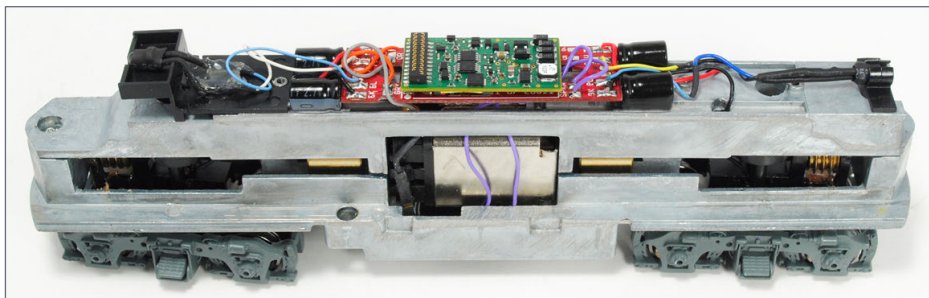
Give these a try to get more tidy DCC installs!☑



4. JST connectors pre-wired with 26AWG shown here next to a US 25 cent piece.



5. Nick Santo shows how he used JST connectors to allow disconnecting function leads in the shell from the chassis.



6. Using shrink tubing can help keep a DCC install tidy and insulate connections to protect them against shorts. *Train Control Systems photo*

THE LIMITED MODELER

column



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

MRH Running Extra | January 2021

JIM SIX LOOKS AT PRE-USRA STEAM LOCOMOTIVES FOR THE NEW YORK CENTRAL'S NORWALK BRANCH ...



THIS MONTH'S "LIMITED MODELER" IS SOMEWHAT DIFFERENT IN THAT IT is about what I plan to do and not about what I have done. I got started by researching early New York Central Lines locomotives that were common on the Norwalk Branch between Elyria, OH and Millbury, OH from about 1900 to 1915.

This has been a strange time for me in the hobby. I keep looking at railroading farther and farther back in time. Post-Civil War starts to get interesting for me, moving up to the 1890s, when things get really fascinating. I love the locomotives and rolling stock from these eras [2].

The problem is that prior to 1890, freight cars and locomotives are exceedingly difficult to find. While manufacturers offer models of locomotives appropriate to the 1890s, freight cars are still difficult to find, and at age 72, I don't have enough time to start scratchbuilding.



DOING MORE WITH LESS



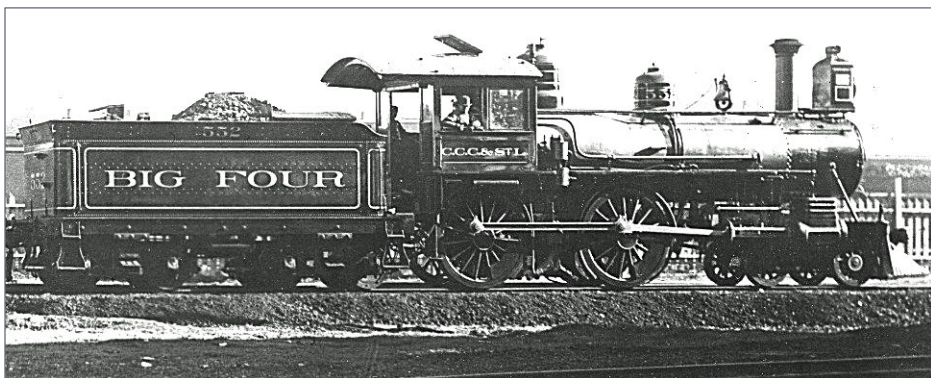
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1. The date is July 6, 1940. While the war rages in Europe America remains at peace. Here a former Ulster & Delaware 4-6-0 leads a westbound Wallkill Valley Branch freight at Campbell Hall, New York. This photo was snapped but eight years before my birth. *Ray Breyer collection*



2. While this early photo is of low quality it provides the “feel” for earlier 4-4-0 locomotives. Here Big Four 552 was photographed sometime circa 1890, maybe earlier. The locomotive was certainly simple when compared to later, larger locomotives. Note the engineer wearing a derby hat. The tender has a nearly full load of coal. *Ray Breyer collection*

THE LIMITED MODELER | 3

The period from 1900-1929 captures most of what I like in railroading, but it may be too many years to practically represent. I should cut it back a bit. I am looking at a “pick-an-era” type of operation for my future layout. That is, I pick an era to operate for a given session and put appropriate equipment on the layout to make it work. The year picked can and will change from one operating session to the next.

One time frame would be from 1910-1914. The other would be 1924-1928. I already have all the locomotives, freight cars, and cabooses needed for the layout for the latter period. I still need to acquire about half of the freight cars for the former.

To make this work, the new layout will be much simpler. I will plan the operating sessions to require no more than 50 freight cars and two locomotives. I could use three or four locomotives, but two will work.

Prototypical operations through my layout’s two chosen towns of Clyde and Monroeville, Ohio, should make this doable. The line did not have much rail traffic each day. An operating session representing three or four hours would equate to three or four trains, one or two of which would be passenger. That’s it.

The one real glitch in all of this is that I have no passenger cars. Oh well, I will have to address that regardless of what year I choose for operations, unless I go back to modeling Conrail. Fat chance!

One reason the years before 1915 appeal to me is the Lake Shore & Michigan Southern Railroad. The LS&MS, along with the NYC&HR and the NYC Lines, merged into the New York Central in 1914.

Another draw for the line between Clyde and Monroeville pre-1915 is the continued use of nineteenth-century motive power. This was before the demands of WWI brought about the USRA and its modern locomotive designs [3].



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3. This classic photo was taken at Harrietstown, New York in 1910. NYC&HR 1106 is from an earlier time but continues to work pulling a two-car passenger train. It looks like it came from the Great Locomotive Chase that took place during the Civil War. *Ray Breyer collection*

I envision operating my 26'x12' layout with 4-4-0, 4-6-0, 2-6-0, and 2-8-0 locomotives, along with the era's shorty freight cars. For me this idea is both appealing and relaxing.

As my interest grows for the 1900-1915 timeframe, I have had to consider what models are available to support this interest. There is a misconception in the hobby that there are not enough good models available to model early times. Fortunately, there are models of these locomotives readily available from Bachmann and Athearn/Roundhouse. With proper detailing and paint, I can make them match LS&MS prototype.

4-4-0 TYPES

Let's start with the venerable American Type, with its 4-4-0 wheel arrangement. The first 4-4-0 was built in 1837. It was

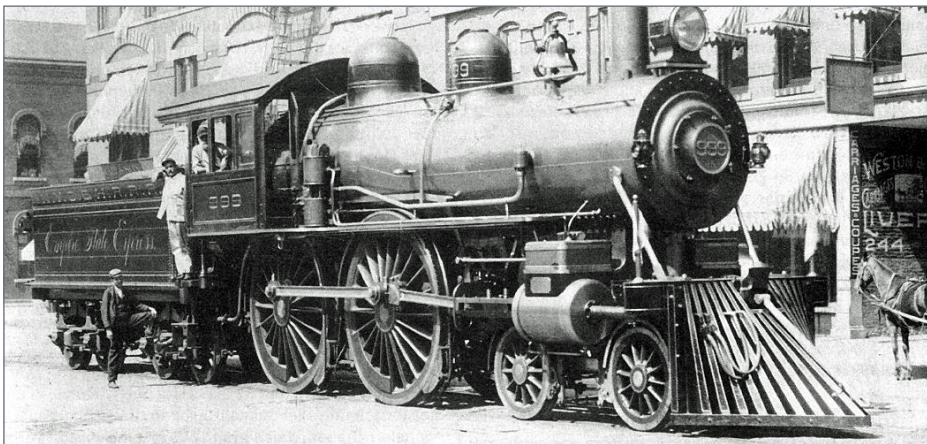
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produced in large numbers from the mid 1840s until the mid 1890s, with some even built after 1900. In the 1920s, some 20,000 American types remained in service across North America, including some of the older 4-4-0s, which the railroads updated to incorporate the latest technologies.

Of course, there was the famous record setting NYC 999, timed at 112.5 mph in 1893 while leading the Empire State Express between Batavia and Buffalo, New York [4]. Built for speed with its 86" drivers, the 999 was clocked at over 105 mph many times between Batavia and Buffalo.

Worthy of note is that the 999 was a member of the NYC I-class 4-4-0 steam locomotives. This class of locomotives was fitted with 70-inch drivers which allowed the locomotives to power four-car passenger trains at about 86 mph [5].

The 999 was the only locomotive fitted with 86" drivers, and their adhesion proved insufficient for longer passenger trains. Within a couple of years, she was re-fit with the same 70-inch drivers as the rest of her class [6].



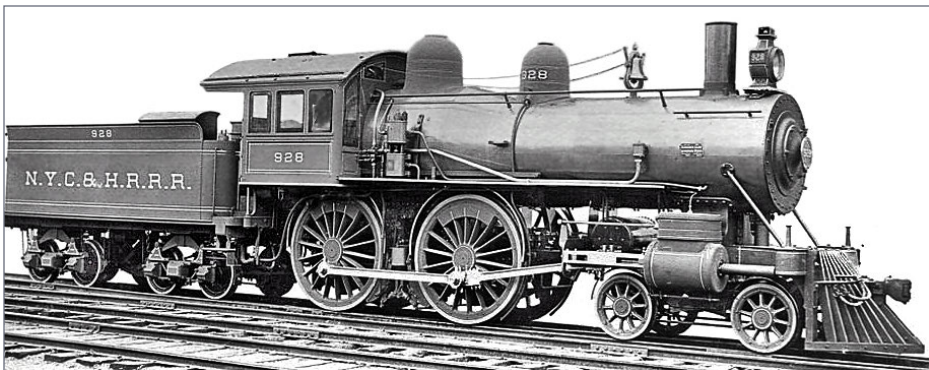
4. On May 10, 1893 the 999 set the world speed record at an almost unbelievable 112.5 mph! 999 was the only locomotive of the I-Class fitted with 86" drivers, which surely played a part in setting the speed record. What a beautiful locomotive!. *Ray Breyer collection*



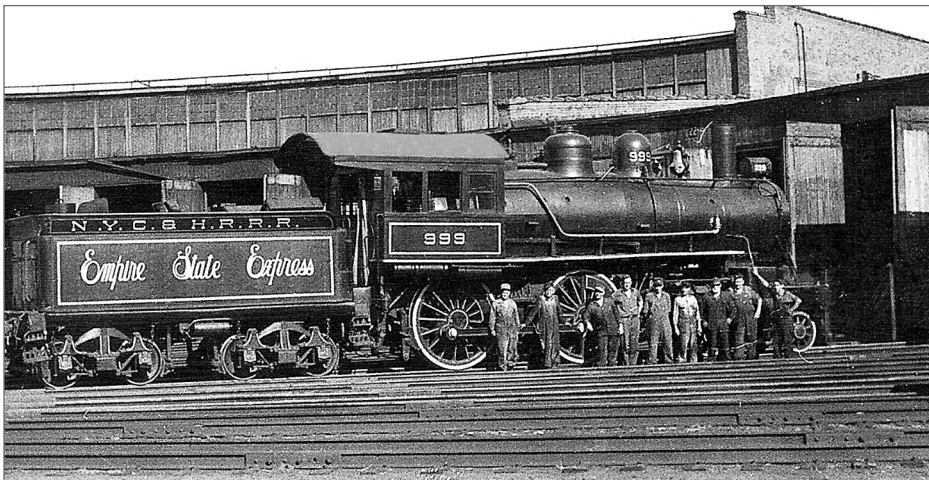
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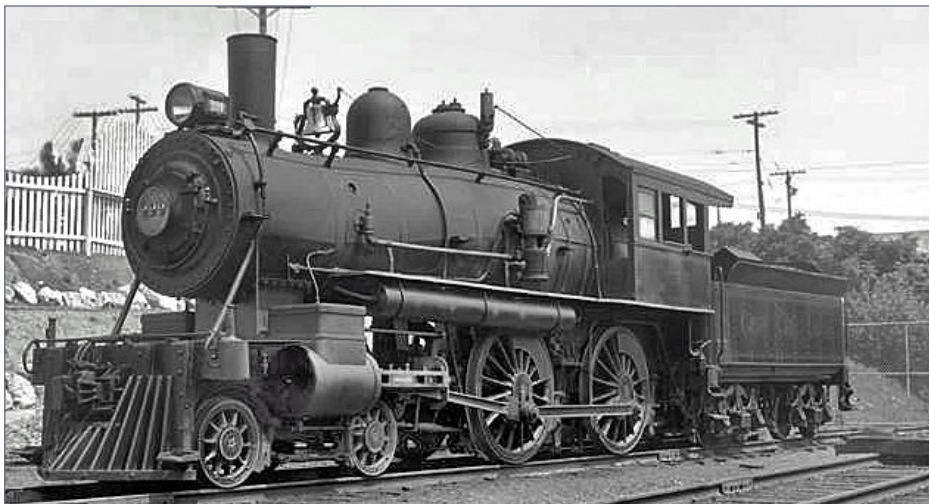
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5. NYC&HR 928 was a sister to the 999. The 928 was fitted with the 70" drivers standard to the I-class locomotives. The 999 was the only I-class fitted with 86-inch drivers. Other than the drivers, the I-class 4-4-0s were identical to the 999. Compare this photo with [2]. You have to like the huge cow-catcher of this locomotive. *Ray Breyer collection*



6. The 999 is beautiful by anyone's standards. In this view the huge 86-inch drivers have been replaced with smaller 70-inch drivers. I also notice that the steam dome has been relocated farther forward compared to [2] and the that the headlight is electric at the time. *Ray Breyer collection*



7. Here is the 999 in later years, when she was working lighter, secondary trains. Note the simpler cowcatcher that replaces the original swept one on the pilot and the electric headlamp. The 999 lasted in regular service until May 1952. *Ray Breyer collection*

By 1900 trains had grown in length and weight, and the 4-4-0 type locomotives proved incapable of handling the heavier trains, so they were reassigned to lighter, secondary trains. The 999 and sisters in the I-class exchanged their swept cowcatchers for simpler passenger-style cowcatchers, and their kerosene lanterns for electric headlights [7].

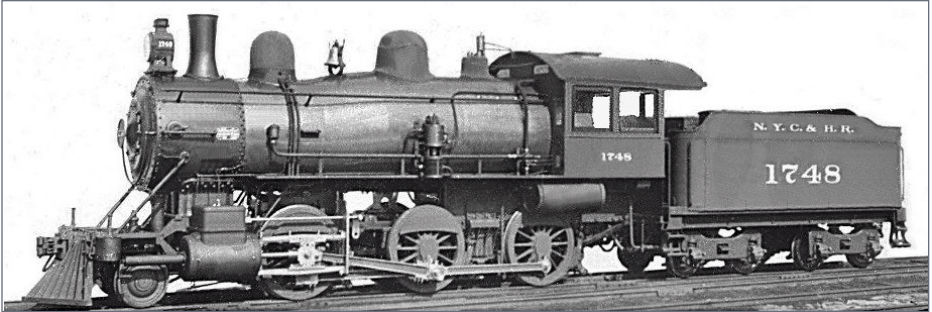
The 999 lasted in regular service until May of 1952 – 59 years after entering service – when it was relegated to switching milk cars in yard service for a few more years. It was not taken off the roster until 1962.

As trains became longer and heavier, the 4-4-0 configuration's pulling power proved insufficient. The slightly larger 2-6-0 "Mogul" and the 4-6-0 "Ten Wheeler" were developed for freight and mixed service, respectively.

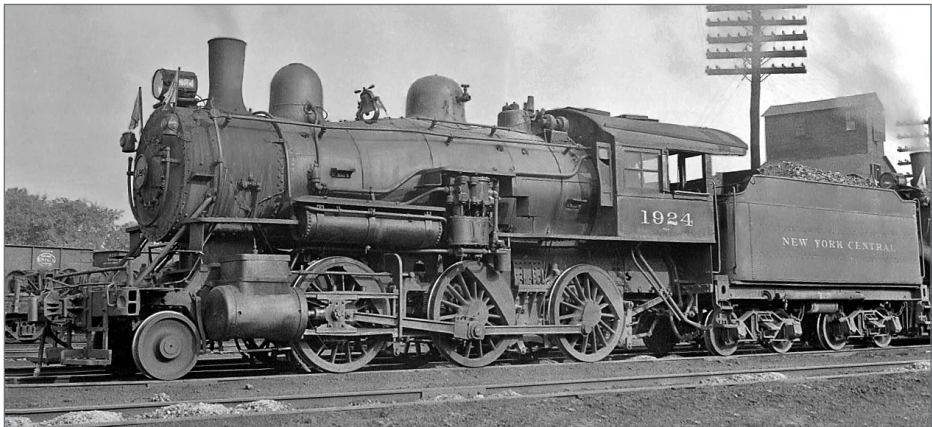


2-6-0 TYPES

The 2-6-0 Mogul was an early design of a freight locomotive produced from 1852 until 1929. They began to appear on the Vanderbilt railroad lines in the 1870s. These locomotives were



8. This image of N.Y.C.&H.R. 1748 is circa 1890s. This 2-6-0 is typical of early NYC Lines 2-6-0 locomotives in their as-delivered condition. Note the single-phase air pump and cowcatcher front pilot. The tender trucks are a very old style also. *Ray Breyer collection*



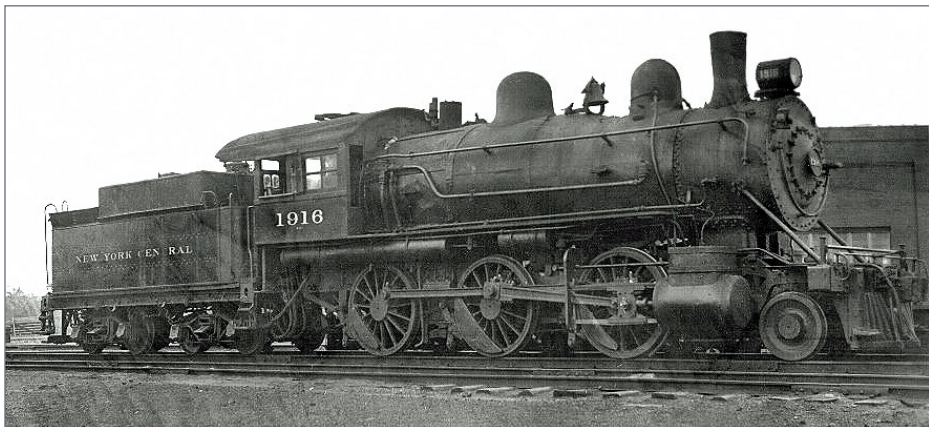
9. NYC 1924 displays an upgraded air compressor and larger air tank. Other improvements include an electric headlight and arch bar tender trucks. The locomotive retains its Roman style lettering, which dates this photo to 1936 or earlier. I plan to model this locomotive using the Bachmann Mogul [17]. *Ray Breyer collection*

not large, but they excelled in freight service [8]. They served the New York Central for many decades, hauling almost exclusively freight.

Like the 4-4-0, the 2-6-0 had a long service life with many updates along the way as new technologies and improvements became available. Notably, a footboard pilot replaced the original cowcatcher, and the air pump was upgraded with a larger tank and new plumbing [9]. In some cases the NYC upgraded the locomotives to burn oil [10].

4-6-0 TYPES

The New York Central Lines rostered a large number of 4-6-0 locomotives [11]. While many folks view the 4-6-0 Ten-Wheeler as a passenger locomotive, it was much more of a general-service locomotive, and the NYC utilized the class of locomotive in both passenger and freight service throughout its career. They most certainly would have seen use on the Norwalk branch [12].

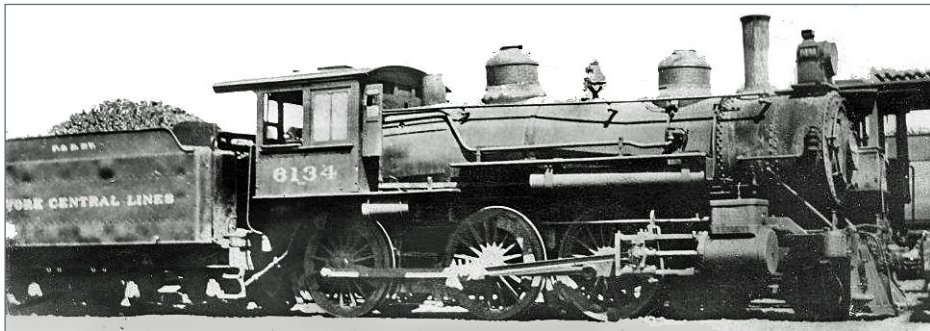


10. NYC 1916 is very similar to the 1924 [16 & 17], though the oil tank in the tender indicates it has been modified to burn oil instead of coal. The locomotive retains its cowcatcher. *Ray Breyer collection*

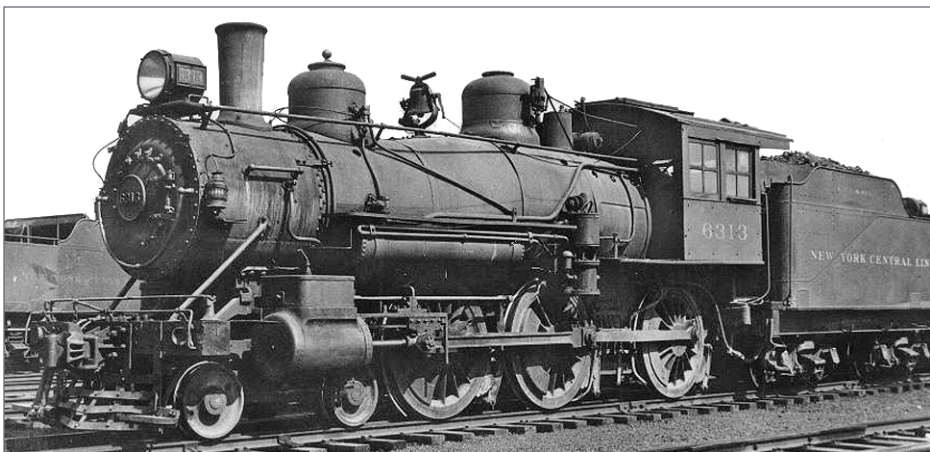


THE LIMITED MODELER | 10

By 1920, newer designs such as the 4-6-2 light and heavy Pacific types had become the featured passenger locomotive on most railroads, including the NYC, sending the 4-6-0s to



11. Peoria & Eastern (NYC subsidiary) 4-6-0 photographed circa 1910. It is a classic early ten-wheeler. The early headlight and the 1800s style cab indicate an earlier era. The Bachmann model would make a great starting point for modeling this prototype [18]. *Ray Breyer collection*



12. Big Four 6313 is another great candidate for modeling with a Bachmann 4-6-0. Lettering is typical of the time between 1900 and 1936. The headlight also suggests this to be a 1920s photograph. A model of this prototype would be a perfect fit for my Norwalk Branch plans. *Ray Breyer collection*

secondary service. Still, the 4-6-0s managed to soldier on such secondary lines as the NYC's Canada Southern, which ran north of Lake Erie between Detroit and Buffalo [13],

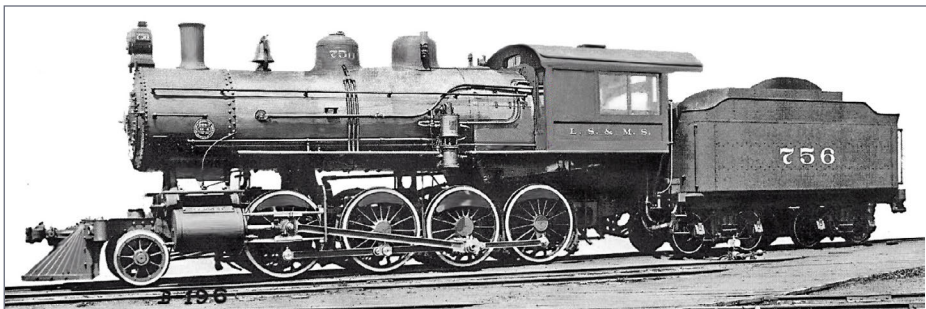
The New York Central Lines had a large number of 4-6-0 locomotives in its roster [9]. Like the 4-4-0, the 4-6-0 was a long-lived locomotive design with a few lasting into the mid-1950s performing secondary service, especially on the NYC's Canada Southern, which ran north of Lake Erie between Detroit and Buffalo.

By 1920, the railway relegated it to mostly light freight service. The light Pacific 4-6-2 had become the featured passenger locomotive on most railroads, including the Central. In the mid-1920s heavy Pacific locomotives were holding down the premiere passenger service.

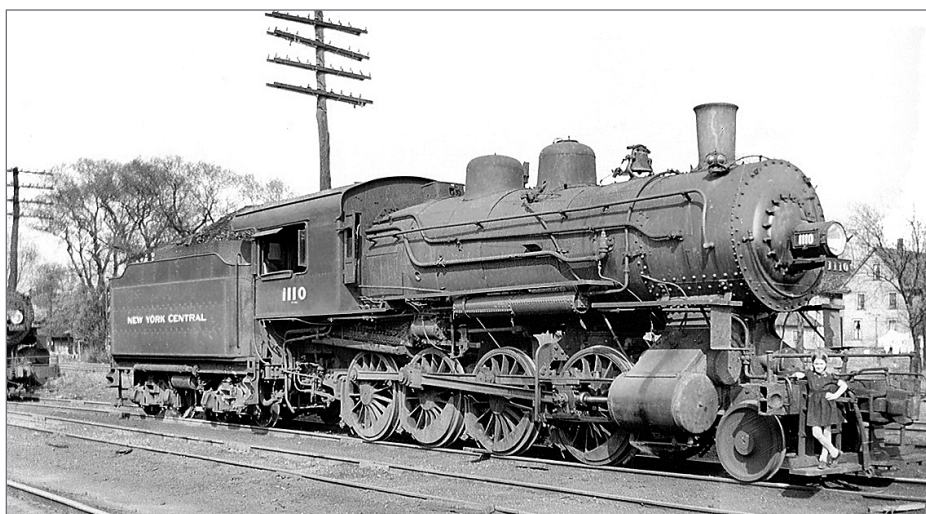


13. Michigan Central 8153 was photographed at St. Thomas, Ontario, Canada, on July 2, 1936. Its upgrades include new domes, modern air pump, new electric headlight, and a tender coal bunker extension. These changes are great for post-1920s modeling but will not work for earlier years. If you are modeling the 1930s through 1950s, the Bachmann 4-6-0 will make a great model to work with. *Ray Breyer collection*





14. LS&MS 756 is typical of the NYC Lines 2-8-0 locomotives between 1890 and 1910. Simple, clean lines, relatively small drivers and a single-phase air pump are all typical features of these early 2-8-0s. I am planning a pair of Athearn 2-8-0 models for my layout to represent these early freight haulers. *Ray Breyer collection*



15. Shown at Dunkirk, New York in 1943 is NYC 1110, a 2-8-0 Consolidation. This locomotive appears much like the 756 in [14], but with an upgraded steel cab and lowered front headlight. Before about 1915 the 2-8-0 was the most numerous steam locomotive for hauling freight on the railroad. Note the young girl standing on the front pilot step! *Eric Hansmann collection*

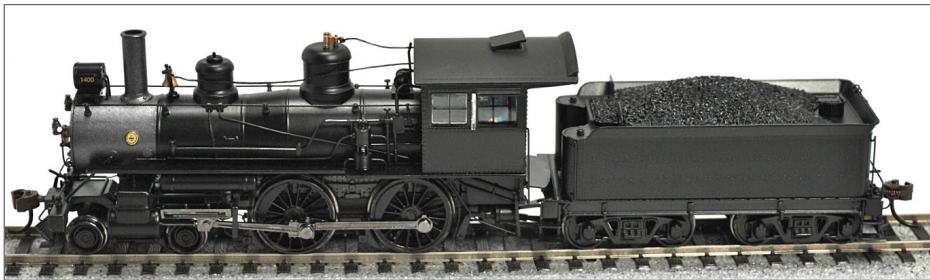
2-8-0 TYPES

The 2-8-0 Consolidation appeared in the 1880s for freight service [14]. Its four smaller drivers gave it better adhesion than Moguls. Early 2-8-0 type locomotives were slow in speed, but they could pull much heavier trains. It did not take long for them to gain the respect of operators, and more 2-8-0s were produced than any other wheel configuration.

After 1900, the 2-8-0 Consolidation locomotive became the primary locomotive for heavy mainline freight service, bumping older types to secondary light freights. The 2-8-0 reigned for about 20 years before the 2-8-2 Mikados showed up and began to take control of heavy freights. Even so, these locomotives had long careers, with many lasting until the end of steam [15].

APPROPRIATE MODELS

This month's "Limited Modeler" has been about researching early New York Central Lines locomotives that were common on the old LS&MS line between Elyria and Millbury, OH between 1900 and 1915. I have been thinking about what models are available to support this interest. Both Athearn and Bachmann offer HO-scale steam locomotives that work well for the New York Central Lines and other railroads in this period.



16. This is the Bachmann modernized 4-4-0 locomotive. It truly is well-detailed model that runs as well as it looks – and that's really good. My model has arch bar trucks under the tender. Factory-applied detail items are well done and neatly installed. The model is available with both DCC and sound. *Bachmann photo*





17. Here is the Bachmann 2-6-0 Mogul. Its modernization goes too far for modeling much before 1920.

Bachmann photo

Bachmann offers several early 4-4-0 steam locomotives that will work all the way back into the 1850s. With detailing upgrades, they can match the prototype as it would have appeared between 1900 and 1915, too. Both Bachmann and Athearn offer modernized 4-4-0 locomotives that are good for modeling from about 1890-1920 [16]. I have one of these locomotives and am considering getting a second, since it makes a really nice passenger locomotive.

Bachmann's modernized 2-6-0 mogul is too modern for modeling much before 1920 [17]. I have one of them in my collection. I see it as useful for modeling about 1920 to the 1950s. I would like to use it for operating from 1900 to 1915, which would mean backdating the model.

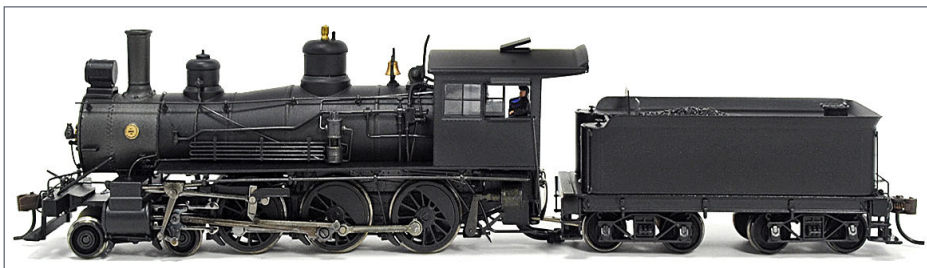
The cab and cylinders are both too modern for what I want. I could swap the cab with one from the Bachmann 4-4-0, but changing the cylinders would be out of the question. I could add a single phase air pump and associated plumbing, and replace the tender with one from the Bachmann 4-4-0 or 4-6-0. Even without being able to swap the cylinders, those modifications would go a long way.

Bachmann also offers a nice modernized 4-6-0. Available variations in detailing and tender configurations make it work for many railroads. Bachmann even offers the model with 57" or 63" drivers, making it suitable for various kinds of service. The model shares some detailing items with the modernized 4-4-0, and its factory-applied detail items are well done and neatly installed [18]. I have two of these 4-6-0s in my collection.

Athearn/Roundhouse offers a very nice 2-8-0 [19]. Athearn seriously upgraded this model after taking over Roundhouse, particularly the drive and the electronics, which it upgraded with DCC Sound. It is not a large 2-8-0. It looks and runs great. It's not as detailed as the Bachmann models, but it is a simple matter to add detail. Athearn's model is of a small 2-8-0. Bachmann offers a larger 2-8-0, but it is too modernized for the 1900-1915 era I am after.

In fact, I plan to add Bachmann detailing (available from Bachmann) to my Athearn model. This will make it look like part of a family with the Bachmann 4-4-0 and 4-6-0 locomotives. I may even replace the cab with a Bachmann 4-4-0/4-6-0 cab that more accurately represents the LS&MS prototype [20].

I have already acquired a Bachmann modernized 4-4-0 along with two Bachmann modernized 4-6-0s, and a Bachmann 2-6-0 Mogul.



18. This is the Bachmann modernized 4-6-0 locomotive.
Bachmann photo



19. This is the Athearn/Roundhouse 2-8-0. *Athearn photo*





20. This is the Athearn 2-8-0 upgraded with Bachmann detailing. I replaced the cab with a Bachmann 4-4-0/4-6-0 cab. While the upgrades are “below the radar” for many model railroaders, they make a more realistic model. *Athearn photo graphically modified by Jim Six*

I plan to add a pair of Athearn 2-8-0 models. These six locomotives will allow me to operate the layout in any year from 1900 to 1915. These locomotives from Athearn and Bachmann should work with many other railroads, too.

What about freight cars? Many modelers think that one has to build their fleet with resin kits. Actually, one can use Accurail and Roundhouse boxcars, plus Bowser hopper cars and gondolas to make up the bulk of the fleet. Add a mix of specific resin kits, and you will have everything you would ever need.

Then there is the question of cabooses. Not a problem. I have four Trix 19000-series NYC wood cabooses and two Walthers wood cabooses that I am reworking to match NYC Lines cabooses. I also have a Nickel Plate Road 1000-series caboose that is a match for a group of NYC Lines Big Four cabooses. Remember, until 1917, the Nickel Plate Road was part of the New York Central Lines. I believe the prototypes for all of these cabs go back to the 1890s, so these six cabs should be all that I will ever need for operating in 1900-1915. ☑

★★★★★
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GETTING REAL



column

MRH Running Extra | January 2021

TONY THOMPSON SCRATCHBUILDS
A SAND HOUSE ...



EVERY ENGINE TERMINAL NEEDS SOME KIND OF DELIVERY SYSTEM FOR locomotive sand. I needed a small sand house for the small steam-era terminal on my Southern Pacific layout. My challenge was to find plans or good photographs for what an SP sand house looked like.

Southern Pacific had “standard” sand house plans, but I have yet to find photographs of sand houses anywhere on the SP

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system built exactly to this plan. As on many railroads, the “standard” plans were intended as a general framework. Onsite workmen adapted them to available space and to the scale of expected need.

THE SP PROTOTYPE

Actual SP sand houses rarely, if ever, matched the “standard,” so a model sand house need not follow the standard design exactly. In fact, I suppose you could say that following that drawing exactly would be unprototypical.

Nevertheless, it is useful to start with the SP drawings. I found the plans I’m using in the softbound book, *Southern Pacific Lines Common Standard Plans, Volume 4*. They are reproduced here with permission.

This plan, MWD 8410, comprises three sheets. They were drawn in 1929 and show revisions in 1940. Plan, elevation, and sectional views provide a complete description [1-3]. I find the direct indications of all timber and siding sizes most helpful, since they facilitate selection of materials for a model.

The structure is simple. The main building has blank end walls, and the back wall contains only a pair of sand doors for loading. The front wall has the sand doors plus a personnel door and two windows.

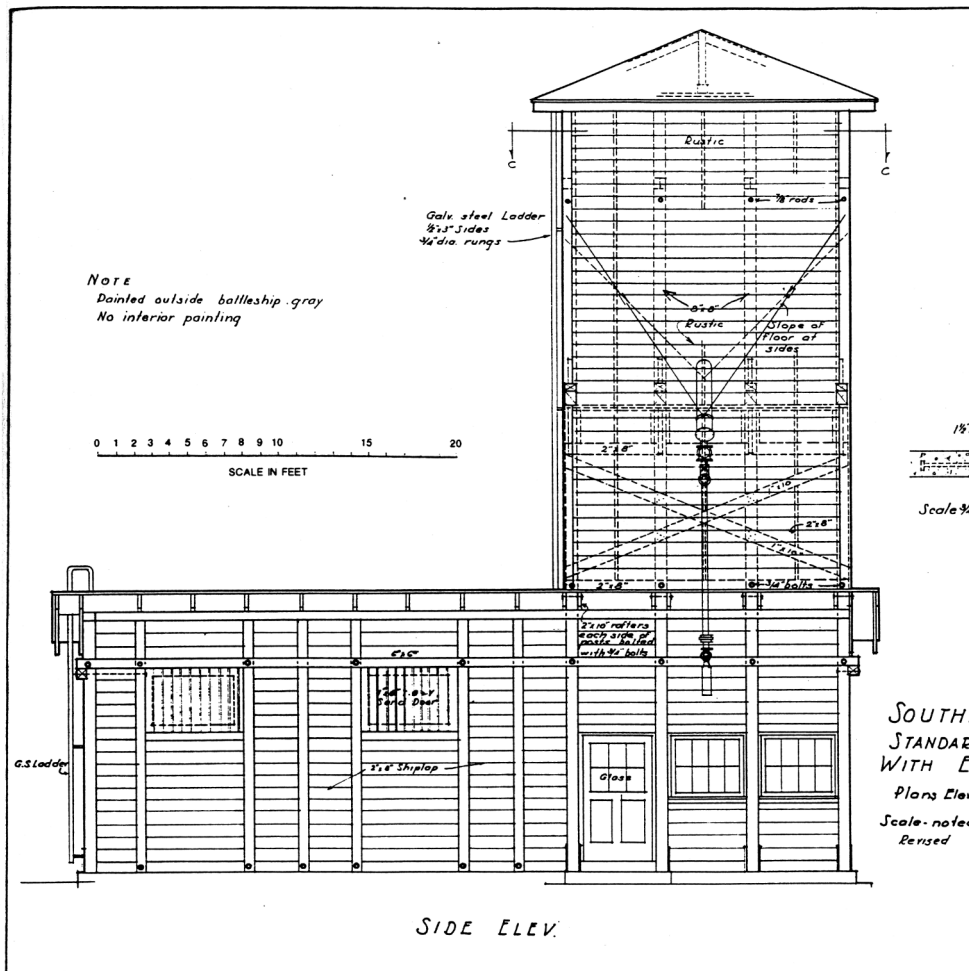
The first decision to make is about the tower. With sheathing hiding all internal bracing, the standard design for the tower would be simple to model. However, prototype photographs of SP sand houses typically show different tower arrangements. In fact, many sand facilities show no tower at all, just a supported delivery pipe or pipes [4-6].

The third sheet of MWD drawing 8410 shows cross-sections that are very helpful in understanding the function of each part of the structure. The difference presumably was whether the sand house used air pressure to move the sand all the way

GETTING REAL | 3

from ground-level sand storage to delivery, or whether it used gravity to deliver sand to locomotives from an overhead bin. If the former, no tower would be necessary.

Even when some kind of elevated storage bin is used, often it is not large and not in the form of a tower [7]. The only photograph I have found of a tower that is similar to the SP



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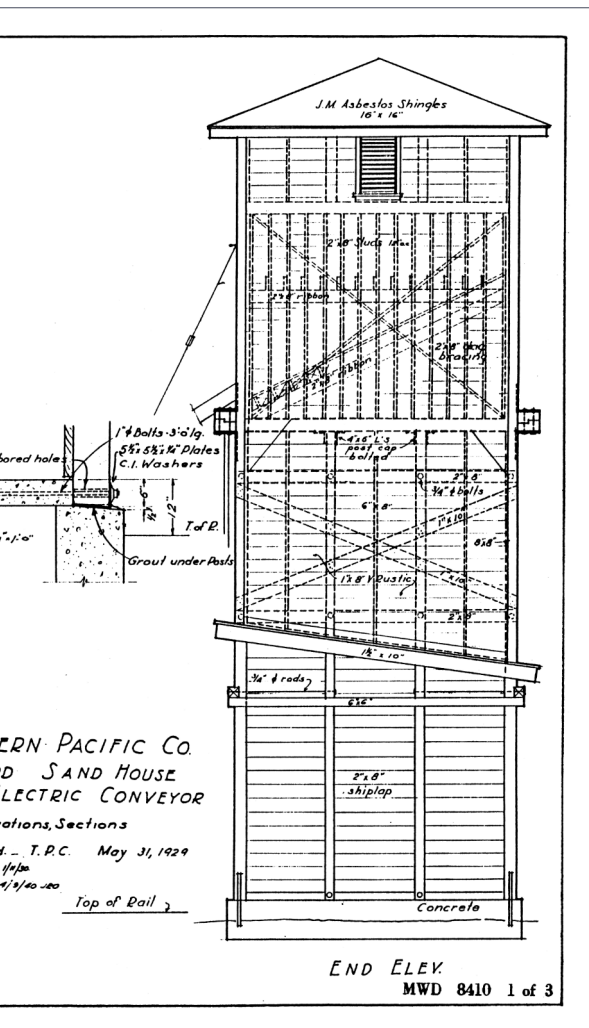
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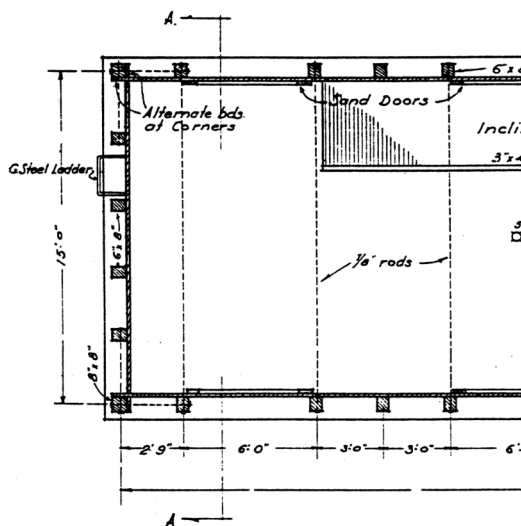
drawings is the pre-1960 sand house at Eugene, Oregon [8, 9], though its twin towers have their support timbers unsheathed. Of course, at really major facilities the sand houses might get pretty large [10].

The primary decision in planning this model is thus whether to build it with the tower as drawn, or to simplify it. I chose to go



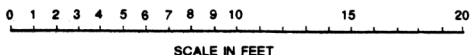
1. Sheet 1 of the “standard” SP sand house drawing, showing side and end elevations.





NOTE:

*5522 Benjamin reflector for exterior 50 W., *5526 Benj. for exterior 200 W., *5437 Benj. for interior First floor and JR-16 conduit porcelain fitting for light in Motor R'm. GE 632 wall switch and CC-5 Hubbell plug receptacle. Exterior switches D.S. 108 W.P. cover in F.S. Condulet. Flood light Davis D.S. 5. *972-123 Trumbull Universal service switch for lighting. *72361 Trumbull safety switch for Power.



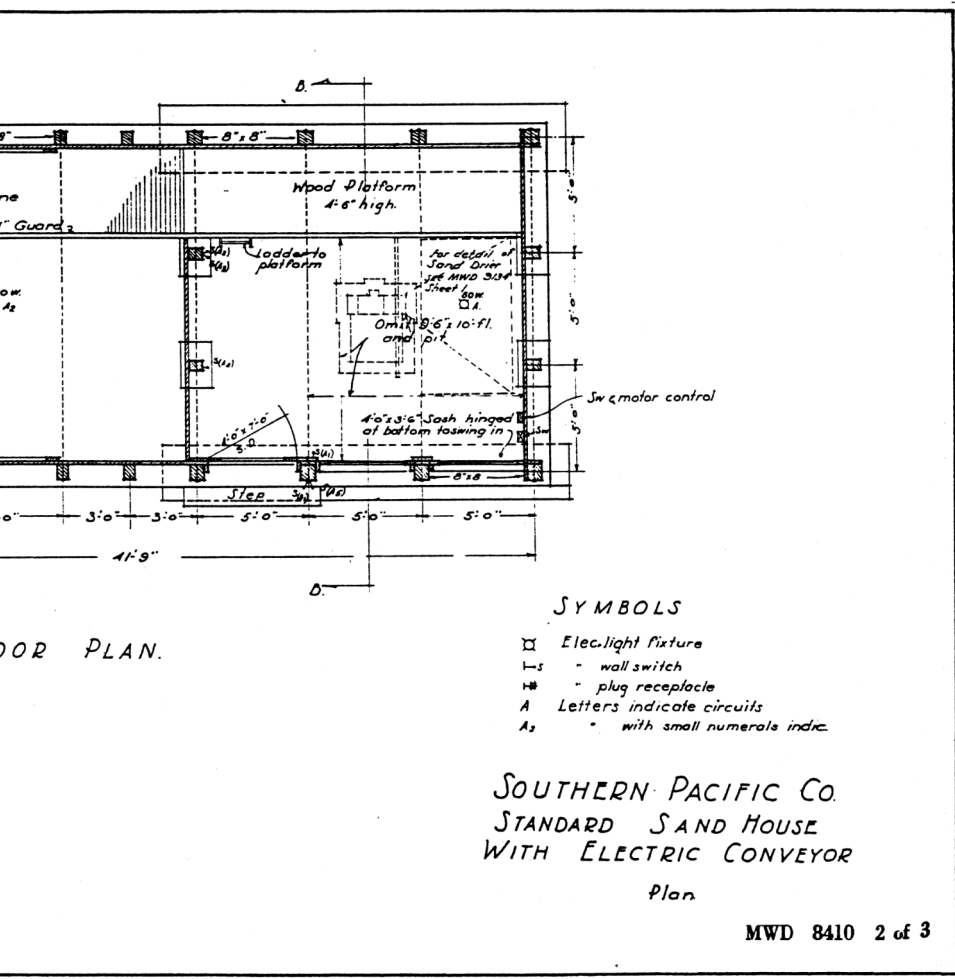
2. This is the floor and interior plan for the “standard” SP sand house design, sheet 2 of MWD drawing 8410.



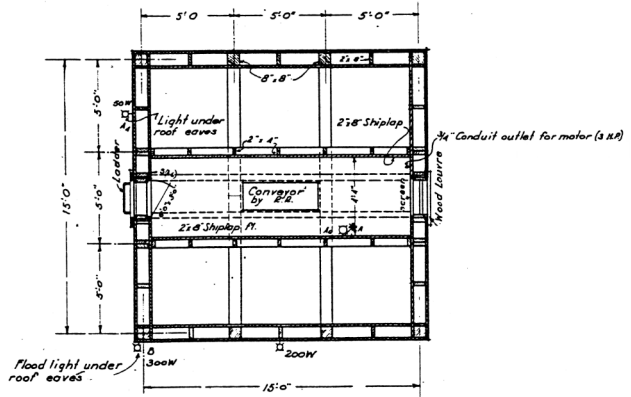
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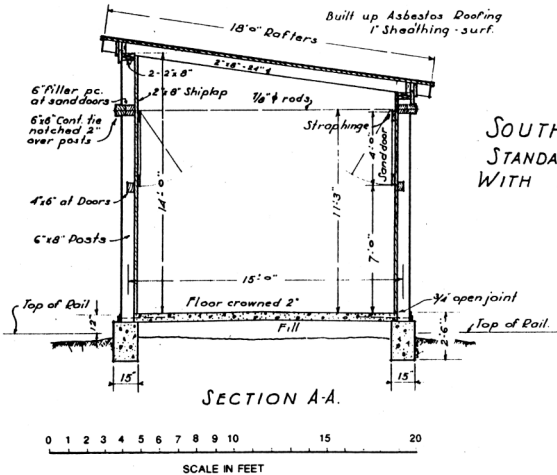
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with the usual arrangement at smaller engine terminals and eliminate the tower. One could also consider whether to build the shed roof shown in the drawings and used in some prototype examples [8, 9] or to build a peaked roof, as in a number of the prototype examples [4, 6, 7]. I decided to build the shed roof.



PLAN C-C.



SOUTHERN PACIFIC CO.
STANDARD SAND HOUSE
WITH ELECTRIC CONVEYOR.

Sections

Note:
See detail
of spout.
Sh #4

Top of Rail



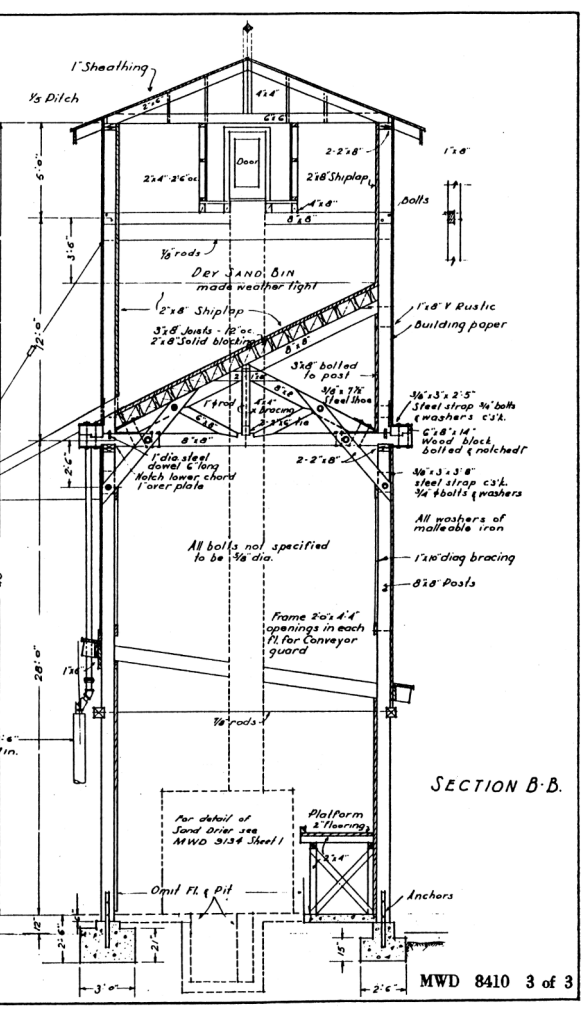
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Another possibly interesting choice is whether to model the interior. Since there are only two windows, it would be all but impossible to see any of the interior in a layout situation (unless the roof is modeled as under repair, and thus with exposed, see-through rafters). The interior ramp shown [2] presumably was for wheelbarrows to move sand up to the top of the sand dryer, where it could be dumped in. I chose not to model the interior.

The sand dryer would have been coal-fired as late as the 1950s, and coal likely would have been shoveled inside via the sand doors. A number of these sand houses also had “fire cabinets” outside, an obvious precaution with a coal fire in the dryer. I described modeling such cabinets in my article in the August 2017 issue of *Model Railroad Hobbyist*.



3. This third sheet of MWD drawing 8410 shows cross-sections as identified in [2], very helpful in understanding parts of the structure. Originals of these drawings are in the Shasta Division Archives at Dunsmuir.



4. The timber construction of the SP sand house at Dunsmuir, California, resembles the drawings, but there is no tower. A light frame supports the sand delivery pipe, which simply emerges from the roof of the house. Note the fire cabinet at right. *SP photo, Shasta Division Archives, courtesy Bob Church*



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5. The sand house at Wendel, California, just visible to the right in this 1951 photo of the engine terminal, also had no tower. That rickety-looking piping over the track is for sand delivery. *Richard Steinheimer photo, DeGolyer Library collection*



6. This interesting sand house (right) was at Port Costa, California, in August of 1956, very late in the steam era. Again, it has no tower, but note the high-rising sand delivery pipe. *Dallas Gilbertson photo*



7. Though in derelict condition in this 1979 photo, one can clearly see the configuration of the San Luis Obispo, California sand house, and its cylindrical delivery bin atop a frame at right. By this time, the old sand house was only used to store bagged locomotive sand, but the air-powered delivery system was still used. *Author photo*



8. The sand house at Eugene, Oregon, with a tower bigger than the “standard” SP design but similar in overall appearance. Note fire cabinet at right edge of building. The locomotive is a Baldwin DRS-6-6-15. *Jim Paschelke photo, courtesy Tom Dill*





9. Another (somewhat blurry) view of the Eugene sand house, from March 1955. This base structure, though smaller than the “standard” plan [1–3], feeds two towers for sand delivery to locomotives. *Bill Decker collection*



10. Some sand houses were truly large, such as this one at West Oakland. It was a major landmark in that yard. But notice the small diameter and unimposing supports for the sand delivery pipe. *Barry Anderson photo*

DESIGNING THE MODEL

The first step in a project like this is to decide how large a structure to build.

The site on my layout is in an engine terminal that serves a modest-length branch line, so the sand house would not need to be too large. It should be aligned with the sand-unloading track behind the building. I mention that point because the



11. The light-colored paper rectangle in this photo is the footprint for the sand house. The edge of the turntable pit is to the extreme left of the photo, and between the two engine tracks at right are the fuel and water columns. In the background are an Associated Oil Company dealer, at upper right, and the SP fuel delivery track (upper left). Sand will be unloaded from the upper track, behind the sand house.



tracks at this point of the layout are not parallel [11], and of course the track to which the building should be parallel is the unloading track.

The drawings show sand delivery doors on both sides of the sand house, but for my layout location, the delivery track is at the back of the structure, so I will model only the sand doors on that side of the structure.

Turning now to building features and dimensions, the plans show that the standard building is erected on a concrete foundation visible on all sides of the building. This simplifies modeling, as the structure can be modeled as built on a slab. I chose to represent this with a rectangle of 1/16" styrene (TAP Plastics).

The plans show a building that is about 15 x 42 feet. The "footprint" paper shown in the photo [11] is actually 12 x 40 scale feet, certainly close enough to convey the standard proportions.

Styrene construction of this structure should not be complex, but I needed to settle some design problems before beginning that work. For example, the drawing specifies the alternating boards from each wall as extended to the outer edge of the corner posts. This arrangement could have been represented by alternate-notching the ends of all walls and fitting them together, with corner posts outside, and that would make quite a strong model, though a rather fussy job.

The main problem with such notching would be that the 0.040-inch styrene is much thicker than the 2-inch shiplap called for in the drawing. It would be easier to just use short lengths of scale 2 x 8-inch styrene strip on the corner posts to simulate these board ends.

But I could find no examples of this kind of alternating board arrangement at corners in examining the prototype SP sand houses. Instead, it appeared that the long-wall boards were extended outside the end wall, and then the 8 x 8 corner posts

added outside, with a 6 x 8 post inside [12]. The Eugene sand house [8] was built this way too.

The plans show the roof as a shed roof, and I chose to do the same. The drawings appear to show open rafter ends, though most SP structures of all types had fascia boards closing rafter ends. I decided to do that also.

CONSTRUCTION

I began by cutting out the scale 12 x 40-foot styrene base from 1/16-inch sheet, then cut the walls of the main structure from

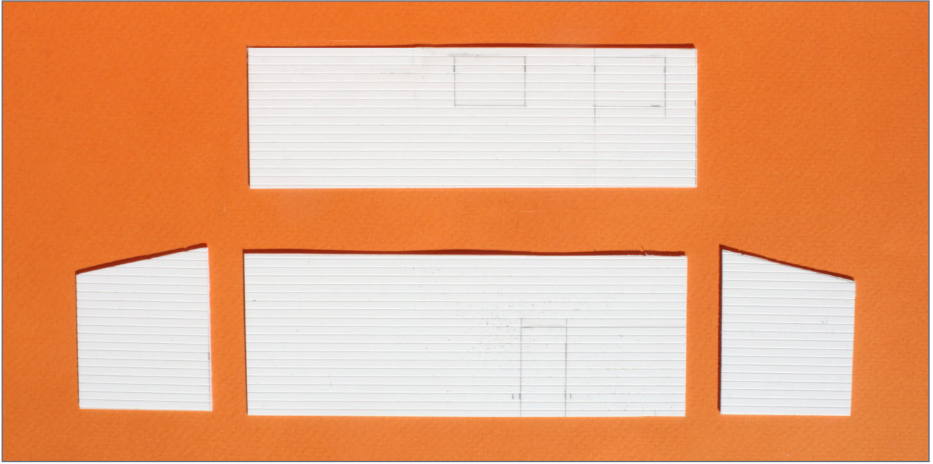


Evergreen 8-inch Shiplap styrene sheet (no. 4083). Within those, I marked the 4 x 6-foot sand doors only on the rear wall, along with the personnel door and windows on the front wall [13].

I chose to use existing HO scale parts for the eight-light windows (Tichy 8042) and personnel door (Tichy 8132), rather than duplicate the SP

12. (Super zoomed) upper corner of the Dunsmuir sand house shown in [4]. The long-wall boards extend beyond the end wall and are sandwiched by two posts. Notice also the iron rod crosstie.





13. Here are the sheet styrene pieces cut out for the sand house walls. You can see on the two long walls where I have started to lay out the locations of sand doors (rear wall is at top) and the personnel door (front wall, bottom of image). My particular model has long walls that are 38 scale feet long, 14 feet high in front, 12.5 feet high in back, and side walls that are 11.5 feet long.

“Standard drawing” components. I used the parts’ dimensions-- 52 x 33” horizontal for the windows and 33” wide for the door—to lay out the openings for the cut, not the dimensions shown in the SP drawing. The door had a single-light window, but I planned to add mullions from one of the window castings so that it would become a four-light window.

I cut out both the sand doors, and the personnel door and window openings, by using a corner punch and hobby knife [14, 15]. I demonstrated this same technique in my packing shed article (*Model Railroad Hobbyist*, August 2019).

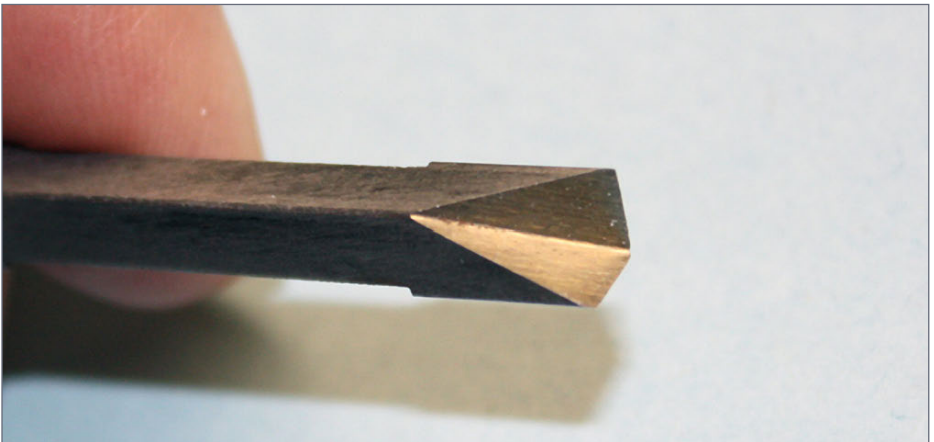
The trim color on SP “utility” buildings like this was usually black, so the black Tichy parts won’t need painting. I installed them after painting the main structure.

With the sand-door openings cleaned up, I glued the sand door material behind them. These doors were hinged on the inside, so no details show outside. I used a scale 6-inch siding (Evergreen #2060), oriented vertically.

Before turning to the exterior posts, I used a triangular file to notch between all the “board” ends of the styrene sheet on the long walls. These will be visible between the securing posts [12].

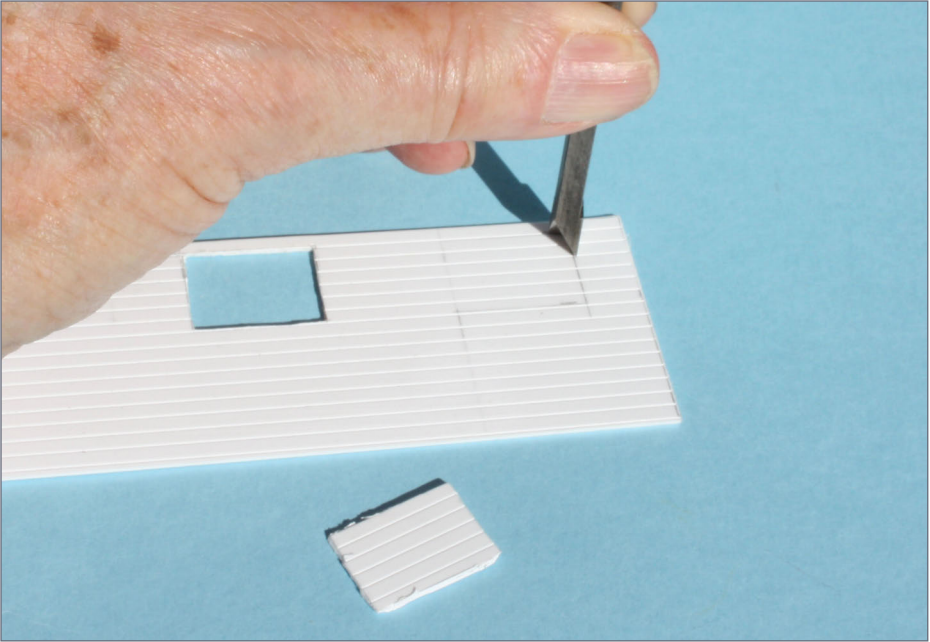
Next, I measured the spacing of the vertical exterior posts on all walls and started cutting the styrene strip. It’s convenient for a task like this to use a NWSL Chopper or equivalent tool.

With the posts cut, I began by applying the 6 x 8-inch intermediate posts (Evergreen #8608) [16]. Most of the larger posts shown in the drawing [2], 8 x 8-inch size, are the supports for the tower. Since I am not including the tower, I replaced those posts in the drawing with 6 x 8. But the corner posts remain as the 8 x 8 size (Evergreen #8808).



14. I used a corner chisel to set the corner cuts for my doors and windows in the sand house with just a hammer tap or two. I connected the corner cuts with a hobby knife.





15. Setting the corners for the second sand door opening, using the corner punch shown in [14]. This technique is especially valuable when a narrow piece of the material needs to be left intact, as shown here.

You may note on the plan view [2] that the spacing of posts on the two ends is not identical. One end (under the tower in the drawings) is the location of the sand dryer and therefore not the end where heavy sand loads have to be contained. It has a wider post spacing.

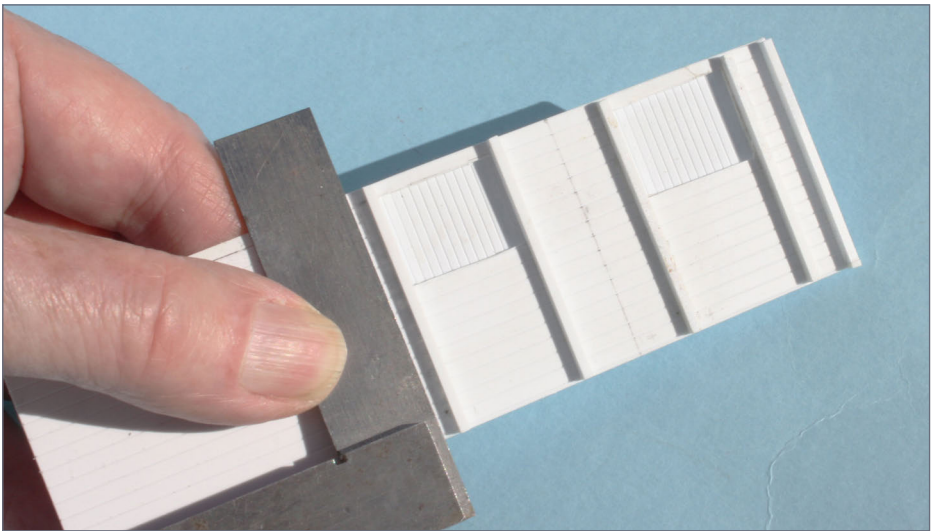
I completed all the walls with the added posts and made sure the door and windows fit snugly, but did not glue them in place. All four walls are shown here at this point [17].

The horizontal tie timbers at the tops of the walls are not installed at this point [17]. I decided that those timbers would

be easier to install when the four walls were assembled into a structure, as the timbers need to match at corners [1].

Accordingly, I assembled the walls by gluing 1/8 x 1/4-inch styrene strip (Evergreen #389) inside the wall corners to secure them, being careful to get all corners perpendicular with frequent use of a small square. I have found it effective to assemble the walls in pairs, then join everything together [18].

With the basic structure assembled, I could add the 6 x 6-inch horizontal ties. These were a scale 11'-3" above the floor, according to the drawings. This is also a good time to add the 4 x 6-inch sills under the sand doors. The assembled structure at this point is shown in [19].

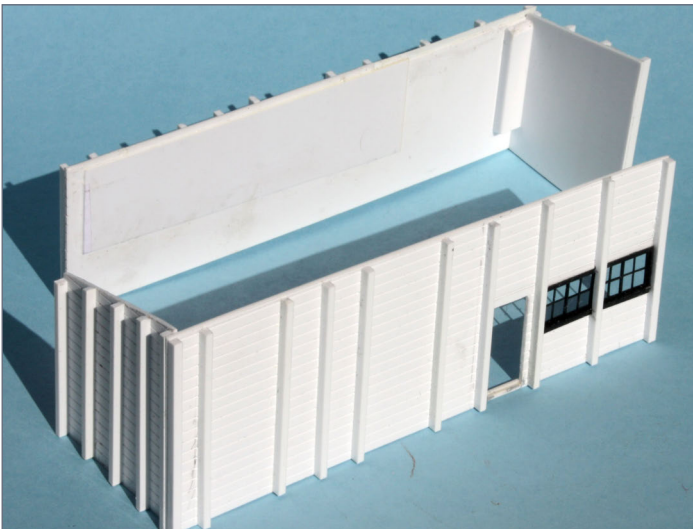


16. The 6x8 posts are being applied to the back wall of the sand house, after adding the sand doors inside their openings. I used a small machinist's square to make sure the posts are aligned correctly. There is a post between the two sand doors still to be installed





17. The four building walls, with posts installed. I laid the windows in place to show how they look but did not glue them at this point.



18. Here walls have been assembled in pairs. Note the large styrene strip used to secure the inside of the corner at the rear. You may be able to see a slight concave warp

to the long walls; stiffeners were added inside.



19. The assembled structure, including horizontal tie timbers. It is resting on the styrene base mentioned in the text.



20. Rear corner of sand house, showing appearance of boards sandwiched between posts at corner (compare [12], and NBW in place.



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I then added nut-bolt-washer assemblies (NBW) details to the building (Campbell Scale Models # 925). The NBW on this structure are of two kinds, either the ends of 1-inch bolts set into the foundation at the bottom of the posts or ends of full-length rods connecting the sides of the building. As the drawings show, these 7/8-inch rods cross the entire building (more than 11 feet above the floor).

The Campbell NBW details are rather large for HO scale, but they represent the oversize washers often used to provide more bearing surface for the fasteners in structures like this. And I wanted these NBWs to be noticeable!

Not every post carries a through rod, according to the drawings, and thus would not have any NBW. Likewise, not every post is bolted at the bottom. An example of how these looked is shown in [20].

Next came the roof. First, I modeled the roof with plain styrene sheet (see Materials). The plans show the roof as extending over the walls by about 14 scale inches on all sides.

The drawing appears to show exposed rafter ends, but I chose to apply a fascia strip around the entire roof using styrene strip (Evergreen #8210). The logical size is that of the rafters in the drawings, 2 x 10 inches. I did not have to determine the corner angles for the side fascia again, as these angles exist in the form of the top angles on the side wall. Then I glued the roof to the wall assembly [21].

The plans call for “built up asbestos roofing,” or roll roofing. My simple representation of this is a textured roof surface, using 2.5-scale-foot-wide drafting tape strips, suitably overlapped. I also added a few extra pieces of tape to suggest patches.

The drawings also show an exterior ladder to the roof, presumably for access. The only sand house photo I could find that showed such an installed ladder was at Eugene during wartime [22]. This is the only SP prototype sand house of which



21. A view of the sand house rear, with roof attached. The simulated roofing material remains to be added.



22. This photograph of the Eugene turntable during World War II (note headlight and marker light shields on the cab-forward) shows the sand house in the left background, with

its two sand bins on towers. *Southern Pacific photo, negative X1593-4, courtesy John R. Signor*



I'm aware that is even close to the "standard" design. Looking more closely at this image, the ladder is clearly outside the roof edge [23].

I simply used some freight-car ladder material, with two ladders spliced together to get enough height. I attached it to standoffs I made from 0.029" brass wire so the ladder would clear the roof edge. The installed ladder and roof covering are shown here [24].

The last major part of the sand house is the sand delivery pipe. One can hardly find two SP sand houses with the same arrangement of these pipes, so I decided to choose a simple one. For that, it would be hard to beat the features of the sand house at Dunsmuir. I used two sizes of rod to fabricate a delivery pipe arrangement resembling what you see in [25].

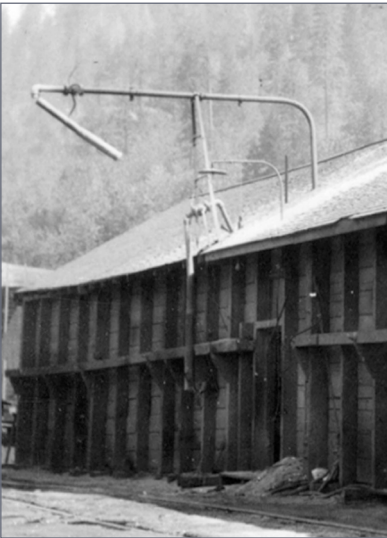
I used 0.029" brass wire for the pair of braces making up the triangular support for the sand pipe. I made the sand pipe itself



23. The detail of [22] shows the ladder and roof-top walkway at the right edge of the sand house. Note also the sand gondolas behind the sand house. That's Mountain type 4335 in the foreground. *Detail of Southern Pacific photo, negative X1593-4, courtesy John R. Signor*



24. The sand house with roof covering (drafting tape) and ladder installed. The brass wire standoffs are long enough for the ladder to clear the roof overhang.



25. The sand delivery arrangement at Dunsmuir. This view is a detail of [4]. *SP photo, Shasta Division Archives, courtesy Bob Church*



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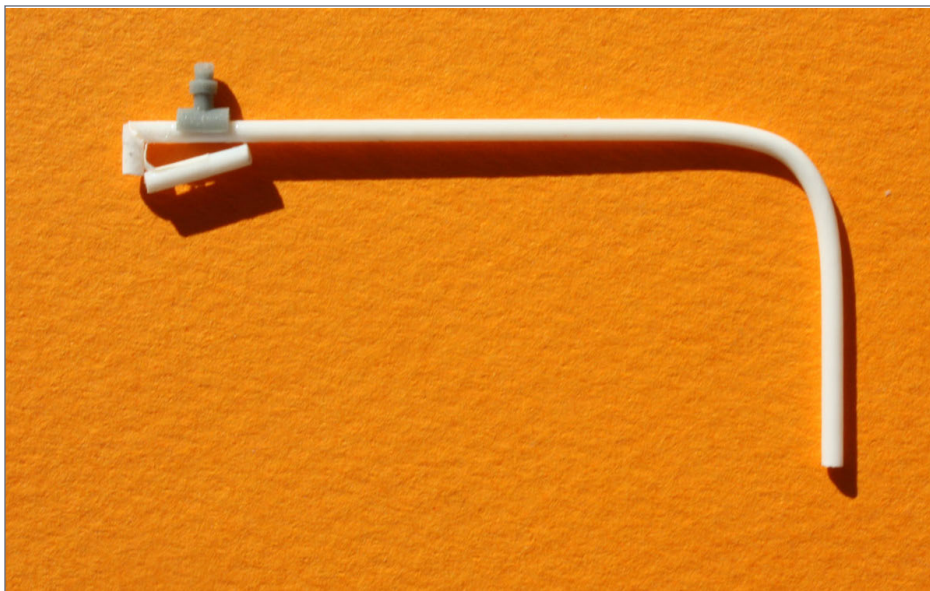
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from 1/16-inch styrene rod (Evergreen #222). I curved it gently by hand to resemble the shape of the Dunsmuir delivery pipe.

The final delivery part at the end of the fixed pipe is a separate hinged pipe that a hostler pulled down to add sand to a locomotive. I modeled mine the same way, by using a short length of the same styrene rod, connected with a paper “hinge” strip.

Lastly, there appears to be a valve near the outer end of the horizontal pipe. Presumably this would have been fitted with a control rod or rope that a hostler would use to open the delivery pipe. I used a Plastruct gate valve casting (GV-1, #4001), simplified to resemble this feature [26]. I held these delivery parts for later installation, after painting the building. I could only determine the exact length of my sand delivery pipe later on when I had an exact location for the sand house.



26. One of several trial versions of the sand delivery pipe, with added valve and with the end section hinged.

Several sand house photos show a fire safety cabinet [4, 8, 9]. This is natural because of the coal-fired dryer inside the sand house and attendant fire risk. I built the fire cabinet using the same techniques I outlined in my article “Engine Servicing Details,” in the August 2017 *MRH*.

I adjusted the dimensions of this cabinet so I could mount it between posts, as was the Eugene sand house cabinet [8]. As before, I made the cabinet parts in pairs [27]. Since the Eugene cabinet is attached to the wall and doesn't have legs, I built this one to that pattern.

The last detail to be added to the building is an outdoor light over the door. Because it was built and installed after painting the structure, this light is described under Finishing.

FINISHING

Most of these structures followed the Southern Pacific standard painting for structures not used by, or particularly visible to, the general public, which was mineral or boxcar red, with black trim



27. These are the two halves of the fire cabinet, sized to fit on the end wall of the sand house, as seen in [8]. Parts are styrene sheet and strip.



on such parts as doors and windows. Again, it should be pointed out that many exceptions to this “standard” scheme exist, and clearly local maintenance forces tended to paint or repaint structures as was convenient. Sheet 1 of the drawings says, “outside battleship gray,” but I am not aware of any SP sand houses so-painted.

I chose to use Tamiya “Oxide Red” fine primer (#87160) for the base coat on this structure. It is a rich color comparable to mineral or boxcar red in railroad use, and thus suitable for an SP sand house [28]. Once that was dry, I inserted the windows into their openings in the front wall, pending glazing.

I painted the fire cabinet red. I used a pencil to indicate that the front of the cabinet had two doors. I attached it with canopy glue.

With the main building painted, I painted the roof with Tamiya “German Grey” (#XF-63). Colors in the surviving color photos I could find of SP sand houses seemed to have this kind of color,



28. The sand house structure, painted mineral red and with gray roof surface, and windows installed. Window glazing and door not yet installed.

but likely it isn't critical, as roofing would be re-done from time to time. I added some black areas to suggest tar patches.

Most photos of SP sand houses [6–8, 10] look quite weathered, indicating that they were not painted often. I began the weathering process with acrylic washes of a dirty mix of Neutral Gray and Burnt Umber acrylic tube paint, followed by a coat of flat finish to protect the acrylic [29].

Then I picked out individual boards with a range of reddish-brown colors of Prismacolor artist's pencil, reflecting the way paint retention differs from board to board. I also added some PanPastel streaking with different gray colors. I used the same PanPastel to streak the roof and break up its uniform color.



29. The structure given the first weathering step, with door, windows and fire cabinet added. I left the roof as shown here but gave the walls a second weathering step with a gray wash to “fade” the paint.



Lastly, I made light streaks below the sand doors on the back of the structure, reflecting sand spillage as workers shoveled sand from the gondolas into the sand house. When I completed all of the weathering, I applied a final protective coat of flat finish.

After painting and weathering, I glazed the windows with some clear plastic sheet that was on my workbench. I only installed the door after glazing. Then I added the mullions in the door's window using the center of a Tichy 8042 window, attached with canopy glue.

I simply painted the styrene foundation slab concrete and gave it some weathering. I also added a step in front of the door.

I used some old Campbell brass lamp shades in my parts box for the outside light. I painted the inside of the fixture white and the outside gloss green. It was then attached to an arm of the 0.029-inch brass wire, painted aluminum to look like conduit.

With the building work complete, I prepared to finalize and install the sand delivery parts. I had made a couple of versions of the sand delivery system to be sure everything would work correctly. My first step was to carefully place the sand house in its intended layout location. I positioned a model locomotive alongside and determined the distance from sand house edge to track center line [30].

Then I drilled holes in the roof to accept the wire bracing for the pipe and for the pipe entrance into the roof. I used canopy glue to secure the pipe into the roof and the angled braces [31]. Finally, I painted all these parts light gray. Although this arrangement does not exactly duplicate the Dunsmuir house piping [25], it seems adequate in light of the considerable differences among the various SP sand houses.

LAYOUT INSTALLATION

I don't ordinarily glue structures to the layout, but it's important to install them in a way that looks right. In this case, I did glue the foundation slab in place, after carefully checking that the



30. This shows determining the length of the sand delivery pipe. The model locomotive (a Key model of an SP Consolidation) is positioned alongside. I taped an experimental version of the sand pipe to the roof to determine distance beyond the roof.



31. The sand house with completed door, outside light, and sand pipe parts added (pipe not yet painted). The overhang of the sand delivery pipe beyond the roof edge was determined by layout measurements, as shown in [30].

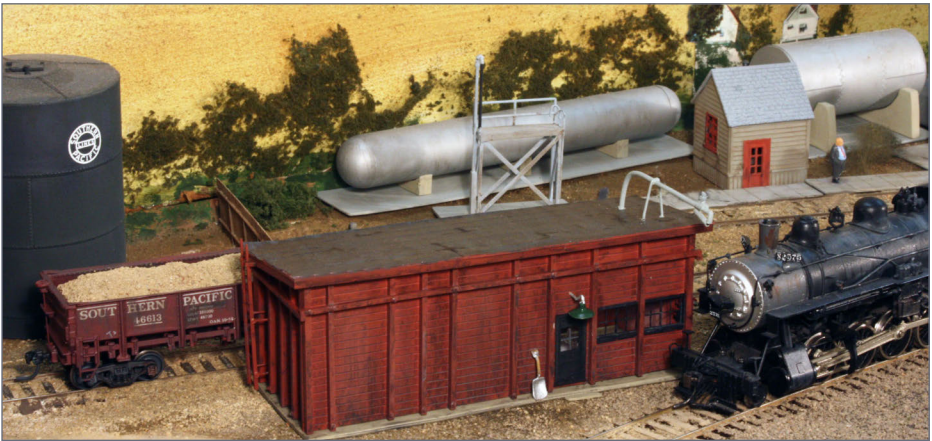


location was right and with proper clearances for the tracks on both sides of the sand house. The same would apply to vertical clearance under the sand pipe, though I had already checked this to make sure it was adequate. This is where the hinged end of the delivery pipe is helpful, in that it can be aligned as needed to clear locomotives.

The sand house was finally placed on its foundation, with the sand delivery track behind it, and the inbound engine track in front of it [32]. This presumes that hostlers working locomotives returning from assignment would replenish fuel, water, and sand box on the way to the roundhouse. A locomotive being made ready for work on the outbound engine track would likely only need topping-off water.

CLOSING REMARKS

This is a somewhat complex structure, as small buildings go, but design and material selection went easily, with the considerable



32. The completed sand house is shown in place at the Shumala engine terminal. The inbound locomotive will stop under the spout to take on sand. A GS gondola of sand, SP 46613, is spotted behind the sand house. The scoop shovel is a Campbell part that was included on the NBW sprue.

aid of the prototype drawings. Hopefully this illustrates the value of prototype information for structures. Construction was not difficult, and each individual step was straightforward. Much of the convenience stems from the ease of using styrene.

I am pleased to have a sand house in my Shumala engine terminal at last. I don't know how the locomotives serviced here in the past have been able to do their job without a local source of sand, but now that problem has been corrected.

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Tony Thompson, "Engine Servicing Details," *Model Railroad Hobbyist*, August 2017.

Tony Thompson, "Building a See-through Industry," *Model Railroad Hobbyist*, August 2019.

TOOLS

"Chopper," NorthWest Short Line, item no. 49-04, or equivalent
Corner chisel, Micro-Mark no. 82394, or equivalent

BILL OF MATERIALS

- Brass wire, 0.029-inch diameter
- Campbell Scale Models nut-bolt-washers, part 925
- Evergreen Scale Models shiplap siding, 8-inch spacing (#4083)
- Evergreen V-groove siding, 6-inch spacing (#2060)
- Evergreen 2 x 10-inch rafters and fascia (#8210)
- Evergreen 6 x 6-inch horizontal ties, exterior (#8606)
- Evergreen 6 x 8-inch posts, intermediate (#8608)



- Evergreen 8 x 8-inch posts, corners (#8808)
- Evergreen 1/8 x 1/4-inch strip (#389)
- Evergreen 0.020-inch sheet, plain, roof (#9020)
- Evergreen 1/16-inch rod, sand pipe (#222)
- Grandt Line windows, scale 52 x 33-inch horizontal, part 5081 (Tichy 8042)
- Grandt Line door, scale 33-inch wide, part 5163 (Tichy 8132)
- PanPastel Neutral Grey and Payne's Grey
- Plastruct GV-1, #4001, gate valve
- Tamiya "German Gray," #XF-63
- Tamiya "Oxide Red" Fine Surface Primer L, #87160
- TAP Plastics styrene sheet, 1/16-inch thick ☒



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SCALE ...

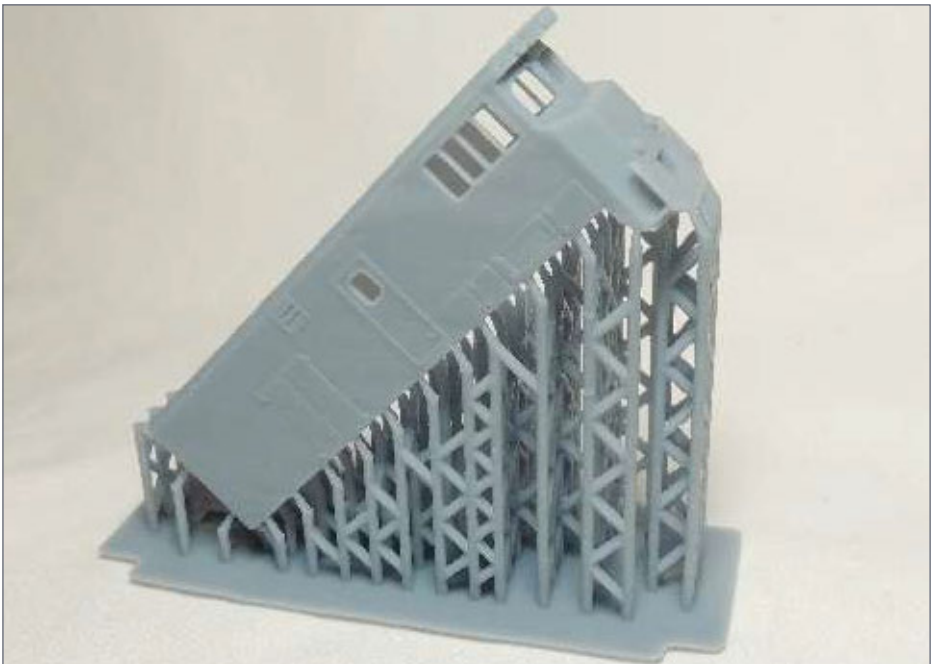
UNION PACIFIC/RELCO MOW TRAINS | 3

MRH Running Extra | January 2021



LAST YEAR RELCO (NOW A WABTEC SUBSIDIARY) BUILT A PAIR of customized maintenance-of-way (MOW) trains for Union Pacific in Albia, Iowa. The new trains are eye-catching at a whole new level. I knew I wanted to build one, but where to even start on such a customized project?

The train I am building consists of the rebuilt SD40-2 UP 958200, excavator car 958202 (I'll call it the crawler car), spe-



1. This cab car is fresh from the 3D printer. Complex models such as this require quite a few supports for the printing process. I had to cut these away before assembly.



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cialized well cars, and the 958201, the control cab car with vehicle platform. There aren't many prototype photos of these awesome machines out there yet, but they are starting to appear on sites like www.rrpicturearchives.net.

I reached out to 3D-graphics designer Brett Isaacs, who owns BaldyloxDesigns on Etsy (etsy.com/shop/BaldyloxDesigns). Brett quickly designed a printable 3D model [1]. With my feedback, Brett modified the design to create a kit that should make it even easier for modelers who wish to purchase it from his Etsy store.

Cab control car

I printed the control cab car and the locomotive myself. After cleaning off the support sprues, I could see what I had to work with. The cab control car has four separately printed components, including cab, deck, vehicle platform, and generator details [2].



2. The cab car's major components include (clockwise from upper left) the cab, The platform, generator and fuel tank, and the vehicle platform.

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The first step was to sand the remnants of the support sprues smooth so I could test-fit the cabin to the deck. These are resin prints, so they can be a little light. The design for the car cleverly incorporates a channel underneath the deck that will fit 1/8"-square brass stock for weighting. I secured it with CA glue [3].

There is an open area on the center of the car between the cab and the steps that holds a few separately applied accessories. Two boxes go in this space. The taller one is a generator that goes on the conductor's side. The shorter one is a fuel tank that goes on the engineer's side [4]. I recommend painting them before gluing. It's much easier that way.

I decided to drill out the headlight housings on the front of the cab for fiber optics. I recommended that Brett incorporate this into his 3D design, so if you should order the kit from BaldyloxDesigns, the light holes will be there.

I shot a coat of primer on the cab to highlight imperfections that I would need to sand smooth. I recommend investing in some good quality sanding sticks for a project like this.

With the model primed and sanded, I added some details to the model, including some hand-bent 0.012" brass wire grab



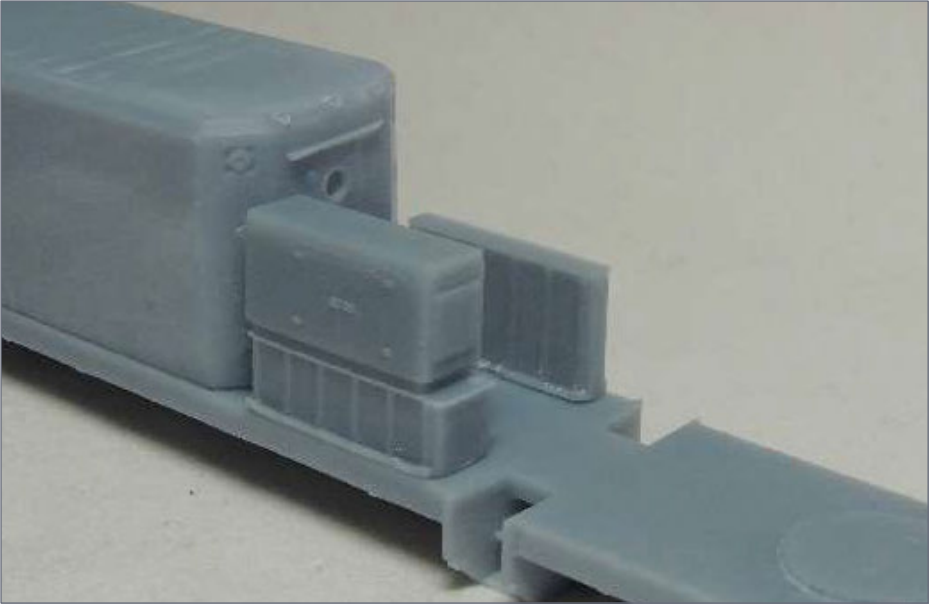
3. The underside of the deck has a channel in the frame to accommodate 1/8"-square brass stock to weight the car.



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4. A generator and a fuel tank go right behind the cab. Pay attention to the orientation when assembling.

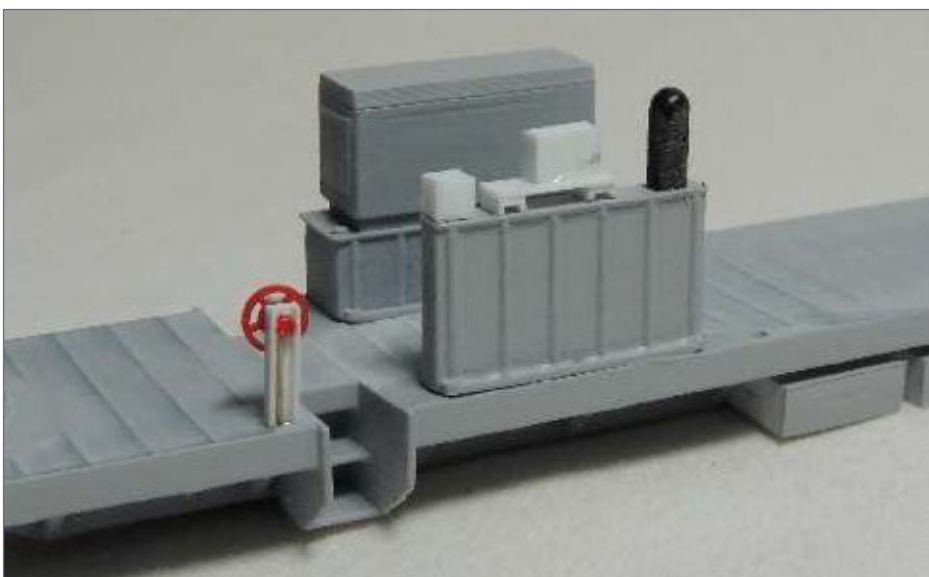
irons, a BLMA (now Atlas) #404 cut lever, and a Micro-Trains (MT) #1300 True Scale coupler box [5]. With the cab detailed, I shot another coat of primer and set it aside.

With the cab detailed, I turned to the chassis. While test-fitting some MT 100-ton trucks, I noticed the stirrups on the platform end were a little large for my taste, so I cut them off and replaced them with a BLMA #402 Freight Car Stirrup. For additional texture I also added some styrene battery boxes under the engineer's side [6]. Full disclosure: These boxes are on UP 958301, not the UP 958201 that I'm attempting to model, but I liked what they add to the car.

With the major parts in place, I primed the frame and sanded the deck to eliminate printing striations. I added a brake wheel stand and an MT 1301 coupler box. Its extra length clears the



5. I primed and sanded the model before adding details. I also drilled the headlights for fiber optics.



6. From the engineer's side: Detailing on the platform, including brake wheel, generator, and fuel tank. Note added detail on the fuel tank, and the battery boxes underneath the frame.



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platform that will be installed later. I also added some extra details to the top of the fuel tank, which Brett Isaacs has now made standard on newer prints [6].

I painted the deck Model Master (MM) Insignia Yellow, the stand for the compressor PollyScale Steam Engine Black, the compressor Tamiya Primer White, and the fuel tank MM Euro Grey. I used PollyScale Scarlet Red to paint the ladders and stirrups, and added the MT coupler to the box, I applied the same treatment to the cab.

The final component in the cab car kit was the vehicle platform. Next, I could turn my attention to the vehicle platform, which was a single molded part. I hit this with the same yellow, black, and red as the deck. I then glued it into place [7].

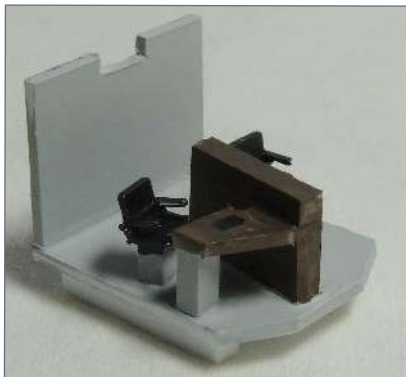
I had the cab printed separately from the car chassis, which allowed for some fun opportunities. There was plenty of room inside for a cab interior, a decoder, a speaker, and LEDs to light the cab's headlights via fiber optic. I scratchbuilt an interior from styrene, and painted it [8].



7. The vehicle platform is installed and painted.

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I secured clear styrene cab windows with canopy glue and ran 0.030" fiber optic for the headlights (Plastruct #FOP-30) before installing the cab interior [9]. There is plenty of space left for a DCC decoder, a speaker and some lights if I decide to install them in the future.



8. scratchbuilt and painted cab interior.



9. Windows and fiber optics are installed in the control cab.
Ready for the interior.



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10. The control car cab is finished and decaled.

With the cab inserted, I detailed the exterior with TrainWorx #201 wipers and mirrors. I glued the cab to the platform and applied decals from BaldyloxDesigns. With trucks and metal wheelsets from FVM, the cab control car was complete [10].

Well cars

The well cars were too long for my printer, so Jeff Gowers ran some for me on his monster printer [11]. I couldn't remove the printing supports without damaging the cross bracing on the underside of the car, so I removed the cross bracing entirely [12].

As it turned out, this created an opportunity to add weight. I inserted a 0.064"x0.5" brass strip and secured it with CA. I added some 0.03" square styrene to recreate some of the texture lost with the cross bracing, and to help hold the brass in place. This step was probably unnecessary, as the car sits so low on the track, but I know it's there [13].

There was a small print error in one of the well car's bulkheads, so I patched it with putty and sanded it smooth [14]. I discovered that some of the printed details, such as end hooks and stirrups, did not stand up to handling, so I replaced the end hooks with brass wire, and the stirrups with BLMA etched metal parts #402 stirrups[15]. With that, I shot a coat of primer and sanded.



11. This well car is fresh off the printer. I found it very difficult to cut all the braces without damaging the cross bracing detail on the car's underside.

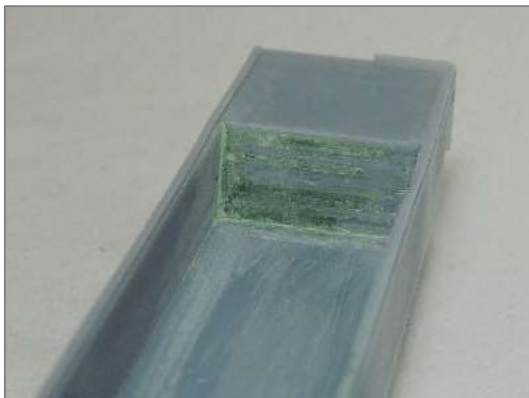


12. Cutting away the printer supports all but destroyed the cross bracing under the car.



13. Though the cross braces did not fare well in the printing process, removing them presented me with the opportunity to add weight.





14. Printer error corrected with putty and sanding.



15. Brass end loops and BLMA stirrups under a coat of primer.



Before I continued, I wanted to test the car's tracking and handling. I put on the trucks and noticed that the wheels were hitting the coupler boxes on some curves. I used a Dremel bit to grind away some of the coupler box material so the trucks would have more pace on turns.

Once I had finished sanding and tuning, I was ready to paint the car with the same yellow and red as the cab control car. I added decals and the trucks to complete the assembly[16].

The empty cars looked a little plain, so I decided to make loads for them. I made a styrene platform just large enough to fit loosely in a car. Then I glued individual wood ties on top of it [17].

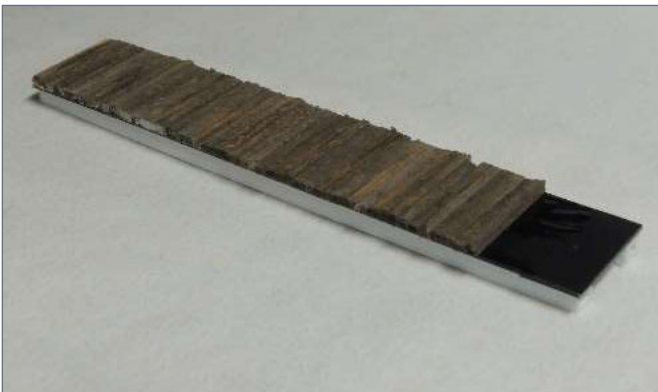
Using the same technique, I made a partial load so it would look like work was in progress on the train. The train has three of these cars, and I wanted the loads to be interchangeable. With the loads, the cars were complete, and the project was past the halfway mark [18].

The crawler car

The crawler car came with enough accessory options to drive anyone mad. The car is fitted with two excavators. Not only do you have your pick of excavator attachments, you can decide whether you want your excavators fixed or posed to fit a variety of scenes. The car itself was pretty straightforward.



16. The car is assembled. Load to go.



17. I glued ties on a styrene base to complete the look of my train's well cars.



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With its unique load, the car is long. It was too long for my printer to handle, so I had Jeff print this beast for me too [19]. The supports came off neatly, and I found that the underside of this car has an empty channel just like the cab control car. I filled it with 1/8" square brass [20].

Cured resin can be brittle, so as I had done on the other cars, I replaced the printed resin stirrups with BLMA #402 etched metal. This car's truck bolster pins came through the deck, so I



18. With their tie loads, the cars looked complete and ready for work.



19. The Crawler car fresh off the printer. I was able to break off the supports more neatly than with the well cars.

filled them with thin slivers of round styrene and filed them smooth [21].

I shot the car with a coat of primer and found it was smooth enough that I could go right onto the yellow paint and decals. I added couplers and trucks. With that, the car was finished [22].

The car was complete, but I needed to fit it with a pair of excavators on crawler carts. I sanded and assembled the crawler cart. I



20. 1/8" square brass stock served as the weight for this car. As in the cab car, it fit neatly into a channel in the car's underframe.



21. Body modifications to the car were light this time. They included BLMA stirrups and filling the truck bolster holes on the car floor.



proceeded to assemble each crawler cart with its guard plate. I hit it with a coat of primer and then gave it a coat of gloss black [23].

Turning to the excavators, I replaced the molded hydraulic rams with brass wire and styrene. I set up one excavator with a bucket, and the other with a grapple claw.



22. The car is complete, but still needs its accessories.



23. The assembled and painted crawler cart.



I then test-mounted the crawler carts to either end of the car and fit the excavators. I mocked-up the position of the excavator arms and booms but did not glue them [24].

Once I had established the fit and positioning of the excavator, I glued the booms in place. I painted them both PollyScale Signal Yellow and Steam Power Black. I added the Relco decals to the back, as in prototype. Finally, I glued the excavators in place, and the car was complete [25].



24. Test-fitting the excavator and crawler cart to the car. Note the styrene and wire hydraulic ram on the boom.



25. The car is complete with the excavators.



Locomotive

I printed the rebuilt SD40-2 on my own printer. It was the largest thing I've ever printed [26]. After freeing it from the supports, I test-fit it on a Kato Early SD40-2 chassis [27].



26. The rebuilt SD40-2 fresh off the printer.



27. The printed shell fit the Kato SD40-2 donor chassis nicely.

I had printed the body with .05mm layers, which was thick enough to produce some visible striations, but some rough sanding removed them. With that, it was time for detailing.

I was not satisfied with the printed fans, so I drilled them out for replacement with BLMA #82 and #83 fans [28].

The front of the locomotive needed some detailing. For the most part, the locomotive's front end looked similar to that of the cab control car. The one major difference was a brake wheel on the nose on the engineer's side. A Kato brake wheel fit the bill [29].



28. Etched metal replacement fans from BLMA were an improvement over the printed originals.



29. A brake wheel marked the major distinction between the locomotive and the cab car front ends. I still have to drill-out the headlights and add grab irons and cut levers.



I wanted a durable handrail at the back of the engine. so I used a spare one from an Atlas unit. The rear anticlimber was difficult to drill, so I ground it off and added some scrap styrene instead.

I sanded the new styrene pilot to match the locomotive and drilled it so the new Atlas handrails would fit. I added an MT True Scale Coupler Box, brass wire handrails, and TrainWorx #101 cut levers and mu hoses [30].

I applied the coupler box, cut levers, and MU hoses to the front of the locomotive also. Back to the roof, I added lift rings (BLMA #90), and a Leslie three-chime air horn (BLMA #222).

With the details on, I primed, sanded, and painted the unit with Model Masters Insignia Yellow. I painted the pilots, truck frames, and fuel tank with PollyScale Harbor Mist Gray. I hit the fans and the dynamic brake grills with a shot of PollyScale Engine Black. Finally, I hand painted the ladders scarlet red, and the light housings silver [31].

With everything painted, I installed the BLMA fan blades in the fan housings. I installed fiber optics in the headlight openings,



30. The Atlas handrail on the rear pilot of the locomotive. Note that I replaced some resin parts with styrene parts for better ease of installation.

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and glazed the windows using the same technique I did in the cab car. I completed the detailing with TrainWorx wipers and mirrors.

I installed the lighting source and used black electrical tape to seal its housing so that light would not leak through the shell. With everything installed, I put the shell on the engine, installed the couplers, and the unit was ready for service [32].



31. The unit is painted, decaled, and ready to go.



32. On the layout, the MOW special maneuvers into position to start work clearing the right of way of used ties during a track maintenance window.



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This was a fun and satisfying project. I appreciate Baldy-loxDesigns making such an amazing creation possible. 3D-printing has really opened a lot of options for us in the model railroad hobby. While I could have scratchbuilt this train, the time it would have taken would have been prohibitive. This is a great time to be a modeler! ☒



KARL ANDRASCHKO



Karl lives in Las Vegas, where he spends his spare time railfanning off-road via Jeep. You might bump into him on the UP Cima Sub or hanging out at Cajon Pass.

His father Steve Andraschko purchased Karl his first N Scale equipment when he was 8, starting him on a lifelong journey.

About a decade ago Karl met several N Scalers in MN who got him into locomotive detailing and layout operations. Today Karl models the Wisconsin Central White Pine Subdivision in N Scale. ■



Stock cars used for other things

MRH Running Extra | January 2021

RAY BREYER SAYS THAT THIS REALLY
DID HAPPEN ...



IN THE MODEL RAILROAD WORLD, most modelers tend to see a specific type of freight car and think it always carried a specific type of cargo. Reefers carried frozen meat or cool produce; open hoppers carried coal or rocks; gondolas carried scrap or lumber; stock cars carried live animals; tank cars carried oil and gas; and boxcars carried “stuff.”



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In the real world of the railroad transportation industry, however, that wasn't the case. Using gondolas and boxcars to carry coal or reefers to carry baled cotton seems to confuse most modelers. Stock cars might get the most attention, as they were "icky cars full of ka-ka." Who would want to load one of those with anything but meat on the hoof [2]?

Well, the railroads did, especially after the 1906 Pure Foods Act. One of the stipulations of that Federal law was that stock cars be cleaned out after EVERY animal load. Cleaning entailed stripping any bedding out of the car, sweeping, steam cleaning, and disinfecting the cars before they could be used again [3].



Loading a train of cars with Missouri watermelons.

1. A St. Louis, Iron Mountain & Southern stock car is loaded with watermelons, somewhere in Missouri during the WWI years. Stock cars were regularly used to supplement a railroad's boxcar and gondola fleets.



2. Hogs being unloaded from stock cars in Chicago. Pigs aren't the most housebroken barnyard critters, so who would want to use a stock car for anything else once they rode in them for a few miles?



3. A car repair gang checks the brakes on a Michigan Central stock car, which has been recently cleaned. One of the last items used when cleaning stock cars was a layer of quicklime on the car floor.



In short, stock cars might have been one of the cleanest types of rolling stock around (not that you'd want to eat off the floor of ANY freight car). And a clean car that's not full of "ka-ka" can be used to haul all kinds of stuff around.

Stock traffic was cyclical, meaning that stock cars were sitting idle much of the time. Idle cars don't make the shareholders any money, so the railroads frequently put stock cars to work hauling freight other than live animals.

By 1915, the Master Car Builder's Association (MCBA) had written stock cars into the car material loading rules, categorizing them as equivalent to boxcars [4]. Theoretically, any load suitable for a boxcar was also suitable for a stock car.

923

RULES GOVERNING LOADING MATERIAL IN BOX AND STOCK CARS.

NOTE.—The inspector or agent at the loading point must see that the rules for loading material in closed cars are strictly enforced. Where opportunity is provided, the lading should be inspected in transit.

124. Lading must be secured in closed cars so that it will not come in contact with side doors or roll or shift in transit, and must be so placed in car that there will not be more weight on one side of car than on the other.

Lading of a character requiring protection to prevent it falling or rolling out at doorway or coming in contact with door while in transit must have the prescribed stripping across the door opening.

Door strips must be nailed to the inside of door posts (never on the outside) and must not be less than one (1) inch thick by five (5) inches wide, straight-grained sound lumber or their equivalent; or slabwood not less than one and one-half (1½) inches thick at center; placed sufficiently close to floor of car and to each other to prevent the lading from falling or rolling out of car or coming in contact with the door.

When necessary to nail cleats or braces to lining of box cars having steel superstructure without exterior siding, the nails must not be driven entirely through the lining.

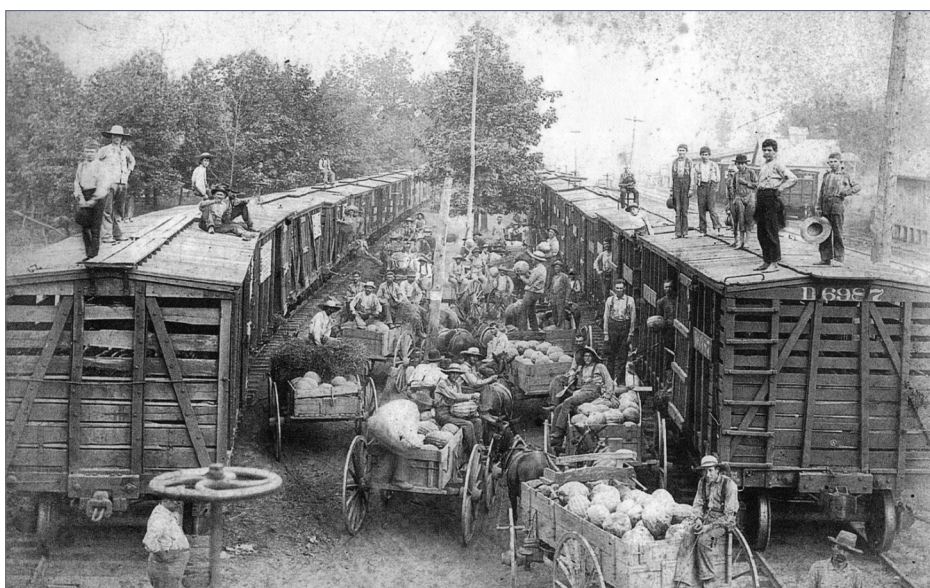
4. An excerpt from the MCBA's 1915 car loading rules, showing stock cars being grouped along with boxcars for most material loads. (books.google.com/books?id=calPAQAAIAAJ&newbks=1&newbks_redir=0&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false).

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In reality, stock cars' open sides made them undesirable for certain loads.

The MCBA car service rules mention several specific types of loads that were acceptable to be loaded into a stock car: bricks, barrels, barrel staves, fence posts, wooden billets, tan bark, lath, railroad ties, tires, rail car wheels, sewer pipe, drain tile, heavy machinery, and automobiles. Photo evidence adds coke, dimensional lumber, corn cobs, sacks of potatoes, and canned and crated produce to the list. Watermelons and cabbages seem to be the two most popular types of fresh produce hauled in stock cars.

Usually, stock cars supplemented a railroad's gondola fleet, hauling large, bulky items like ties or drain tiles – items which didn't require any protection from the elements. Stock cars



5. Long strings of stock cars parked in Blodgett MO, in 1892, waiting for farmers to load their crops of watermelons. The cars to the left are from an assortment of railroads, while all the cars on the right are from the Lake Shore & Michigan Southern, far from home.



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hailed coke quite often, since the large chunks of coke wouldn't fall through the slats in the car sides. They also sometimes hauled coal, but that usually required shippers to add plywood to the stock car sides.

Stock cars were a small, yet important, portion of the national freight car fleet. Stock cars made up about 3.7% of the freight car pool through WWII, so there were enough stock cars around to be noticeable. And there are enough photos of them hauling commodities besides livestock that it's more than just random chance. So add a few stock cars to your fleet, and use them in the same way as a plain boxcar or gondola!

Let's take a look at some of the more common loads carried in stock cars, based on photo evidence I've been able to dig up.

WATERMELONS

Ventilated boxcars are commonly called "watermelon cars" in the hobby, probably because by the time the hobby was maturing in the 1950s, the few remaining operating ventilated boxcars most visibly hauled that fruit. After WWI, railroads in the southeast owned the vast majority of ventilated cars. Produce was big business in the southwest, especially Missouri and Texas, and railroads there used stock cars to haul semi-perishable produce instead [5, 6, 7]. The practice was so common that by the early 1920s, the USDA published booklets with photos on how to properly load melons into stock cars [8, 9].

Railroad ties

Ties seem to be another common lading for stock cars. Railroad ties, whether treated or not, were always prone to theft, so having them shipped in an enclosed car with locking doors was an attractive deterrent [10, 11, 12].



6. Cotton Belt stock cars are loaded with watermelons in the 1906-1916 period. Interestingly, I've discovered several photos of St. Louis Southwestern (SSW) stock cars all being loaded with watermelons, not animals!



7. This Missouri-Kansas-Texas (Katy) stock car is also being loaded with watermelons, several years later than the SSW car above, based on the pickup truck.

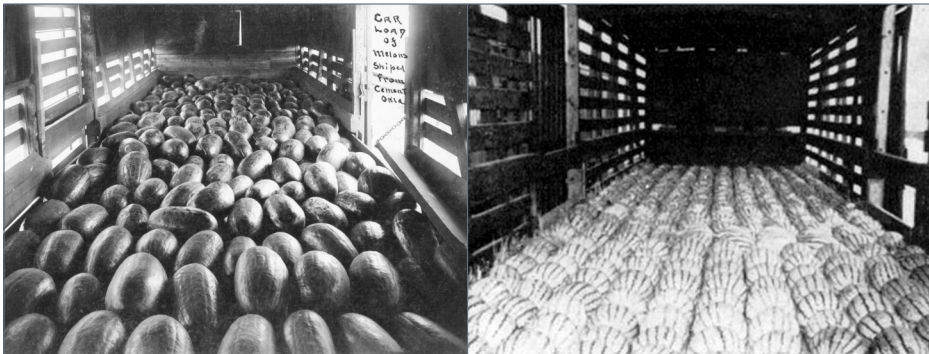


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8, 9. These two photos are pulled from different USDA informational pamphlets, showing the proper loading of watermelons in stock cars. A layer of straw was placed on the car floor as a shock absorber, then a single layer of melons was placed on the straw.



10. Workers load a Kansas City Southern stock car with ties. Two men are helping to place and balance the heavy tie onto a third, who gets to negotiate several piles and narrow ramps to carry the tie into the car.



11. Ties are heavy, so a simple conveyor powered by a kerosene-fueled “hit and miss” engine would have been a real time saver.



12. Company ties are manually unloaded from a Nashville, Chattanooga & St. Louis stock car during WWII.



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Finished lumber

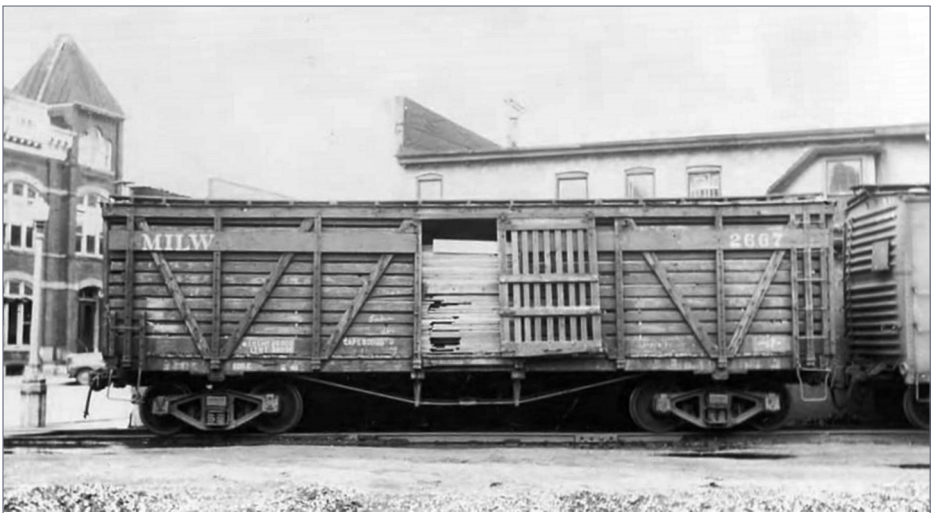
While rough-cut lumber was generally hauled on flat cars, finished lumber and millwork was hauled in sealed boxcars so it wouldn't be stolen. If a boxcar wasn't available, the next best option was a stock car [13, 14].

Bricks and pipes

If you see a stock car spotted at a brickyard, chances are it hauled straw into the yard, and will haul bricks out. Bricks and pipes (especially drain tiles) were often loaded into stock cars, again because of their lockable doors [15, 16, 17].

Coal and coke

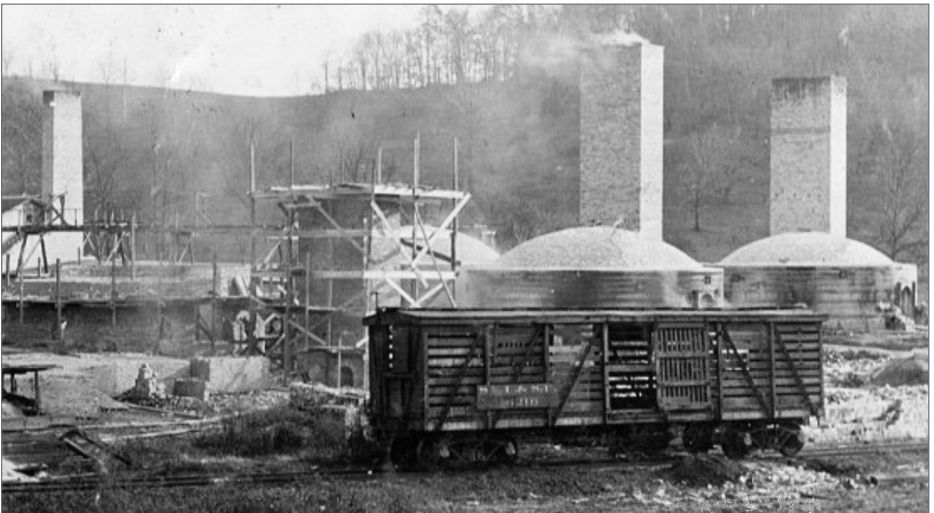
When modelers think about hauling coal (but not coke, which is more useful), they almost always think of hopper cars. But



13. Milwaukee Road 2667 is seen hauling what looks to be 2"x8" planks during the late Depression years.



14. Wreck photos are sometimes the only way we'll ever see both rare freight cars and what they were carrying. Here, a string of derailed CA&StL (Chicago, Alton & St. Louis) stock cars were carrying cut lumber in 1886.



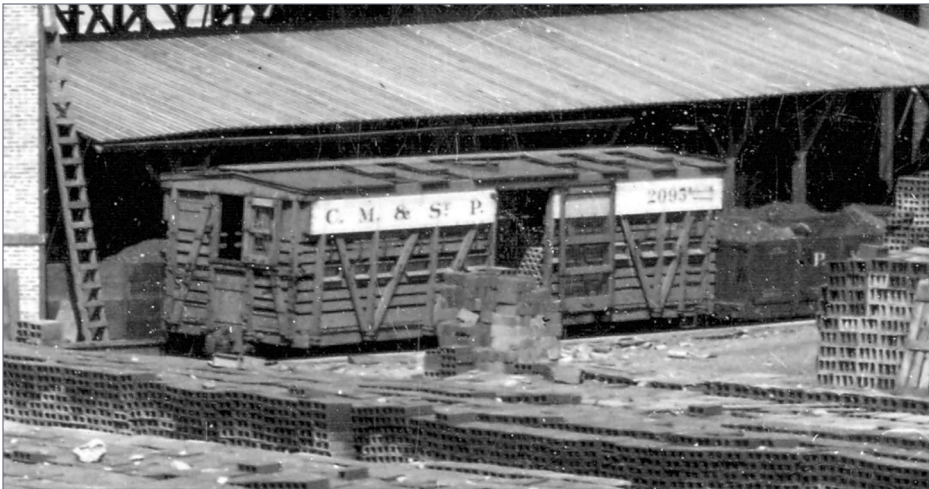
15. St. Louis - San Francisco (SLSF) 6216 waits to be loaded with stacks of bricks.



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16. Surrounded by drain tiles of all shapes and sizes, Milwaukee Road 2095 is loaded in Milwaukee before WWI.



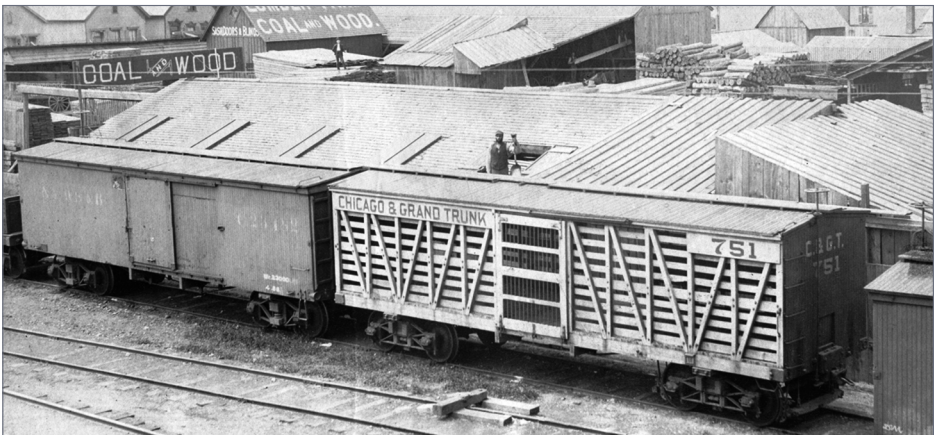
17. Sewer pipes are loaded into a Chicago Great Western stock car in Lehigh, Iowa.

for all of the 19th Century, and for the first half of the 20th, gondolas were the most common coal-carrying car. Boxcars and stock cars were also regularly used to haul loose coal and coke [18-22].

In fact, on the Milwaukee Road's Terre Haute IN division, coal mines were built with boxcar loading spots up to 1952. Some railroads even experimented with triple-use cars: stock cars with drop-door floors, for use in hauling animals, coal, or coke [21].

Boxes and barrels

If a railroad found itself short of boxcars, but flush with clean stock cars sitting idle, they could send the stock cars to shippers, especially if the load was otherwise protected from the elements. Items in wooden barrels or shipping crates would have been well-suited for stock cars and were a frequent lading [23-26].



18. Chicago & Grand Trunk 751 has just had its load of coal removed, as a tired employee stands at the local lumberyard's coal bins. Unloading coal by hand seems like a labor-intensive waste of time but hiring day-labor was usually far cheaper than investing in conveyors, well into the 1950s.





19. A variety of cars sit in the yard next to a steel mill, all loaded with coke. The car that looks like a roofless stock car is a dedicated coke-carrying car, while all of the others are plain old stock cars, boxcars, or hoppers.



20. Seeing a stock car parked inside the unloading shed of a coal dock definitely will turn a few heads at your next operating session. As seen here in Manley, Iowa, it happened at least occasionally.





21. A few railroads like the Colorado & Southern and SLSF experimented with dual-use cars that were designed to haul either animals or coke. Both railroads hauled both loads regularly, so it made some sort of

sense. Between 1907 and 1910 the C&S bought 614 of these cars, and in 1910 the Frisco bought another 500. These 1,114 cars weren't a success, and the experiment wasn't repeated.

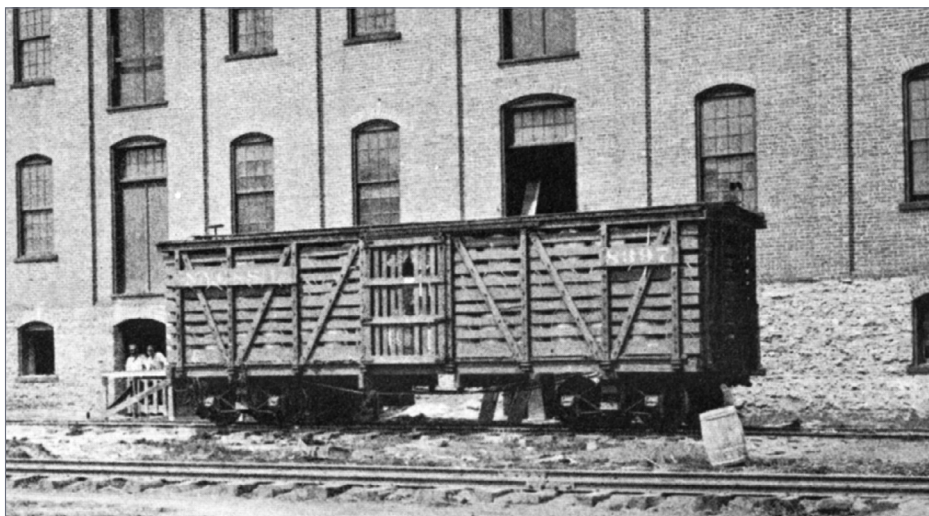


22. All four cars in this string of Norfolk & Western house cars are loaded with either coke or pine bark, both common commodities hauled out of central West Virginia. Note the widely spaced slats across the door openings; coke is generally shipped in large pieces, so there was no need for a solid door to keep the stuff in.





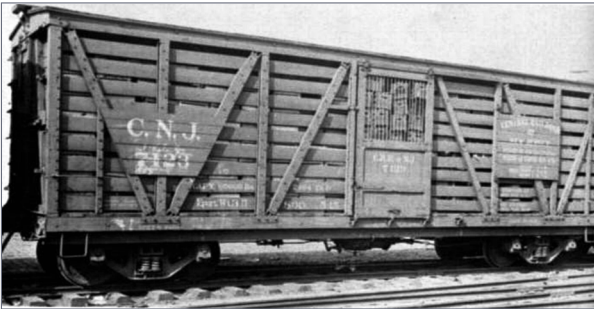
23, 24. The Southern Pacific regularly hauled crated produce in stock cars, especially during the rush periods. In these two photos canned peaches are being loaded into stock cars. Of note, these cars are lettered for the Galveston, Harrisburg and San Antonio Railway.



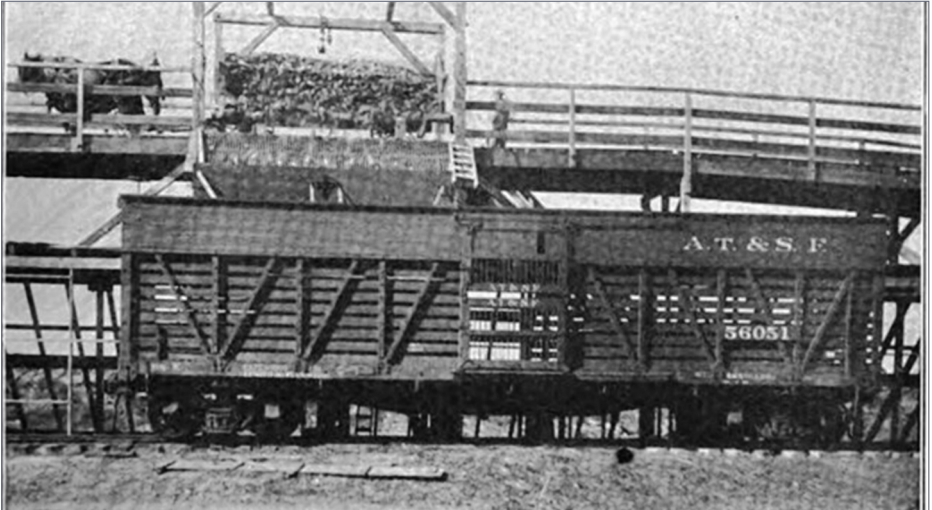
25. This Nickel Plate stock car is spotted at a glass factory in Findlay, OH, and is full of barrels containing cleaned and graded sand.

Food besides watermelon

We mentioned loading stock cars with watermelons previously, but just about any non-fragile foodstuff could be loaded into the cars as well. Bulky, heavy, and relatively sturdy items like sugar beets and cabbages were common loadings [27-31].



26. Central of New Jersey 7123 holds produce crates.



27. The Santa Fe kept a large number of stock cars with rooftop feeding hatches on their roster longer than most, as they found them to be a handy way to load bulk sugar beets.





28. It's harvest time in Union Grove, WI, as stock cars are loaded with cabbages, and gondolas are filled with sugar beets.



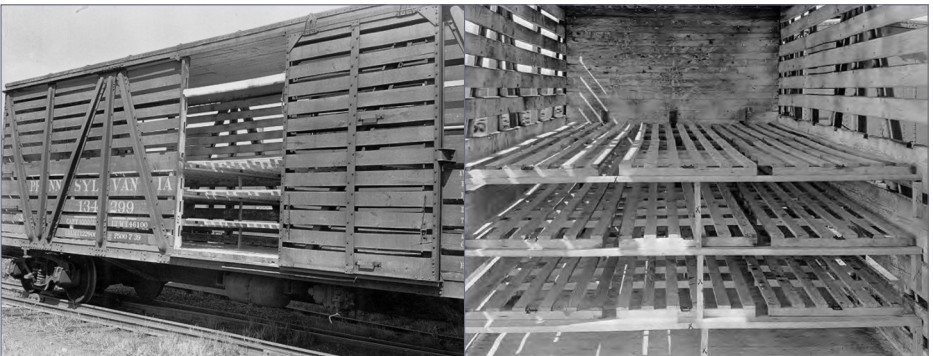
29. This wreck image shows several crushed Lehigh Valley stock cars that had been loaded with cabbages.

Other stuff

As the MCBA loading rules show, stock cars could be filled with just about anything. Here are a few examples. With so many different uses for stock cars, there's no reason not to get



30. This group of farmers is loading 50-pound sacks of onions into a UP/Oregon Short Line stock car.



31, 32. During WWII, the Pennsy modified several stock cars with racks to carry tomatoes.



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STOCK CARS USED FOR OTHER THINGS | 20

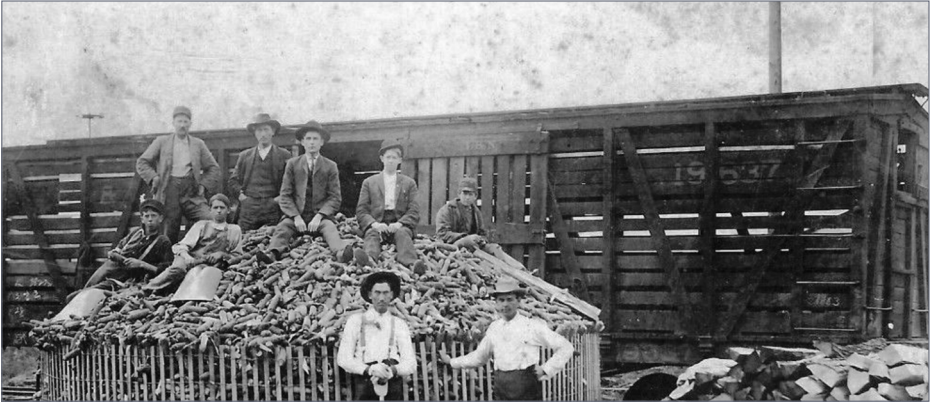
creative with the stock car assignments in your layout's operations.



33. ATSF 50245 is seen in Denver in 1906, being loaded with railroad wheels.



34. These Chicago Burlington & Quincy stock cars are seen in the early 1970s, late in their lives, delivering grain doors to an elevator.



35. farmers load an Louisville and Nashville stock car with corn cobs.



36. New York Central 23259, a Palace Horse Car, is being loaded with National Guard wagons in an exercise just before the United States' entry into WWI.



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37. A very few stock cars were even equipped with end doors, specifically so they could be loaded with vehicles.

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38, 39. And finally, stock cars occasionally even hauled people, whether migrant workers or Walt Disney. ☑



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RAY BREYER



Ray, a second-generation model rail-roader, has been active in the hobby for as long as he can remember. At age six he gave his first modeling clinic, when he demonstrated scratchbuilding trees at the 1976 NMRA National Convention in Chicago.

Ray has been a prototype modeler since 1998. He's currently modeling the Nickel Plate Road's Peoria Division in the spring of 1929. An avid researcher and scratchbuilder, Ray has written several prototype-focused articles for the NKPHTS magazine, as well as for several online blogs.

He's also contributed research material, research time, and photos for pieces by many other authors.

Ray lives and works in Elgin, IL, with his wife Candice, daughter Vivian, and son Alex. He's also the editor of the NKPHTS' online modeling magazine, the Nickel Plate Road Modeler's Notebook. ■



RATE THIS ARTICLE

THE AH-HAH MOMENT

column



MRH Running Extra | January 2021

JOE FUGATE EXPLORES LED STRIP
MOUNTING FOR LAYOUT LIGHTING ...

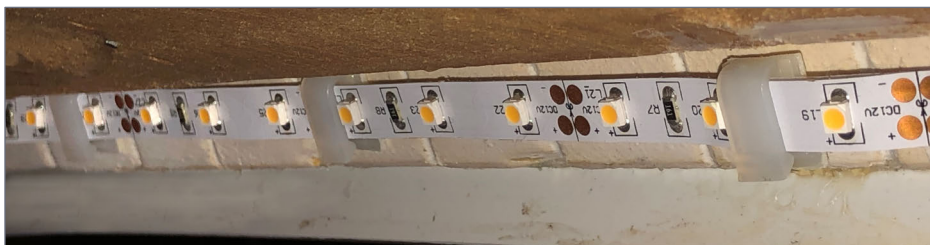
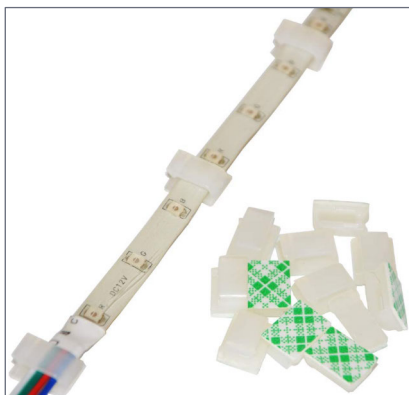


RATE THIS ARTICLE

NOW THAT I'VE STARTED BUILDING MY NEW (SECTIONAL) TOMA SIKIYOU LINE 2, I get to take advantage of the latest tech developments like LED strip lighting.

Since I'm using a shadowbox approach to building my modules, they include both a backdrop and a valance. I'm using triangular wood molding on my module valance for mounting the LED lighting. However, I did not want to mount the strips directly onto the molding.

1, 2. Using these plastic clips, I installed my LED lighting strips on my first two Siskiyou Line 2 modules. These clips allow me to easily string a 5 meter LED strip across several 4-6 foot modules and easily remove them to take the modules apart. In the photo below, I install the strip from below onto a triangular piece of molding.



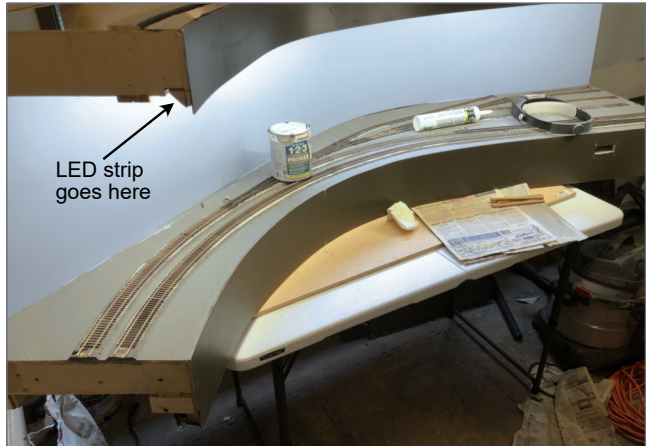
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THE AH-HAH MOMENT | 2

2. The LED strip mounted with the plastic clips on the triangular wood molding provides plenty of light to the module, as you can see here. Note my modules include a backdrop and valance.



I am using 5 meter long strips on modules 4-6 feet long and I don't want to cut the strips up, yet I want to still be able to take the modules apart (only when I move to a new house, mostly). That means I *do not* want to use the adhesive on the back of the strips for mounting.

I found these plastic clips [1, 2] for mounting the LED strip and they work like a charm for inserting and removing the LED strips. *Ah-hah!*

One important note, however. LED strips mounted in this way without a heat sink will have a shorter service life (~10,000 hours instead of 50,000 hours) – a few decades instead of a lifetime on a model railroad!

To increase the service life of LED strips, the pros recommend you mount them to aluminum strips to act as a heat sink. It turns out you can get flexible aluminum strips [3], but they do add significantly to the cost. ☒

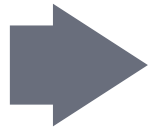
3. Another option that can prolong the life of LED strip lighting is to mount it on a flexible aluminum strip that acts as a heat sink. The strip includes a diffuser to remove hot spots.



To get a shopping list for this article, visit the *MRH* website at this link: mrhmag.com/magazine/running-extra/2021-01/ah-hah-moment

Bonus section!

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



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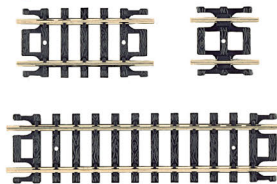
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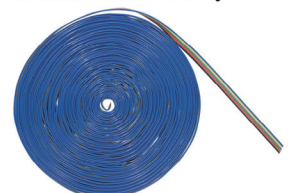
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H0 Scale Preproduction Models Shown
Scene and photography by Ken J Johnson



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PUBLISHER'S MUSINGS



Model Railroad Hobbyist | January 2021

JOE FUGATE ANNOUNCES SOME
EXCITING NEW CHANGES ...



I AM DELIGHTED TO ANNOUNCE SOME EXCITING NEW CHANGES AT *MRH MEDIA*.

First, we're bringing on a new Assistant Editor, James Regier. James has been working as a general editing assistant for the last several months, learning the ropes. As of January, we're making him officially my assistant on the magazine.

We're continuing to train James in all the tasks that I typically do, so he can keep growing in his ability to help carry a lot of the monthly load. Let me turn the floor over to James!

Hello from James Regier

Hello, everyone! It is an honor and a privilege to have joined the editorial team at *Model Railroad Hobbyist* magazine.

For as long as I can remember, model railroading has been a part of my life in one way or another.

My dad, who had greatly enjoyed his Lionel sets growing up, decided he would get back into the hobby when he found



out I was on the way, ordering the Lionel Famous Railroads set for 1981, which happened to be Great Northern.

Lionel and Brio became a big part of my early childhood, along with visits to model train shows and to clubs. When it came to clubs, the Wichita and Ark Valley stands out as a fine one.

This club's prototypical representation of the local cities of Hutchinson and Wichita inspired my dad and me as a great example of how to do the hobby. These visits played a role in my switch to HO scale when I was eight – that scale's typical realism and attention to detail appealed to me from early-on.

Returning to the hobby a decade ago, I found myself in a very different world. DCC sound and hyper-detailed locomotives

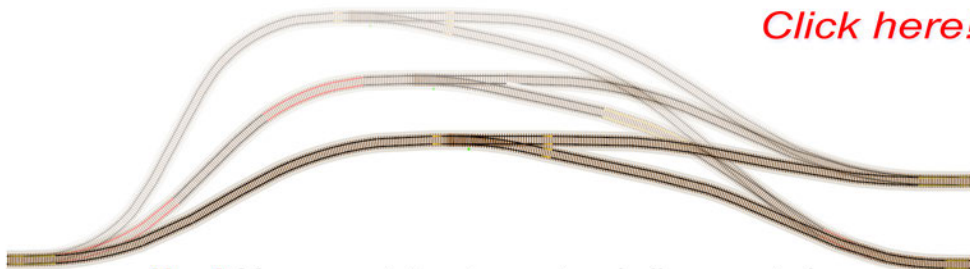
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PUBLISHER'S MUSINGS | 3

had come to dominate the scene, and I had *a lot* of equipment to upgrade! I turned to YouTube to learn about DCC conversions, observing outstanding work from Al Mayo, Dan Cortopassi, John Abatecola, and *MRH's* own Bruce Petrarca.

I had my initial foibles – I managed to utterly destroy a motor in an Atlas/Kato GP7 trying to replace its leads – but I also learned not to fear failure.

I began converting my fleet of Atlas/Kato GP7s and Stewart/Kato F7s to DCC, upgrading them with Tsunami sound and LED lighting. My results gradually started to get better and better.

I looked for local hobby shops around St. Louis and discovered K-10's Model Trains in nearby Maryville, IL (featured in the June 2020 issue of *MRH*).



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Before long, I became a regular at the Thursday-night operating sessions at K-10's. Folks would bring the latest from the manufacturers, along with their latest projects. This show-and-tell aspect, combined with other hobbyists' constructive criticism and encouragement, challenged me to constantly improve my work.

Shortly after that, The Magic House St. Louis Children's Museum hired me to maintain and manage its Canfield Station layout. Alongside the more mundane aspects of cleaning and maintenance, I had the opportunity to find areas for addition and improvement.

I experimented with adding LED lighting to buildings, adding animated features, and even using Arduino programming to create intelligent features. I wanted to do anything I could to provide the visiting children and their families with the best experience.

A couple of years later I ran into Daniel Coombs at a swap meet, and I visited Ken Patterson and his layout for the first time. I brought a few projects to show Ken and some of the folks in his basement, and eventually became a regular participant on the *What's Neat this Week* video podcast.

I had the opportunity to learn firsthand from Ken Patterson, Mike Budde, and many of the other folks involved, including representatives from many of the manufacturers in our hobby. At some point, Ken invited me to share some of my projects in segments on his monthly "What's Neat" column for *MRH*.

While model railroading certainly has its elements of solitude, it's a hobby that I find to be most enjoyable when shared. We all can learn from each other, and it's a thrill to be part of an online family that facilitates the exchange.



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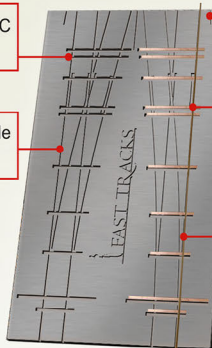


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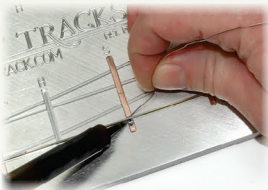
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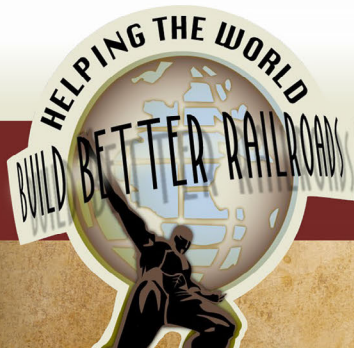


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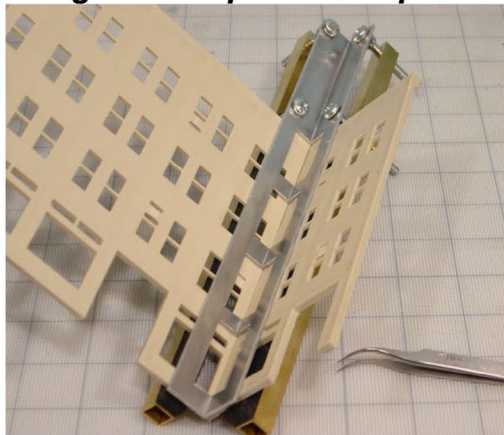
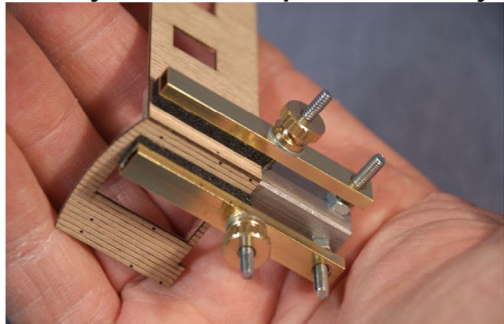
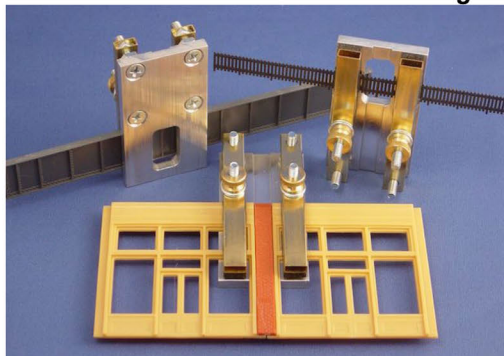
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PUBLISHER'S MUSINGS | 5

To borrow a phrase from Ken Patterson, "Model railroading is the best hobby in the world, with the best people in it."

Doing live videos

The end of December, we launched a new live Q&A video segment on TMTV called "MRH QAT: Questions, Answers, and Tips."

We plan to make these live segments available to Train-Masters TV members.

We bring on some *MRH* Staff person, share some tips on video, then open up the floor for questions.

You can ask us anything hobby-related and we'll do our best to give you an answer. In some cases we may need to go off and do some additional research or put together a demo for the next live session to give you the best answer.

Since we're all hunkered down this winter trying to get past the pandemic, we're looking to take advantage of going live online.



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Also doing more TMTV web clinics

We're also now doing more TrainMasters TV web clinics with the host and guest meeting over the web to conduct the video clinic. We've put the first two web-based "New Backshop Clinics" up on TrainMasters TV, so go have a look!

TMTV web clinic 1: All about clearances

The NMRA gauge is a lot more than just wheels, track, and couplers, it's also loaded with ten different clearance dimensions.

On top of that, the classic clearance gauge only covers 1920-1969. If you model outside of this era and rely on the classic gauge, you may have problems. Joe Fugate does a deep-dive into getting optimum clearances for a layout modeling any era.



WEB: trainmasters.tv/programs/all-about-clearances

TMTV web clinic 2: Making your own ballast

Joe Fugate shares his method of making your own ballast for any scale and in any color. Demonstrates the methods on camera that Joe described in the December *Model Railroad Hobbyist* cover story.



WEB: trainmasters.tv/programs/make-your-own-ballast



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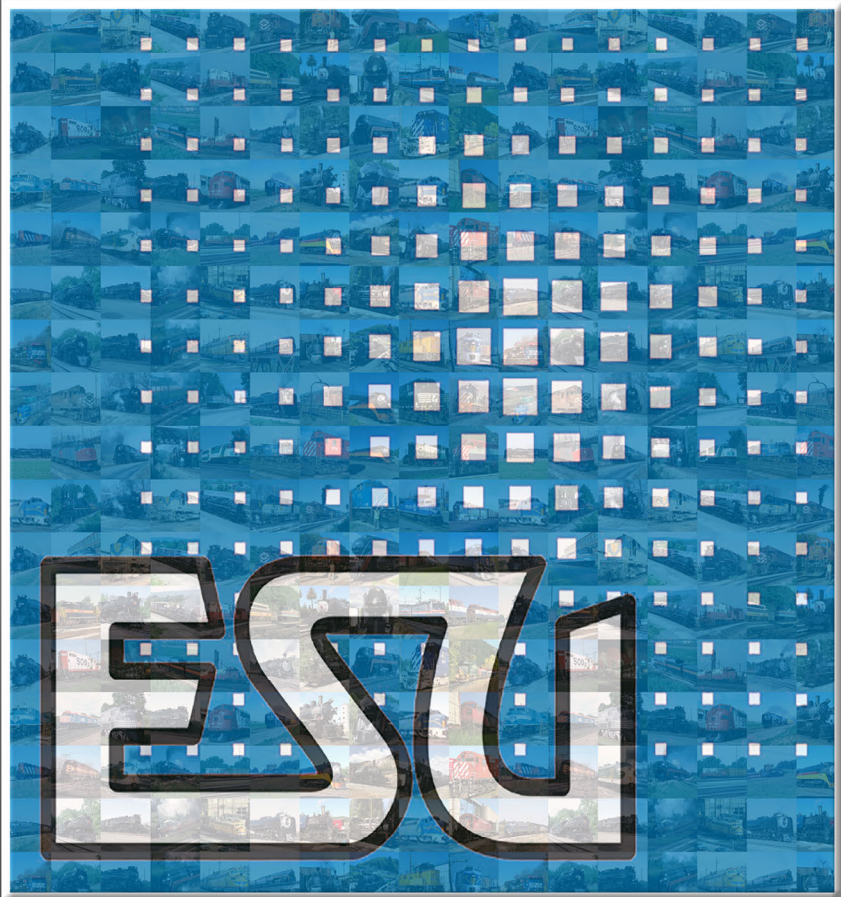


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Still looking for layout stories

Since we can't really travel right now to shoot layout stories, we need modelers to step forward and provide their own layout stories.

We need both articles and layout videos. We are interested in just about any type of scale model train layout of any size and from any era. If you're particularly ambitious, we'll also consider a multipart layout story if you think you have enough to say about your layout.

For more on the technical details of how to shoot layout stories in video form, see the [October issue of MRH](#).

A special note to small layout owners, please, please, please do not write off your layout as not be of interest because it's "too small" – on the contrary!

One of the biggest requests we get is to do more layout stories on *smaller* layouts! Consider: how will we ever do stories on smaller layouts if you smaller layout guys don't step forward and volunteer to do a story on your smaller layout?

If you might be willing to do a story on your layout, just reply using the comment button below. ☒

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LAST ISSUE'S RATINGS

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

4.8 Making your own ballast

4.8 Savvy Modeler online: Straighten music wire

4.6 Publishers Musings: LED strip layout lighting

Issue overall: **4.9**

Please rate the articles! Click the reader comments button on each article and select the star rating you think each article deserves. We depend on these ratings to help us determine which articles to publish, so your rating matters! ■

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Best of the MRH WEBSITE



THIS
MONTH

Model Railroad Hobbyist | January 2021

Compiled by **JOE FUGATE**



Taking your model lighting to the next level

While this is a *commercial* product being made by MRH forum member **amsnick** (Nick Santo), it's just too cool to not get a mention! Nick operates a small home hobby business, and he's best known for his ground-breaking product, the Decoder Buddy.

"The light fixtures on EMD, GE, and other manufacturers are all very similar. At 1/87 scale there is no visible difference. I have finalized my production parts for the ground lights in HO scale."

Visit the thread to learn more!



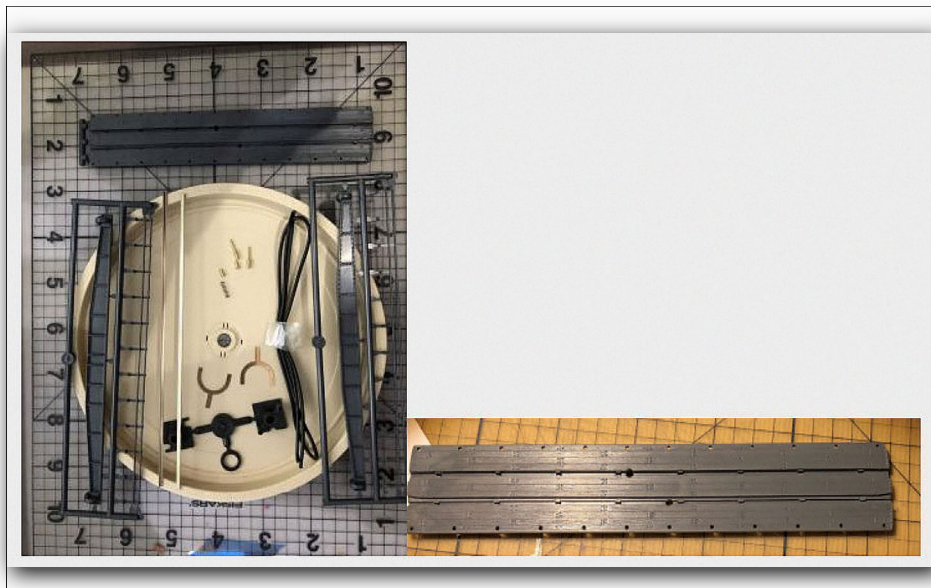
[View the full thread on the MRH website](#)

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

MRHMAG.COM

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1. Richard Kurschner purchased this PECO N scale turntable kit and then describes his build process on the MRH forum.

PECO turntable build

MRH forum member **lineswestfan** (Richard Kurschner) picked up this PECO N scale turntable kit and has been documenting his build process.

“Got my butt in gear. Starting to build the ‘Peco NB-55 Well Type Turntable.’ Thought I’d document my progress in this thread. By all accounts, it’s supposed to be an easy plastic kit to build, which is good since I’ve never been really happy with any plastic kit I’ve ever built. It is an armstrong model, and I intend to leave it manual. Guess that makes it a ‘fingerstrong’ turntable?”

Check out Richard’s thread to see how it’s coming!

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



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DR5052 DCC Turntable Controller

LocoNet, RailCom, PC App, USB

\$131.94



DR5088RC 16 Channel Feedback RailCom Detector

LocoNet, USB, PC App

\$119.94



2. Andrew Vanlaar asked about how to do curved track module joints and Jim Branum posted this example photo.

Finding the perfect home made spray booth

Forum member **arvanlaar** (Andrew Vanlaar) asked about how to best do curved module track joints:

"I plan to have three HO modules that come together to form the completed layout. It seems you can join up two modules with curved track running between the join, but I really haven't found any info on how to lay, cut, or align curved track between two modules.

Is there anything in particular that I need to know when having curved track between two modules? Is there anything that needs to be done differently than running straight track between them?"

If you're wondering how to do module joints with curved track, check out the discussion on this thread!

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



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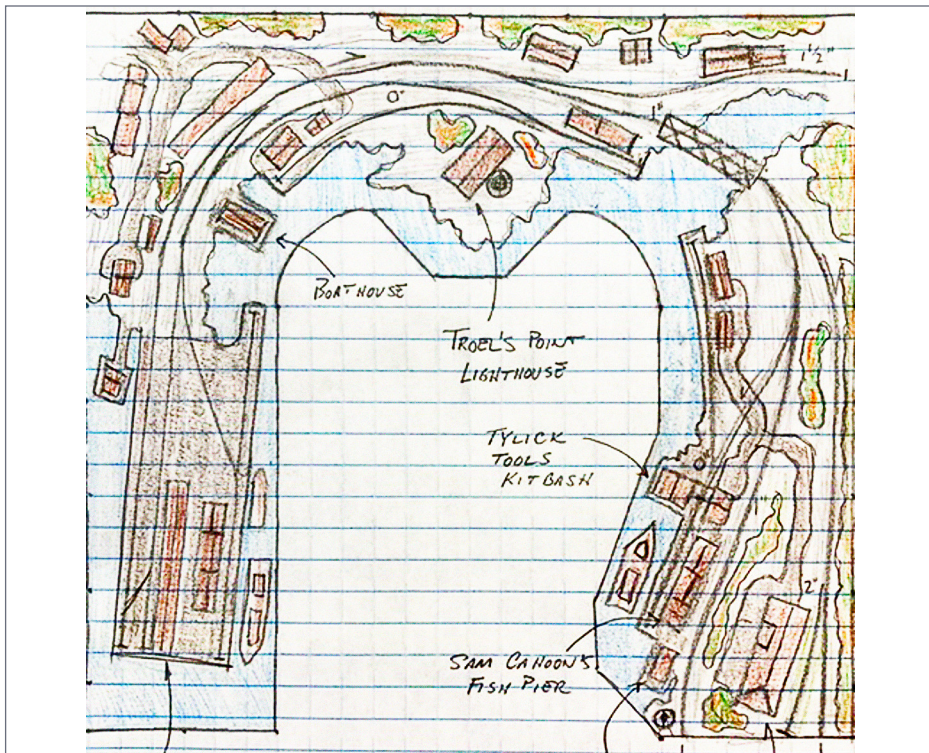


WHAT'S NEW?



Established 1993...

Blair Line



3. Here's a track plan of a nice small layout being built by new MRH forum member J Emerson.

Developing the Emerson Coast Railroad

MRH forum member **J Emerson** chronicles the process of building the small Emerson Coast layout on his MRH blog.

"I've lurked here for a while and have been working on this newest layout since the beginning of the year, albeit with a long layoff due to the basement getting a new floor and the COVID situation affecting work."

Visit J Emerson's blog and follow his progress!

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



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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. The top photo is actually from J Emerson's *Coast Railroad* on the previous page. The latest photo thread also has many other great photos such as this one of #4743 from SD40-Fan.

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WHAT'S NEAT

column



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KEN PATTERSON'S COLUMN THIS MONTH ...



VIEW READER
COMMENTS

- Four ways of making evergreen trees
 - ✓ Hogshair furnace filter
 - ✓ Dried caspia blossoms
 - ✓ Bachmann wire foliage branches
 - ✓ Trimmed plastic fern material
- Visiting Dennis Krausman's Santa Fe Layout

WHAT'S NEAT with Ken Patterson
4 ways to make conifers

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PHOTOS AND VIDEO OF SUPERB MODELS

WHAT'S NEAT | 2

ON THIS MONTH'S WHAT'S NEAT VIDEO, Ken shows us four different ways of making pine trees, from the tried-and-true furnace filter and caspia methods, to wire armatures and plastic artificial ferns, which he had not used before. After that he visits Dennis Krausman's Santa Fe layout, which features 150 feet of mainline, 75 feet of branchline, plus storage, yards, and sidings for a total of 400 feet of track.

Making pine trees



1. Ken shows the materials he will use for branch structures on four different pine trees.



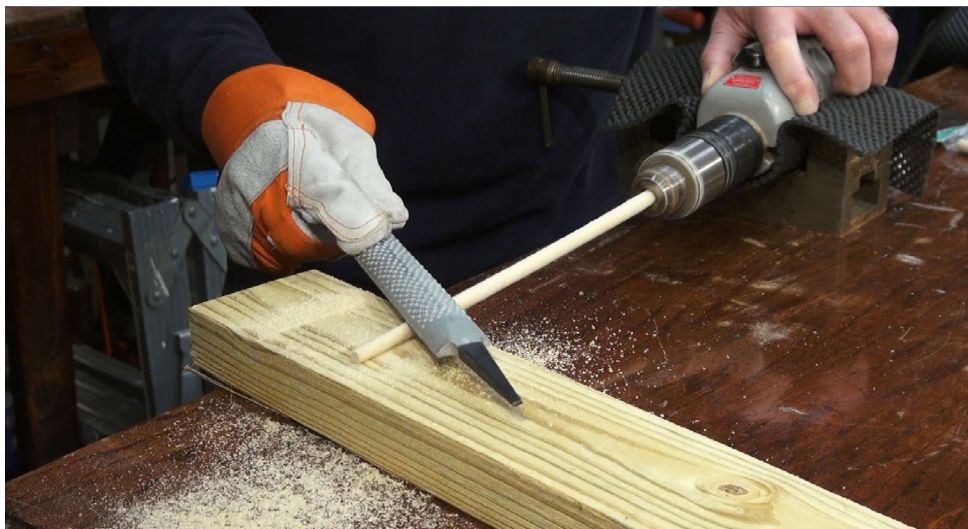
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2. One of several techniques Ken shows for tapering 1/4" and 3/8" dowels into a tree-like shape involves securing a 1/2" drill in a vise and tapering the dowel with a horse rasp as the drill runs at 1000 rpm.

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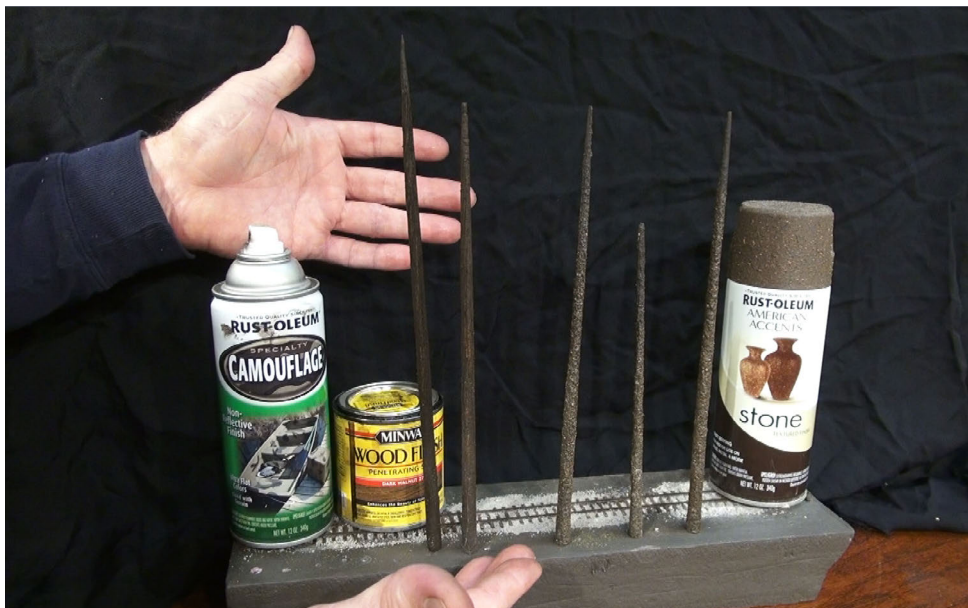
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3. Two methods Ken uses for coloring the tree trunks are Rust-Oleum Stone Texture spray paint and a combination of wood stain and Rust-Oleum camouflage earth spray paint. The two trunks in front of Ken's hand were painted with the wood stain-camouflage earth method, the other three with the stone texture paint.

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4. The first technique Ken demonstrates is using hog's hair furnace filter material, which creates trees like these seen on an On30 diorama.



5. Here Ken secures the pulled apart hog's hair furnace filter material to the trunk with super glue/ACC.

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6. Hairspray, ground foam, and static grass complete the tree.

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7. The other three methods require drilling holes in the tree trunk. Here Ken uses a small drill press to do it. A pin vise or any powered tool with a chuck that can accommodate small drill bits will also work.



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8. The second type of tree Ken is making uses caspia that has been dried and cut up for the branches. The branches are glued into the holes on the trunk.

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9. Ken covers the caspia branches with hairspray and ground foam. Here he is brushing ground foam off the trunk with a stiff-bristle paint brush.



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10. This photo shows us the third method Ken is demonstrating, using Bachmann wire foliage branches (shop.bachmanntrains.com/index.php?main_page=index&cPath=264_469_475_476&zenid=jgh223ld5pojo5dhpu9b0108v0) as tree branches. He removes the ground foam they are covered with and glues them to the tree trunk in the same manner as the caspia branches.



Also see the "What's neat this week" weekly video podcast!





11. Ken flocks the tree with ground foam and hairspray, and then uses a static grass applicator to cover the tree in static grass “needles.” Two applications of hairspray and static grass works best.



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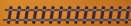
12. Here Ken demonstrates how he glues trimmed plastic fern material he bought at Hobby Lobby into the holes on the tree trunk.

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13. Flocking the plastic fern tree with fine ground foam to add texture, the tree is now complete.

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14. Here are the three “glued branches” types of trees mixed in with a group of Grand Central Gems pine trees. From left to right: Caspia, wire branch, and plastic fern trees.

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15. In the second segment, Ken takes us on a visit to Dennis Krausman's Santa Fe in southern Colorado layout.

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16. The mainline is 150 feet long, with a 75 foot branchline. Total trackage is about 400 feet including yards and sidings.

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comment on the articles
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17. The layout is placed in 1948-49 because Dennis likes both steam and 1st generation power, especially Santa Fe warbonnets.



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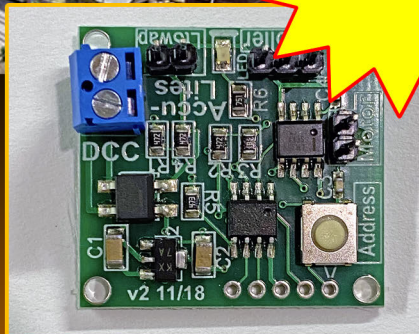


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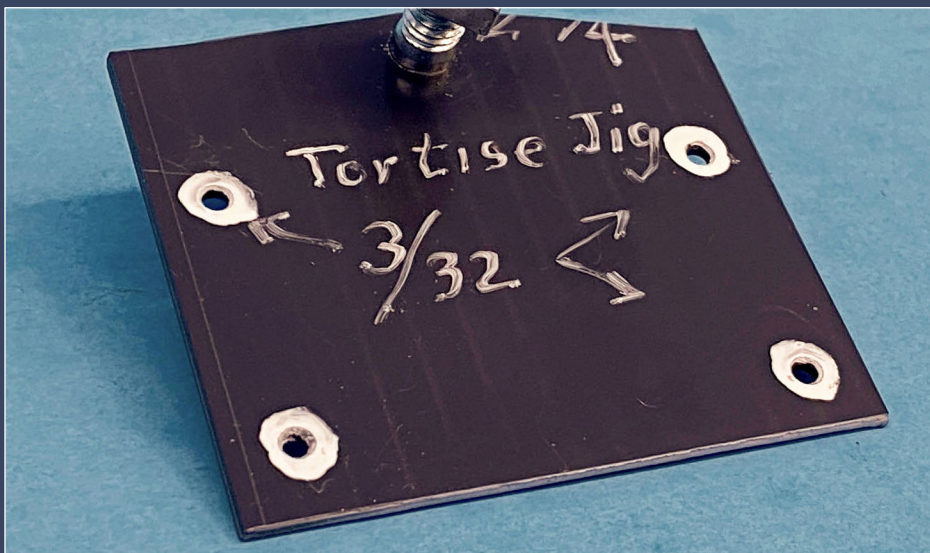


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My Tortoise template



Model Railroad Hobbyist | January 2021



**MICHAEL MCGINLEY SOLVES HIS TORTOISE
MOUNT HOLE PREDRILLING PROBLEM ...**

**THE CIRCUITRON “TORTOISE” STALL-MOTOR
SWITCH MACHINE COMES WITH A** template printed on
the instruction sheet to guide the user in installing it up
against the baseboard under the switch points.

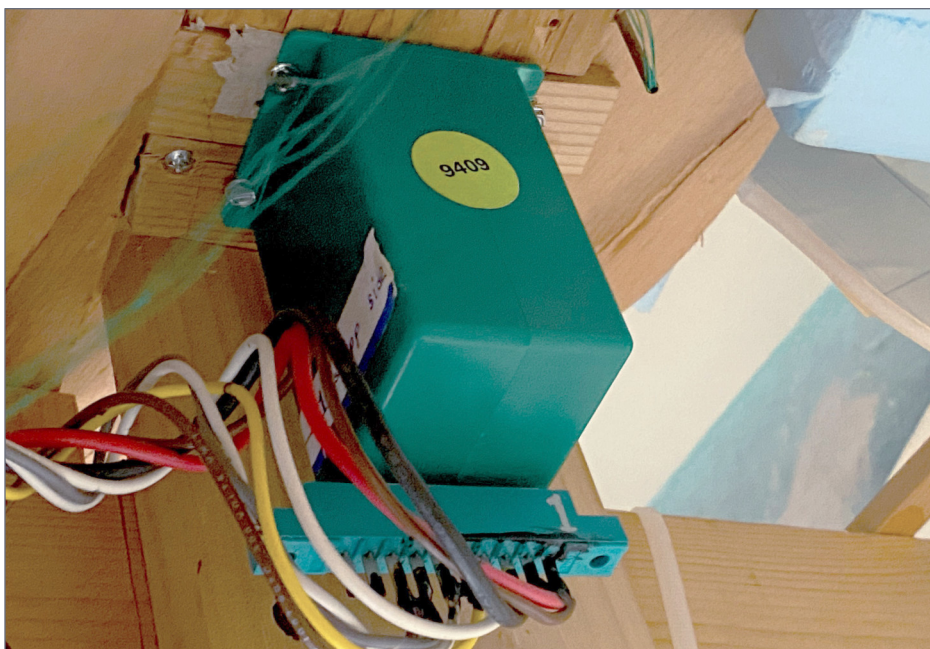
Here is an enhancement I made to that template. This article
builds upon the instructions contained in the Circuitron package.

My TORTOISE TEMPLATE | 2

Instead of cutting out the template and using it as a loose piece of paper, I traced it onto paper, then marked the hole centers on a piece of 0.060" styrene sheet. The mounting screw pilot holes are $\frac{3}{32}$ " for the No. 4 pan-head wood screws and the operating rod hole is $\frac{1}{4}$ ".

Working overhead under the layout is never comfortable, and gets harder with advancing years. It is even more challenging if the scenery is complete. I decided to enhance the template to make it as easy as practicable.

The first modification is to use a bolt to secure the template in place before drilling the mounting screw pilot holes. I drilled the $\frac{1}{4}$ " hole for the operating rod at the center line of the track at the point of switch, then used a hex-head $\frac{1}{4}$ " x 1-1/2" machine screw to locate the template.



1. Typical Tortoise habitat; hard to reach. Some locations have more feeder and signal wires.



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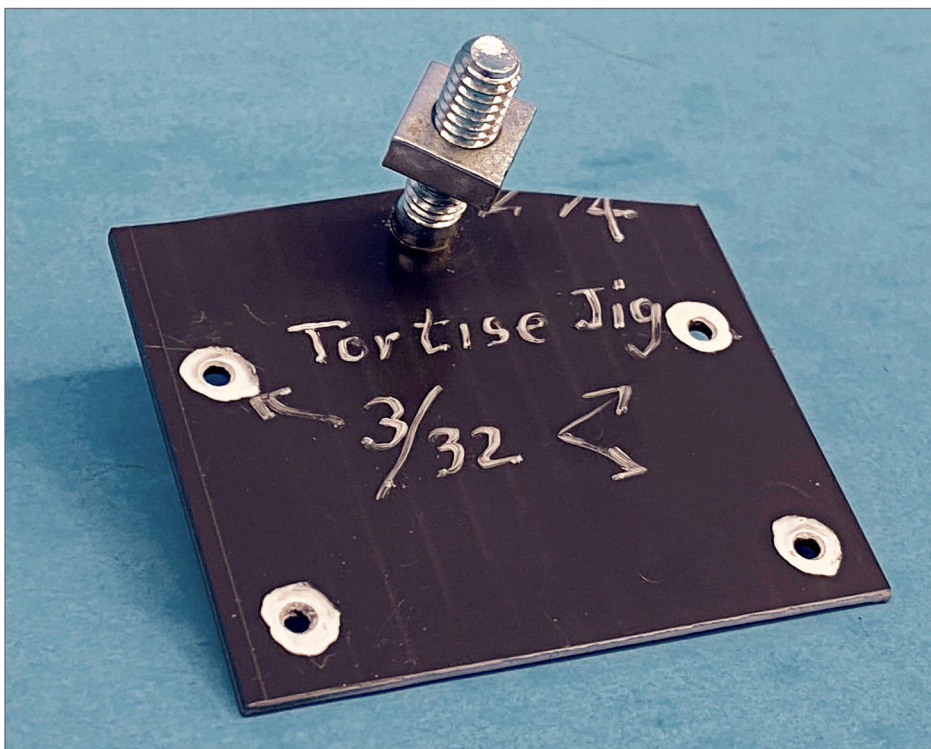
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MY TORTOISE TEMPLATE | 3

I inserted the bolt into the hole from the top, then got under the layout and held the bolt steady while lining up the template with the $\frac{1}{4}$ " hole, then pushing it up to the base board.

Then I threaded the nut onto the bolt and ran it up to keep the template in place. I put a lock washer under the head of the bolt to help it resist turning while I installed the nut.

Now it was easy to drill the four pilot holes for the mounting screws without worrying whether they would be in proper alignment for the mounting notches on the Tortoise.



2. My styrene Tortoise template with alignment bolt. Holes can be chamfered with an oversized drill or a countersink bit, but with styrene you have to very gently make that cut.

My TORTOISE TEMPLATE | 4

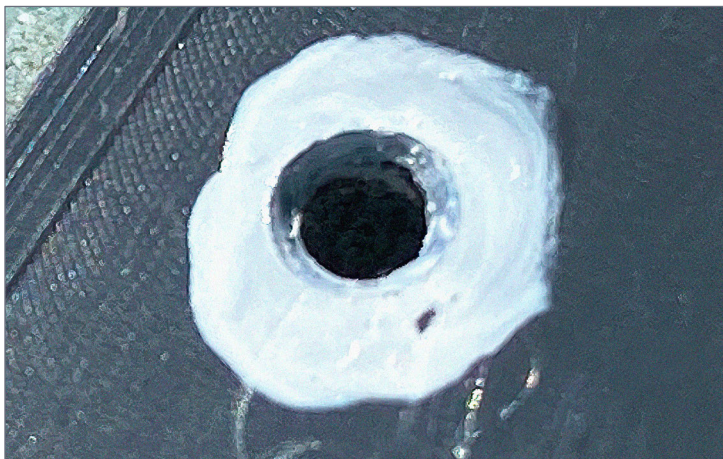
My first attempt got hampered by the awkward working position and dim light; getting the drill bit into the template guide hole was harder than it had to be.

So my second modification was to cut a slight chamfer into the holes for the mounting screws and to paint them white so they are easy to see.

After the four holes were drilled, I removed the bolt and template, and ran two screws on one side up until they were about $\frac{1}{4}$ " from the base board. Then I lined up the switch operating wire to the $\frac{1}{4}$ " diameter hole and was able to guide the notches on one side of the Tortoise against the two screws.

I used one hand to hold the machine up while starting a third screw through the notch and hole and ran it up tight, then I added the fourth screw and tightened the first two.

My photos show only the finished template and not the actual installation work because I don't have enough hands to hold a camera, a drill, and a template at once. But I hope these little adjustments to the Tortoise template will help you in your future layout work. ☒



3. Closeup of the chamfered holes to guide the pilot hole drill for mounting screws.



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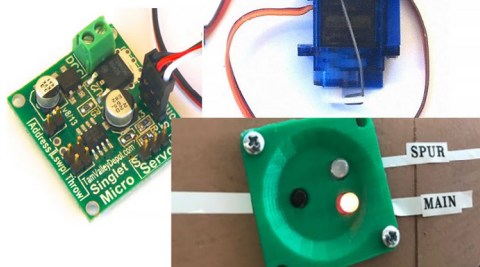
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MICHAEL E. MCGINLEY P. E.



Michael is a registered professional engineer (civil) engaged in railroad engineering, maintenance, and operations from 1966 to present. His employment includes 21 years with Southern Pacific (including three-year military leave), five years consulting engineering with Daniel, Mann, Johnson, & Mendenhall, 14 years with SCRRA (Metrolink), and part-time on-call consulting work through

2018 for various firms engaged in freight, commuter, transit, and high-speed passenger planning and design.

Positions held includes Roadmaster, Division Engineer, Director of Engineering & Construction for operating railroads, Senior Rail Engineer, Senior Track Engineer, and Manager, Rail Engineering for consulting companies.

Through all years and tasks, the end operations goals, budgets, and customer expectations effect on engineering has been the guidance for work products and responsibilities.

He has a BS in Civil Engineering, University of California. He is a member of the ASCE, AREMA.

He is married with one son. ■



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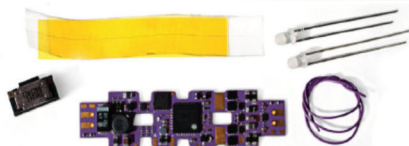
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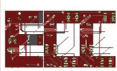
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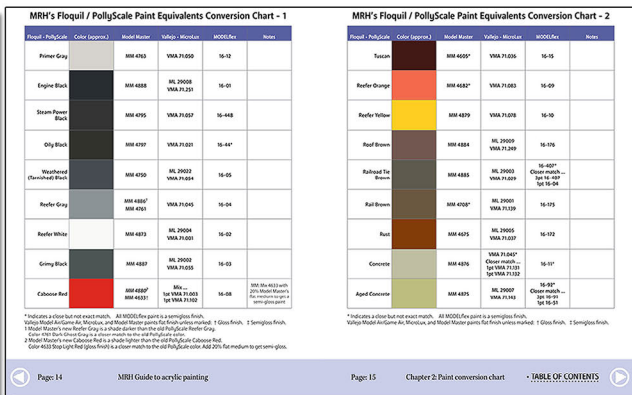
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Ops for the rest of us

Part 2



DOUG MATHESON SHOWS TWO MODEL
RAILROADS THAT EMBODY AN OPERATIONS
LIGHT PHILOSOPHY ...



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Model Railroad Hobbyist | January 2021



FOR INSPIRATION IN THINKING ABOUT AN OPERATIONS LIGHT APPROACH, let's ride along on two different railroads. They are wildly different in character and scale, yet both capture the essence of an enjoyable but realistic operation in a relatively paper-free way.

BRUCE CHANDLER'S JACKSON AND BURKE RR

Bruce Chandler, the proprietor of the Jackson and Burke, is a well-known large-scale modeler. In addition to scratchbuilding numerous models that have been featured in the model press, he has constructed a modest-sized, but well-thought-out, F_n3 garden railroad at his home in the Northern Virginia suburbs of Washington, DC.

The Jackson and Burke resulted from a reimagined history where the Carolina and Northwestern was not standard-gauged and made part of the Southern. It remained narrow gauge, and allowed a narrow-gauge partnership to continue in the back woods of Virginia and North Carolina. The J&B has connections with a narrow-gauge system that extends far enough south to include the iconic Tweetsie, the East Tennessee and Western North Carolina (ET&WNC).

Let's follow along as Bruce works through a run in his own words and pictures:

The J&B is designed for a single two-man crew (preferably engineer/conductor) operation. In my world, the J&B runs one train in each direction each day. Since it is just me and a visitor, I take the time for things like water stops and connecting glad hands [with rare earth magnets].



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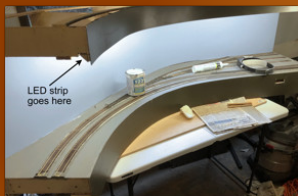
Today we are running a westbound out of Green Springs headed for Jackson. I use JMRI switch lists (more on switch lists in Part 4). Today's work looks like this:

- Depart Green Springs with J&B hopper 10, a Shell tank, J&B box 105 and Caboose 503.
- At Occoquan, drop J&B box 105 at the mill and pull J&B box 110 from the mill and Northland box 3 from the Interchange.
- At Jackson, a local move of EBT hopper 805 to Miracle Chair and pull J&B box 121 from the textile mill.

All in all, it looks pretty easy, let's see how it goes.



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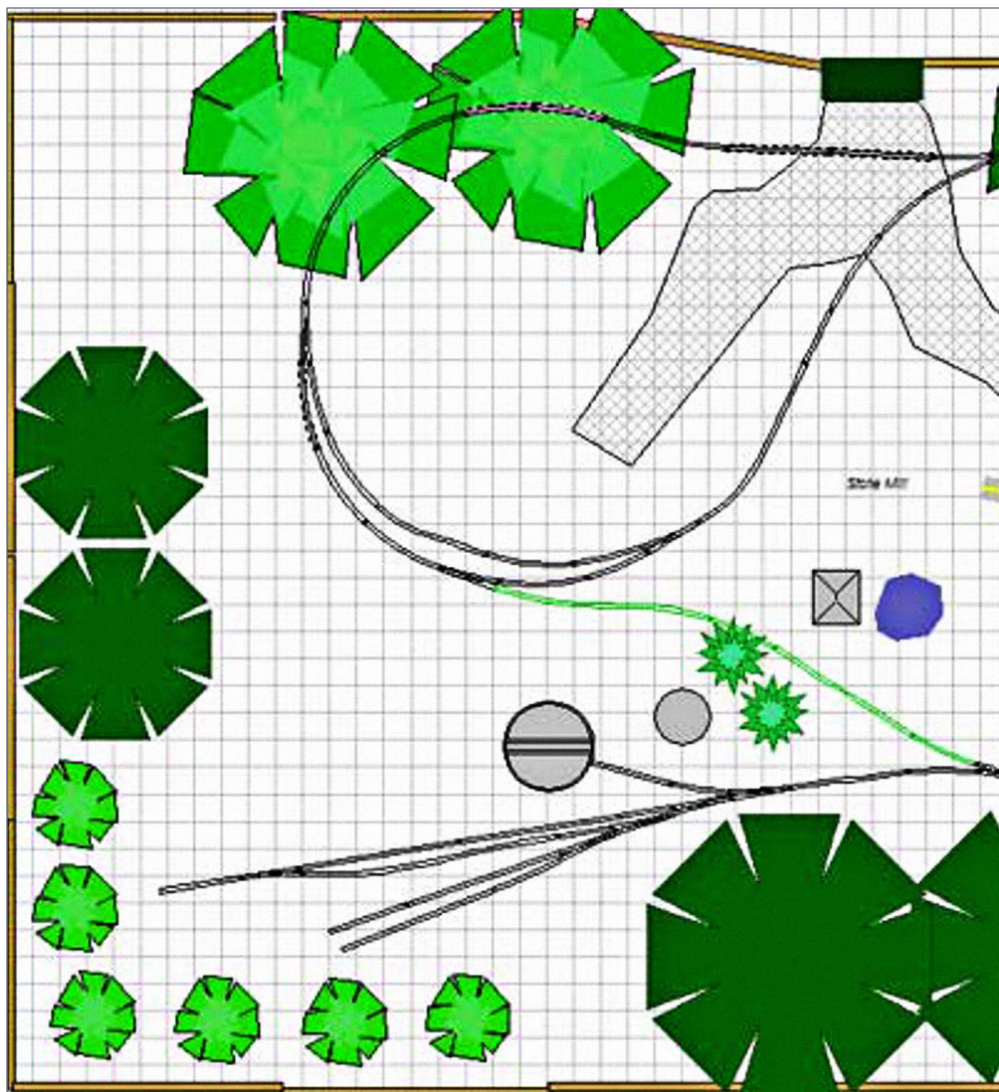
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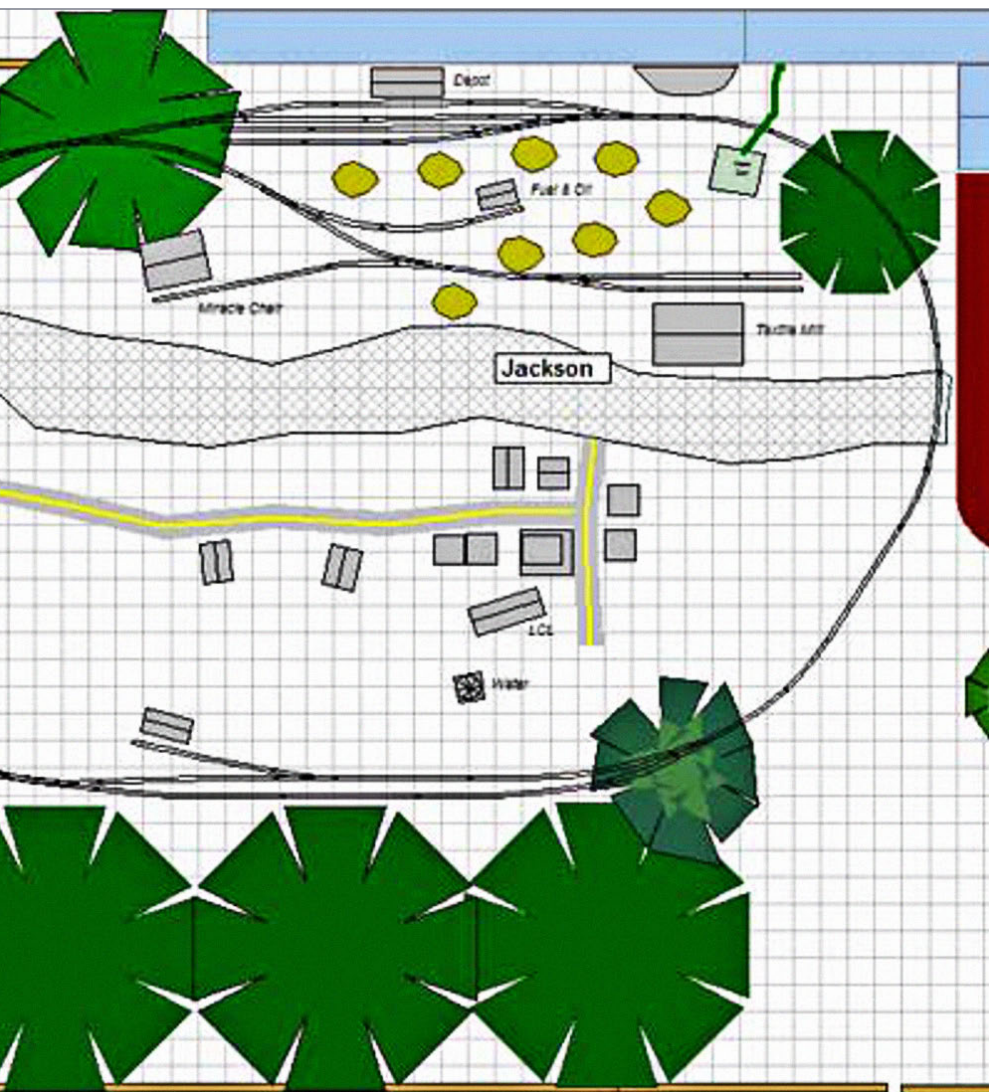
1. The Jackson and Burke occupies a space approximately 60' by 40' in the Chandler family back yard. The green line in the track plan is a connection to allow for a continuous loop, but during a normal ops session, it is an Interchange track with narrow-gauge lines to the south.



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2. The loco starts on a service track, and must first be turned.



3. Next, I pull the caboose from the caboose track. Note that I want caboose 503, but the 501 is in front of it. I will have to couple my locomotive to 501, pull both cabooses to the departure track, drop 503, and return 501 to the caboose track.



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4. I'll build my train in front of caboose 503 on the departure track. I pull J&B hopper 10 and box 105 plus the Shell tank, and am ready to depart Green Springs.



5. At Occoquan, I've got to drop box 103 at the mill – I break the train and back 103 up the siding to the mill. The only wrinkle is that I also have to pick up the boxcar at the mill, as well as the boxcar on the Interchange. I couple box 103 to 110 and pull forward, dropping 110 on the Interchange with Northland 5 ready to be pulled. Now I can set out 103 at the mill before retrieving the two boxcars on the Interchange track.



6. I reassemble the train and head toward Jackson as I think of the next move. The hopper is on a trailing-point siding at Mills Fuels and has to be moved to the facing point siding at Miracle Chair. I'll break the train and leave it on the

main; fouling the main is not a problem on my backwoods line. The main does have a problem though – it's on a steep grade. I keep a big spike handy to simulate setting brakes.



7. With just the loco, I back down the siding and pull the hopper, coupling it to the front of the train.



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8. Then, using the passing siding, I run around the train to place the loco on the rear.



9. I push the train forward so the hopper clears the switch of the runaround. I pull the train back, then run around it to pick up the hopper.



10. I back down the spur to Miracle Chair. There is a boxcar at the chair company so it is pulled, the hopper spotted behind it and then the boxcar is replaced on the siding.



11. My last pickup is at the textile mill. This one is easy – I just back up and couple to J&B box 121.



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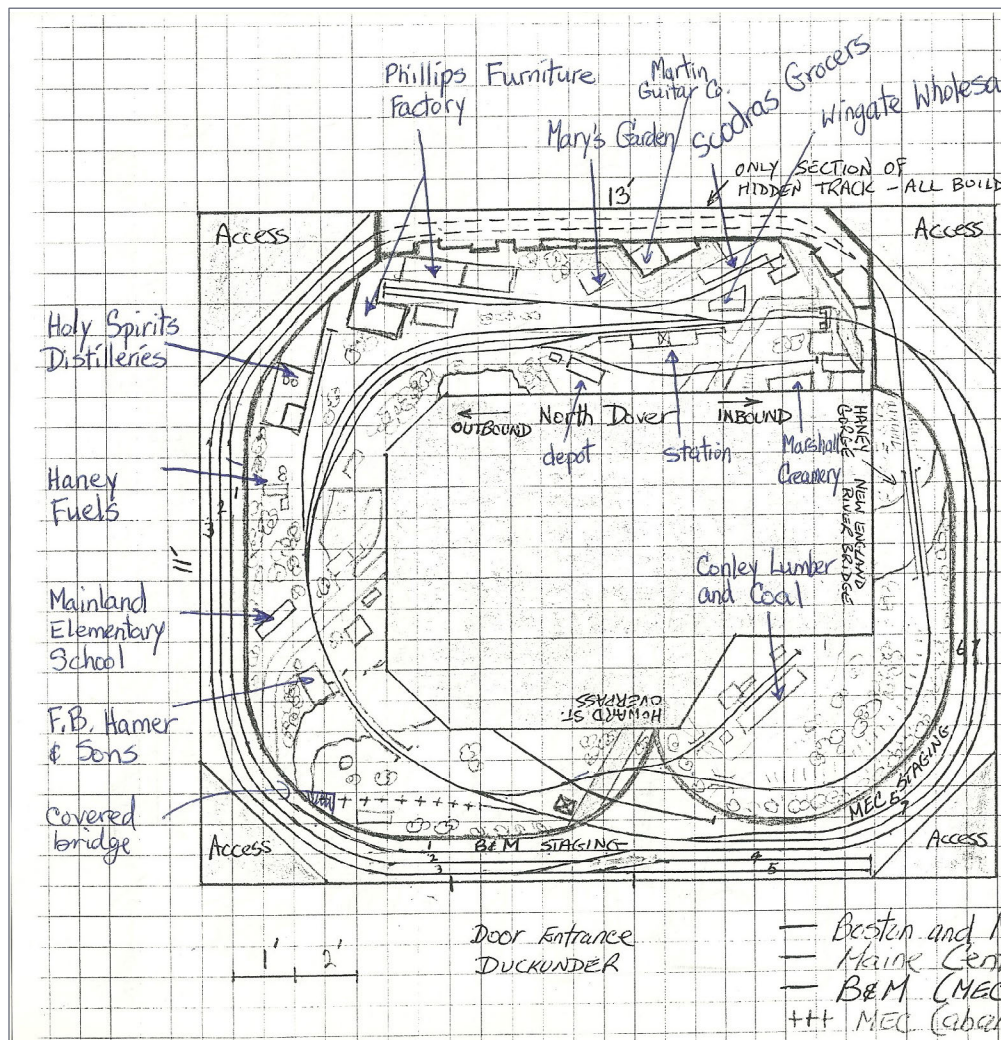
12. My switching is finished. I head up the grade and reassemble my train, making a water stop.



13. I depart Jackson across the bridge and into west-end staging.

OPS FOR THE REST OF US | 12

That completes the run for Train #2 as it enters the staging loop. This simple run servicing the towns of Jackson and Occoquan took about an hour to complete in a relaxed way characteristic of narrow-gauge operations everywhere. The train will return as #1 to complete the ops session.



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MIKE HAMER'S BOSTON AND MAINE

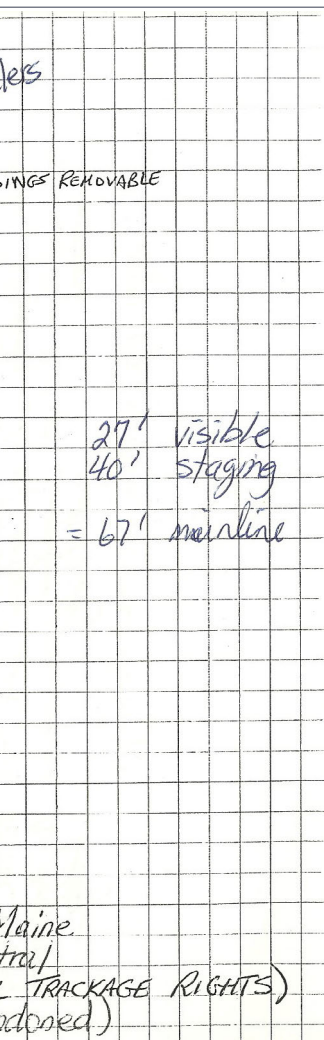
Mike Hamer's layout captures the 1950s Boston and Maine in HO scale in a 13x11 foot space. This layout has a unique approach to staging – the staging encircles the viewed layout area, and is concealed by scenery. Mike stages several trains to provide a wide variety of switching tasks in the fictitious town of North Dover, NH, the only town on the layout.

North Dover is located on the B&M main, but is also a junction with the Maine Central. The layout can be seen on a series of Youtube videos created by Chris Lyon at lyonvalleynorthern.blogspot.com/2012/02.

Mike puts together an ops session by sequencing the runs of several different trains that call on North Dover for switching. North Dover has a local switch engine. Typically, a two-man crew will be given the switch list for a through train that originates in staging. First, they marshal any required cars in North Dover and then bring the train into town for its pulls and setouts.

Let's follow along as Mike takes us through the operation of the 40-car Newsboy. The switch list (Mike uses handwritten switch lists – more on this in Part 4) for the Newsboy shows that it will set out four cars in North Dover and pull five[15 a, b].

14. A map of Mike Hamer's 13x11' layout, a 1950's rendition of the Boston and Maine that is delightful to view and very enjoyable to operate.





THE BOSTON AND MAINE RAILWAY COMPANY

SWITCHING ORDERS

Location:

N. Dover

Date:

May 27/58

2a

Car Initials/Number	Track Number and Destination
Block traffic for inbound BM train N2 to inbound end of North Siding	
CN 486977	40' Box
PFE 47 497	Reefer
CB&Q 82059	Gondola
ERIE 21203	Covered Hopper
NKP 91067	Covered Hopper

15a, b. There are two switch lists for the Newsboy, B&M train N2. The first is for the North Dover switcher, while the second is for train N2 itself.



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THE BOSTON AND MAINE RAILWAY COMPANY

26

TRAIN ORDERS

Location: Rigby Yard Train: N2 "The Newsboy"
 Date: May 27/58

Drops	Lifts
Slow Order MP 43 New England Marshall	Restriction River Bridge Cut
<u>Set-Outs</u>	<u>LIFTS</u>
BM 75161	CN 486 977
HTCX 1739	PFE 47 497
SHPX 8769	CB&Q 82 059
PM 18881	ERIE 21203
	NKP 91067



16. The first order of business is to use the North Dover switcher #1223 to prepare the cut of cars to be pulled by the Newsboy.



17. These cars are on the north and south service tracks, with the main running between them. They need to be placed in a single cut of cars in the order shown on the switch list.



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18. Mike found some of the cars he pulled in a string on the north siding.



19. Some of the cars on the switch list came from the string on the south siding.



20. Mike placed the final cut on the inbound end of the north track, in the order indicated on the switch list. The cut is now ready for the arrival of the inbound manifest freight, the Newsboy.



21. The next step was to reposition the switcher on the south track. In effect, Mike's mainline track, combined with the two sidings, acts as a small classification yard, allowing the crew of the North Dover switcher to assemble its block of cars.



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22. Now Mike is ready to bring in the Newsboy – a 40-car train headed by a three unit lashup on its trip from Portland to Boston. Here the lead units emerge onto the bridge over the New England River.

 [VIEW READER COMMENTS](#)



23. The Newsboy arrives in North Dover. Mike cuts the train in front of the four cars it is dropping there.



24. Next, he couples his switcher onto the four cars The Newsboy is dropping, and pulls them forward to clear the switch for the north track. He then backs the cut onto the string of cars he prepared earlier for the Newsboy.



25. Mike pulls the entire string forward off the north siding, then backs it up to couple it to the Newsboy. He then uncouples the Newsboy's cars, and marshals the four dropped cars back to the north track. You can see Mike's arm reaching in with the uncoupling pick.



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26. Finally, Mike reassembles the train on the main, and clears it for departure from North Dover for points south. In actuality this lengthy train heads back into staging.

This whole sequence takes almost half an hour, since the movements are made in an unhurried manner. Mike has staged seven trains, so the ops session could go on for a few hours to run through a full sequence of trains (the construction of a plan for an ops session is covered in Part 3). When the local North Dover crew is not busy blocking traffic for inbound and outbound trains, they are kept busy shunting cars to and from local industries. ☑



RATE THIS ARTICLE

DOUG MATHESON



Doug authored a chapter in the OpSIG (Operations Special Interest Group) publication, *A Compendium of Model Railroad Operations*.

Doug has been participating in ops sessions for decades. He has also presented NMRA clinics on ops, organized ops sessions for a number of owners of large model railroads, and served on a model railroad as a dispatcher using Timetable and Train Orders, and on another layout using the Occupancy Control System (Canada's version of Track Warrants). These all fit into the more heavyweight category of prototype-based operations.

At the same time, Doug has built and operates a very modest HO scale layout. He has also long modeled in Fn3 in the garden, including running live steam.

Doug thanks Bruce Chandler for his help in allowing his Jackson and Burke RR to be used as an example and inspiration for this article. N scale modeler Mike Dawson provided insightful comments on operations in a scale where reporting marks are difficult to read. A big thanks also to a number of Doug's fellow members of the NMRA (Niagara Frontier – St Lawrence Division) who offered many suggestions and edits along the way. These include Alex Binkley, Mike Hamer, Chris Lyon, and Peter Nesbitt. In particular, Mike Hamer also allowed his Boston and Maine RR to serve as an example.

Besides operations, Doug's other railroading interests include the history of passenger travel by rail, and the historical development of signaling systems.

Doug retired from Canada's federal public service and lives in a rural area south of Ottawa, Ontario. ■



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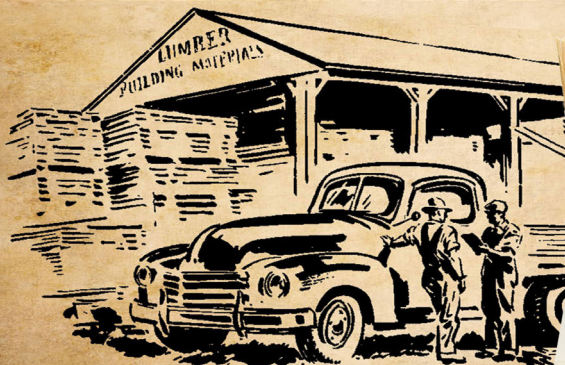
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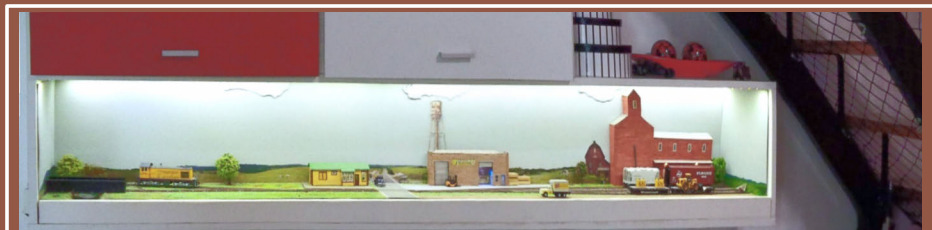
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The Santa Rita mini layout



Model Railroad Hobbyist | January 2021



FERNANDO BELLINI BUILDS A SMALL LAYOUT AS PART OF A STORAGE CABINET SYSTEM ...

I LIVE WITH MY FAMILY IN A SMALL HOUSE IN Buenos Aires, Argentina. Lack of space is a constant challenge, even more so as the kids grow. I love model trains, but this lack of space is a real constraint.

After years of armchair modeling and planning, I finally built a 5'-5" x 3' island-style layout that I could store behind a bookshelf in the dining room. I kept the structures, trees, and vehicles stored in boxes. When I wanted to operate, I would place the layout base on the living room table, set up everything, and play the whole weekend.

I was quite happy operating the layout this way for a couple of years, but then we needed to make changes to the house. We got rid of the bookshelf and, unfortunately, the layout had to go, too. Fortunately, I was able to sell the layout and save the money for the next.



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Since I did not have a dedicated space for a layout or a place to store it, I thought about putting a small layout inside a piece of furniture that would fit with the decor of our house. I found a wall in the dining room where with space for a hanging shelf up to 6'-8" wide.

My wife and I also needed more household storage space, so we came up with a design for a new set of wall cabinets. Our design added storage and fit the decor of the dining room. Most importantly, a shadow-box layout was part of it [1].

CONSTRUCTION

The furniture and walls in the room are red and white, so I decided to build the new cabinets with white $\frac{3}{4}$ "-thick melamine boards. I had them cut to size in the Argentinean version of Home Depot.

I wanted the layout to be on the lowest shelf, and this required some planning. I wanted it to be relatively high and out of the way, but I did not want the top shelf to be out of reach. I decided that the lowest shelf would be five feet from the floor [2].

I made the shelf 6'-8" long by 8" wide for the base of the layout and set the next shelf 10" above it [3]. I spaced each of the other shelves at 8" up [4]. I patterned the length of each successive shelf to match the rise of the staircase [5].

Once I completed the basic shelf structure, I added the doors. I chose a vertical design, with the hinges on top [6]. I used a pneumatic shock system to hold the doors open.



1. Our dining room layout. I chose colors and materials that blended with existing trim.

THE SANTA RITA MINI LAYOUT | 3

2. At 5' off the ground, this lowest shelf will hold the layout.



3. I set the second shelf 10" above the first, which provided me with 2" for the layout benchwork and an 8" ceiling for the layout.



4. I made the remaining two shelves each 8" high. I set the length of the successive shelves to match the rise of the staircase behind them. I used screws to assemble, and drilled pilot holes, which made assembly easy.



5. The completed shelf structure. It matches the rise of the stairway, and the top shelf is reachable.



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6. The doors are in place. I painted them brick-red and white to match the rest of the room.

With shelves and doors in place, it was time to start the benchwork. I used 1" x 1.5" pinewood strips to frame the sides, back, and joists, and a 1"x2" strip for the front to serve as a fascia. I glued them together and reinforced with small screws. The final step was to carve channels into the tops of the joists to accommodate cables [7].

I cut a 1/8" thick sheet of MDF to size for a baseboard. and glued it to the frame, reinforcing it with nails. Once the board was in place, I tested the layout's level with a piece of flextrack and a boxcar [8].

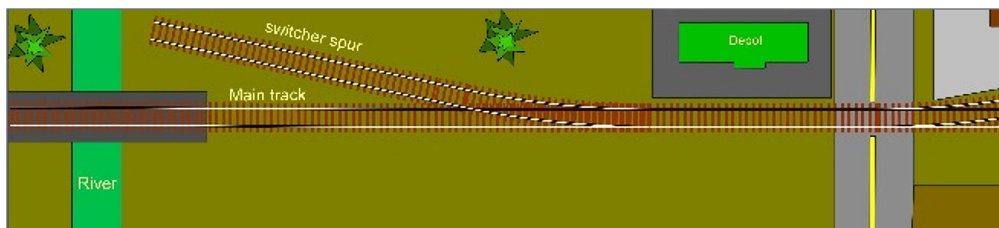
Once I had confirmed that the baseboard was level, I laid 1/4"-thick white foamboard to serve as the layout surface. I used foam-friendly glue, weighted the foam with books, and allowed it to dry overnight [9].

LAYOUT DESIGN AND CONSTRUCTION

With an available space of only 6'-7" x 8", I had to come up with a simple design. Initially, I thought about doing a small switching layout with a runaround but set that idea aside because it would have consumed too much space.

An inglenook design looked like a good option, with one variation. Because there was no space for a runaround, I added a spur at the opposite end of the inglenook to allow a switcher

THE SANTA RITA MINI LAYOUT | 5



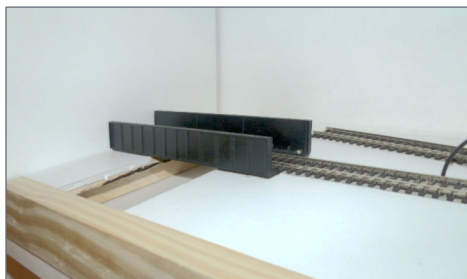
7. The completed benchwork framing. Note the grooves I carved into the the joist tops for wiring.



8. With the MDF board added, the project began to take shape. I tested the level using a couple of flex tracks and a box car. The boxcar didn't move, so the board was level.



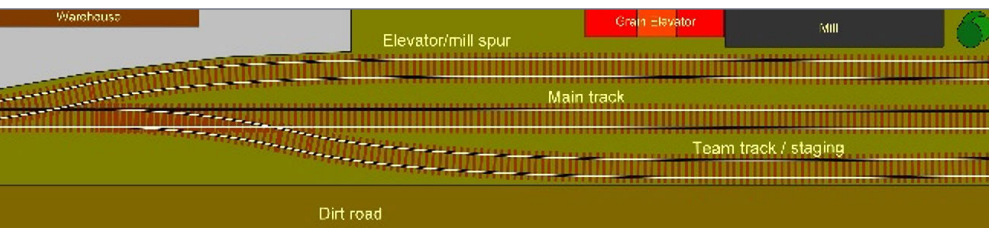
9. I laid 1/4" foamboard over the 1/8" MDF sheet. I chose these thin materials so the layout surface would be below the top of the fascia. I made the cut shown here to model a river under the bridge.



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10. The final design. My goal was to create something simple to make switching moves in a prototypical fashion. This turnout configuration gives more room than the traditional ladder, and allows the main track to be in the center.

to negotiate the job if the incoming train is approaching the turnouts facing the points [10].

“Santa Rita” is the chosen name for my layout and the town it serves. First it is the name of my neighborhood here in Buenos Aires. Second makes a nice fictional town in Southern California.

I chose Peco Streamline code 100 track, since it is readily available locally. I needed only four flex tracks and three turnouts. I used a Dremel rotary tool to cut the flex track to size.

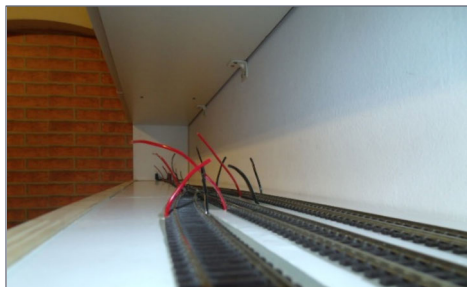
After testing with a discarded piece of flex track and foamboard, I found that gluing the track with white glue and then ballasting was enough to hold it. Laying track is probably the most critical step, so I gave it my best effort. After all, if trains don’t run smoothly, the rest is useless [11].

With the track laid, I was ready to wire the layout. I decided to add feeders to each segment of track to maximize continuity. I attached the feeders and ran them through holes to the underside of the layout.

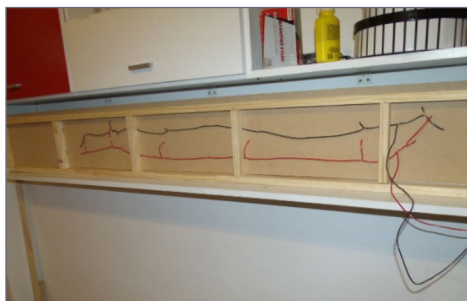
Tilting the layout onto its side, I added two bus wires running the length of the layout, through the groves in the tops of the joists. It was not difficult to access the underside of the layout; I simply had to tilt the benchwork on its side in the shelf and get to work. With the last feeder soldered, I had an operational layout [12].

THE SANTA RITA MINI LAYOUT | 7

11. Track glued to the foamboard and about to be wired.



12. The shelf was tall enough to allow me to set the layout on its edge for easy access to the wiring. Shown here are the rail power buses. Lighting power buses will come later.



13. I cut cardboard the thickness of the ties to size and laid it on the foam. This created the image of buried track.



14. A little ground foam finishes the look of a lightly used, nearly buried branch line.



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15. The Santa Rita depot.



16. The interior of Santa Rita Depot. The furniture are printings from Wentworth model. The rest are real pictures scaled down.



The beauty of my benchwork design is ease of access to the underside. I could add more busses—to light structures, for example—simply by tilting the layout on its side and feeding the wires through the groves. With each pair of buses on plugin connectors, the layout is entirely self-contained and easily movable.

I wanted to model a lightly trafficked branch line with tracks nearly buried in the weeds. I cut pieces of cardboard the same thickness of the ties and laid them over the foam to achieve this look [13]. A coat of light earth-colored paint on the cardboard, plus some ground foam, and the effect was complete [14].

I scratchbuilt all the structures, including a variation of the Southern Pacific depot Tony Thompson presented in the November 2012 *MRH* [15]. It was impossible for me to get the exact windows and doors Thompson used, but a local manufacturer had some that worked nicely. I used wood strips instead of styrene for the construction [15].

THE SANTA RITA MINI LAYOUT | 9

I wanted to light the building interiors. As discussed, I laid a second set of bus lines under the layout to power the buildings. To make the buildings readily removable, I used a plug for each set of wires.

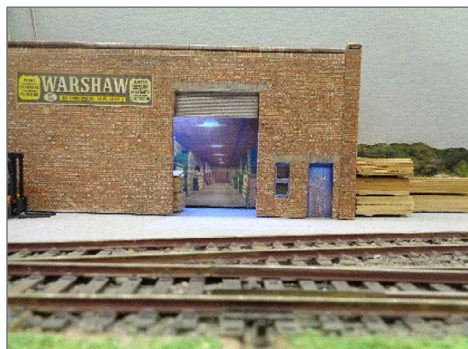
Lighting the buildings meant adding detail and highlights to the interiors. I accomplished this using furniture created from scaled-down photos on card stock. For the station, I accented the walls with photos I scaled and printed [16].

I wanted my main industry to be a grain elevator and a flour mill. I used photos found online and in magazines to create

17. The mill has a lighted interior with printed images. As in real life, not all windows are illuminated. The mill and elevator's corrugated roofs are made of painted and weathered styrene.



18. This warehouse from Scalescenes was the final building. Note the interior and other surrounding detail.



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generic, low-relief models of these buildings using wood strips [17].

The elevator, mill, and station were my first attempts at scratchbuilding. Although they are not perfect, I learned a lot, and am satisfied with the results. I'm already dreaming up future projects.

I completed the layout structures with a low-relief warehouse built of cardboard from Scalescenes, and a bridge over a creek [18]. This was plenty. Living in a crowded city, I liked the idea of looking at an open landscape.

BACKDROP

For the backdrop, I began with cardboard. I cut to size to fit the three back sides of the shelf. I painted it a light bluish-gray and overlaid it with landscape images I found on Google.

I wanted to model a small town in wide-open space, so I looked through quite a few photos to find elements I could use to create forced perspective and the illusion of depth [19]. Once I had the photos, I processed them with Photoshop to stretch the images and adjust their lighting so they blended together.

Finally, to hide the wall brackets, I printed cloud images on cardboard, glued small magnets on the back, and placed them in position.

LIGHTING

Lighting presented another issue to resolve. The top of the layout casts a shadow from the room's lighting. My solution was to light the layout with LED strips [21].

I placed three strips – two warm-white on the front and back for daylight, and one blue in the middle to simulate night lighting. I designed a device to independently control each strip, and added another switch to illuminate the structures [22].

THE SANTA RITA MINI LAYOUT | 11

My original idea with the two warm-white strips was to get an even light and avoid shadows in the background. I discovered that by combining the lights that I had different options to represent different times of day.

19. The road crosses the railroad tracks and passes through Santa Rita, eventually disappearing into the plains in the distance. Forced perspective in different places gives depth to the layout, which is only about 8" deep.



20. To give the illusion that Santa Rita was only one small town on a long branch line, I used the perspective function on Photoshop. It took some effort and several attempts to achieve the right angles for the illusion.



21. I used three LED strips for lighting, two warm-white and one blue. Each strip has an independent switch, giving six different lighting configurations.



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22. Night at the mill. Originally the blue LED strip was too intense, so instead of replacing it, I attached white duct tape over it, giving it a soft quality. Operating at night with this lighting is fantastic!



OPERATIONS

Due to the lighting configuration, I decided the front of the layout would be east and the back west. The trains would run north-south. Trains coming from the north are oriented to do the switching themselves. Those coming from the south need the help of the switcher. There are no hidden tracks or staging, so I have to build the trains on the main track. Generally, trains have a maximum of three cars, sometimes with one or two in transit [23].

Instead of operating randomly, I think it's more interesting to have a work routine. Having a team track is great, since any type of car can be spotted there. I have routines that cover about a week of work. Each "mini session" involves dropping one or two cars and pulling or respotting another one or two. Working at a slow pace takes between 15 to 20 minutes, which is great for my needs. The cars stay in position till the next "day" of operations.

CONCLUSION

For those of us who do not have the luxury of a devoted room, it can be a challenge to design a layout that does not look like an intrusion in the room. A shadow-box layout like mine offers the opportunity to integrate a layout with the aesthetics of the house. This allows me to have and enjoy a layout for now, rather than just dream about a future layout I can't have yet. ☑



23. A typical train arrives with a single engine and three cars, ready to do some switching.



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FERNANDO BELLINI



Fernando started in the hobby at the age of four when he received an AC Märklin train set. Later in his childhood, he switched to DC with an eclectic mix of European and American trains.

Fernando left the hobby at age 14 but resumed 11 years ago, aiming to play with his kids. Soon he got hooked again and decided to take it seriously, modeling only American trains.

Fernando lives in Buenos Aires, Argentina with his wife, two kids, and a rescued greyhound. He teaches mathematics and physics. He also plays bass with his country music band, No Bull. ■

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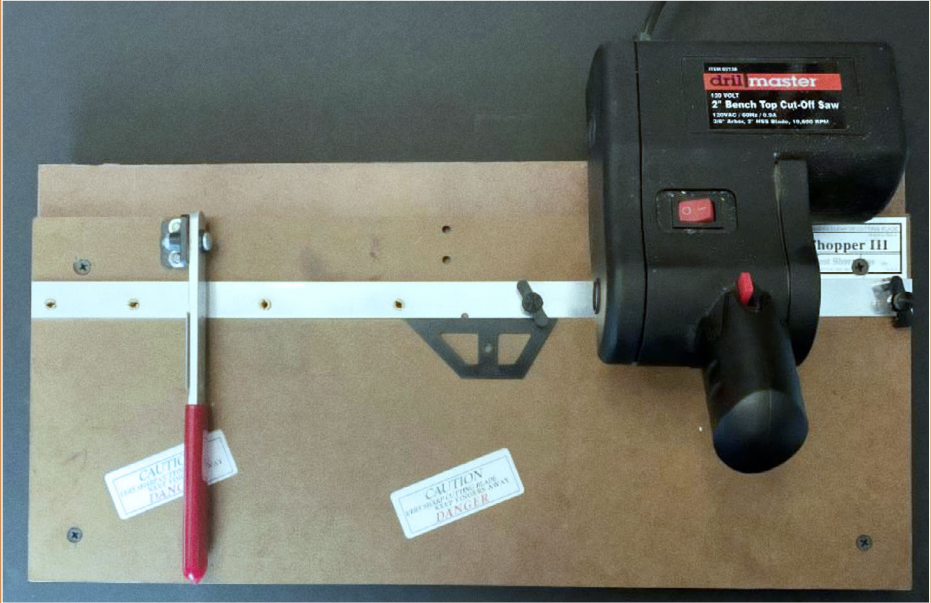


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Hobby chop saw



Model Railroad Hobbyist | January 2021

JEFF PALMER BUILDS A
DESKTOP HOBBY CHOP
SAW...



THERE ARE VERY FEW TOOLS I USE MORE THAN THE NWSL Chopper. For repetitive cuts, it's my tool of choice [1]. As a tool junkie, I have all three versions.

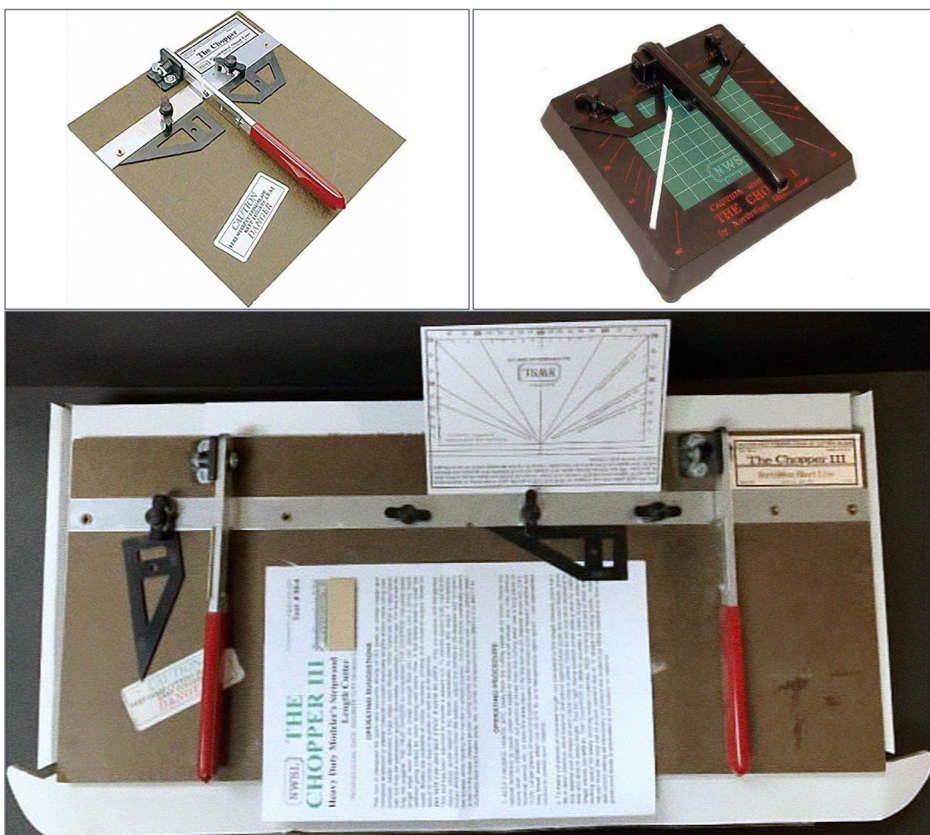
While my Choppers have cut thousands of pieces of scale lumber over the years, they have all had the same deficiency: blade deflection. As long as I was cutting 1" and 2" scale lumber, they did a perfect job. However, when I needed to cut 4x4s,

HOBBY CHOP SAW | 2

6x6s, and the dreaded 8x8s and 12x12s, the thin razor blade would deflect, ruining the square cut.

At first, I didn't notice my cuts were slightly off, but when I built my first trestle bridge, the pilings did not mate properly. The posts did not match flush to the cap. That started me looking for what I was doing wrong.

As I looked closer at the cut, I noticed the cut was not a true 90°. It was at a slight angle, and even curved a little. The blade was deflecting, as it cut through heavier material.



1. Clockwise from top: NWSL's The Chopper, The Chopper II, and The Chopper III.



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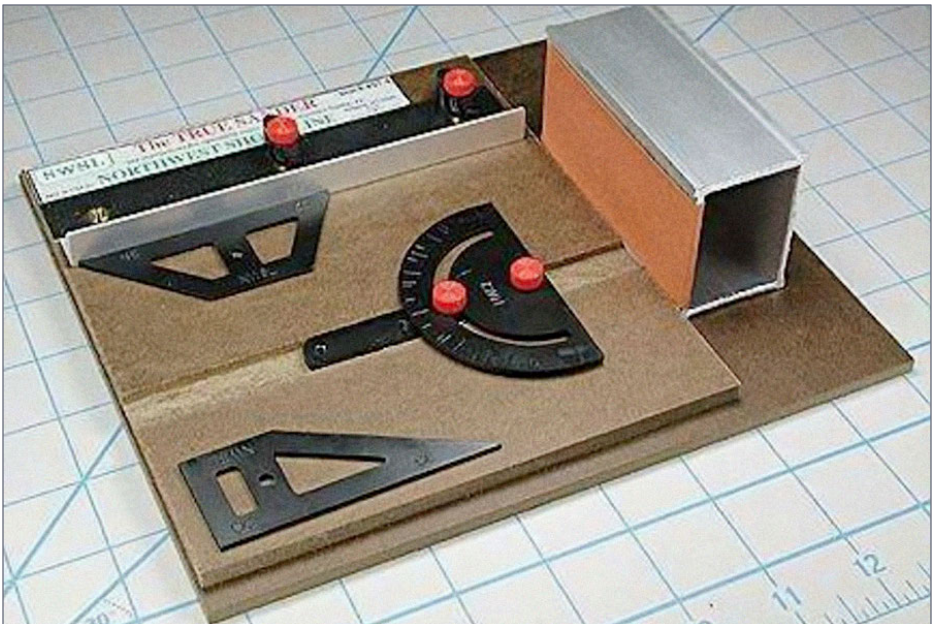
HOBBY CHOP SAW | 3

As I researched the issue, I found that blade deflection was a known issue, primarily due to the thinness of the razor blade. The solution was either to use a guillotine Chopper or to replace the razor blade with a heavier knife-type blade.

Each of those solutions had its problems. Since I wasn't into re-engineering the Chopper, and it wasn't off by much, I opted for a different solution, the NWSL True Sander [2].

I used the True Sander to square-up the cut just made by the Chopper. It worked well. With a couple of quick swipes on the freshly cut end, it was square.

I happened to be browsing the power tool section of Harbor Freight when a small device captured my imagination. The Drill Master bench-top cut-off saw had a 2" blade, and was designed to make precision cuts in wood, metal, and plastic. In theory, this could be just the solution I was looking for [3].



2. The NWSL True Sander cleans up the mess the Choppers leave behind.

HOBBY CHOP SAW | 4

I examined a display model of this tool more closely. As I turned it over in my hand, it felt solid, but it was designed to cut one thing at a time (notice the vise) and not very quickly. I like the convenience of the Chopper, where I can set a stop and make repetitive cuts quickly, and though the saw would not have the same deflection issues, I did not want to sacrifice the convenience.

Still, I was trying to mentally turn this cut-off saw into a mini chop saw. The chop saw in my garage is one of my favorite tools for home repairs and projects. I had seen a hobby chop saw in Micro Mark's catalog that looked very similar, but at twice the price. I decided to gamble that I could somehow marry the cut-off saw to my Chopper III to create a hobby chop saw.

A few notes before we get into the project:

- Be sure to use furniture-grade plywood. Its smooth surface will make precision adjustments easier than rougher wood.



3. Could this bench-top cut-off saw be a chop saw?



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HOBBY CHOP SAW | 5

- Have all tools and materials you'll need before starting the project. Mid-project runs to the hardware store are distracting and time-consuming, and for a tool junkie like me, they also can be expensive.
- Read and familiarize yourself with the operating safety rules and instructions for the cut-off saw.

Open the cut-off saw box to find two plastic bags and a set of instructions. Put the smaller bag containing the bench clamp and Allen wrench back into the box. You'll need the Allen wrench and the instructions later on, especially when you need to replace the saw blade.

First step is to remove the vise. To do that, flip over the saw and locate the adjustment nut [5]. Holding your hand underneath the nut, and turn the adjustment knob counterclockwise until the nut drops into your hand.



4. The cut-off saw is fresh from the package.

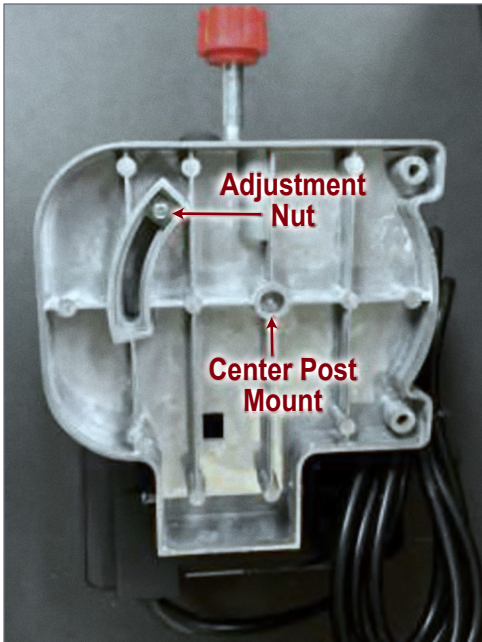


HOBBY CHOP SAW | 6

Set the cut-off saw on your workbench and pull the adjustment knob straight up to remove it from the vise. Thread the nut back onto the adjustment knob screw so nothing gets lost, and set it aside. At this point, the vise is loose, so lift it straight up and set it aside [6].

Next, we need to turn our attention to the NWSL Chopper III, which will supply the table for our project. The first step is to remove the Chopper arm. While it is possible to place the saw such that removing the arm is unnecessary, I found the razor blade's existing notch and groove helpful in lining up the saw blade[7].

Flip the Chopper over and unscrew the arm's two mounting screws [8]. I removed the Chopper arm, rethreaded the screws into its base, and set it aside.



5. The underside of the cut-off saw.



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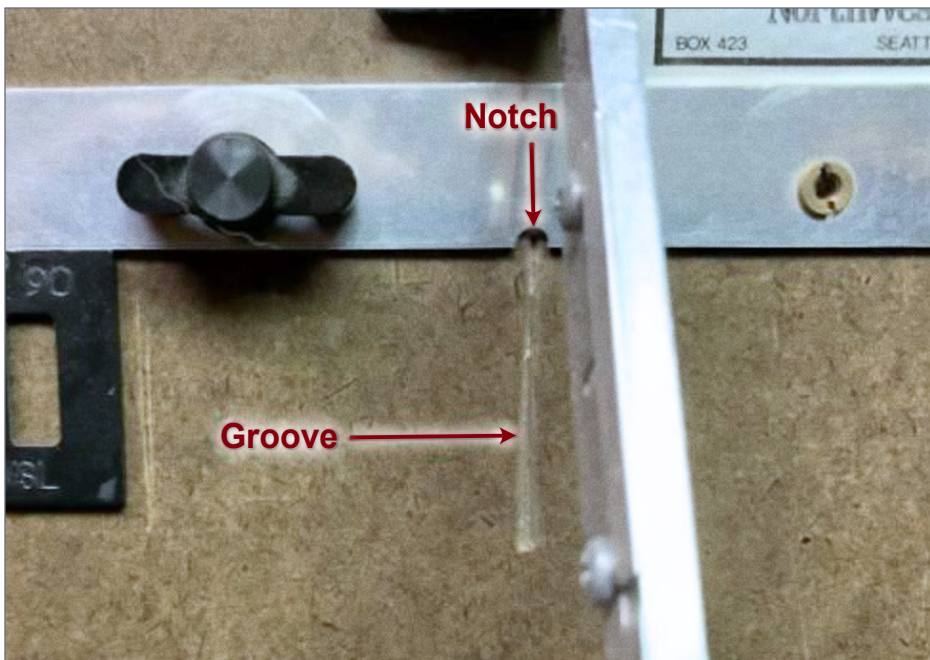
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HOBBY CHOP SAW | 7



6. Cut-off saw with the adjustment knob and vise knob removed.



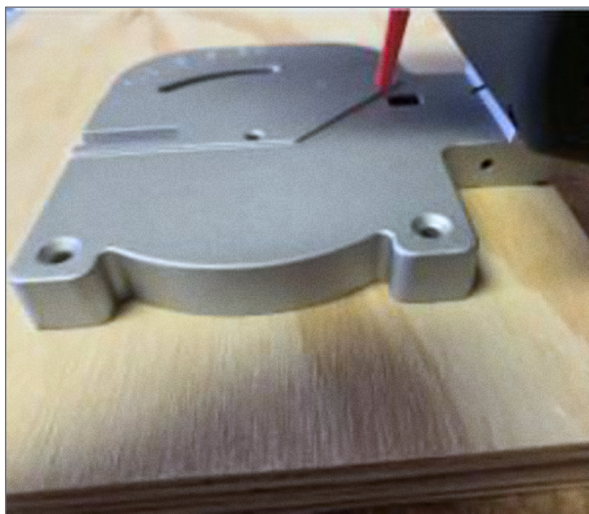
7. The notch and groove for the Chopper III.

MEASURING THE PROJECT

The Chopper III table will form the tabletop for our project, which will consist of three layers. The middle layer – I call it the cradle –



8. These are the mounting screws on the bottom of the Chopper III that need to be removed.



9. I aligned the cut-off saw's back with the rear edge of the plywood base.



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will be a piece of $\frac{3}{4}$ " plywood with a cutout to house the base of the cut-off saw. The bottom layer will be a piece of $\frac{1}{2}$ " plywood. My goal was to align the cut-off saw so the saw blade would use the same notch and groove as the Chopper's razor blade.

To accomplish this, I needed to determine the throw (distance from pivot point to blade) I would need for the cut-off saw vs. the Chopper III. Since both the Chopper III and the cut-off saw had their respective pivots on their back edges, the throw is the determining variable between the two.

I found that the throw of the cut-off saw is $1\text{-}1/16$ " longer than the throw of the Chopper blade. If the Chopper III table's dimensions are $18" \times 7\text{-}5/8"$, then the plywood for the base and cradle for the chop saw project should be $18" \times 8\text{-}11/16"$.

The next step is to position the cut-off saw along the back of the base so that its blade, when lowered, will match the groove of the Chopper. The measurement from the groove to the edge of the cutting surface is $3\frac{1}{2}"$. Using these measurements, I cut a piece of $\frac{1}{2}"$ plywood to $18" \times 8\text{-}11/16"$ and maneuvered the cut-off saw along the back edge until I had the blade $3\frac{1}{2}"$ from the edge [9].

To make this measurement, I used a machinist's square butted up to the side of the plywood base, and a ruler – a good tape measure will do the trick, too – to find where to place the face of the cut-off saw blade. Make sure that the back of the saw is aligned to the back edge of the plywood base. Once everything is aligned, use a pencil to outline the cut-off saw's position on the baseboard, but do not mount it yet.

CREATING THE CRADLE

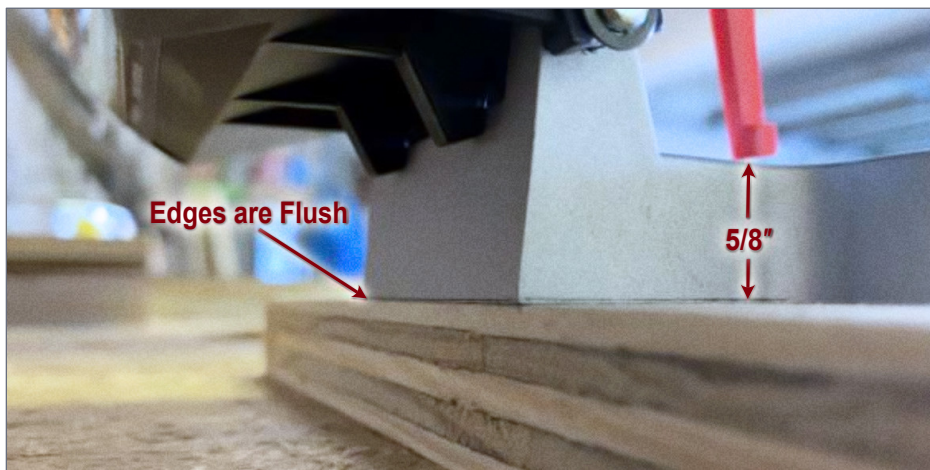
The metal base of the cut-off saw is $5/8"$ thick [10]. My local Home Depot does not carry $5/8"$ plywood, so I used $3/4"$ plywood, and I cut an $18" \times 8\text{-}11/16"$ piece for the cradle. Next, repeat the process used for the base, position the cut-off saw,

moving it along the back of the board so that the blade is $3\frac{1}{2}$ " from the edge. Draw the saw's outline on the cradle [11].

This time, we're going to cut out the outline with a saber saw. I used a $\frac{1}{2}$ " drill bit to drill four holes close to the corners where the jigsaw would have to make a turn. I opened up the 2" cut using my radial arm saw. I wanted this cut to be a little more precise, to help secure the cut-off saw.

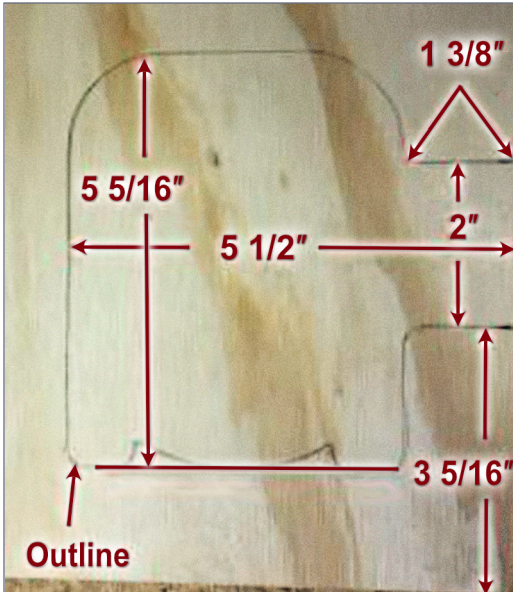
After establishing the precise 2" opening with the initial chop saw cuts, clamp the board to the work surface and cut the rest of the outline with the saber saw. I found it more effective to square off some of the edges, rather than attempt to follow every curve[12]. So long that the 2" opening is precisely cut, it will be sufficient to hold the cut-off saw's base snugly.

With the cradle in place, it's time to align the cut-off saw blade, but first a slight modification is needed to the Chopper III table. Cut a slot at least $\frac{1}{4}$ " wide in the top (above the guide rail), $4\text{-}3/8$ " from the right-hand edge to accommodate the cut-off saw's safety lever [13].

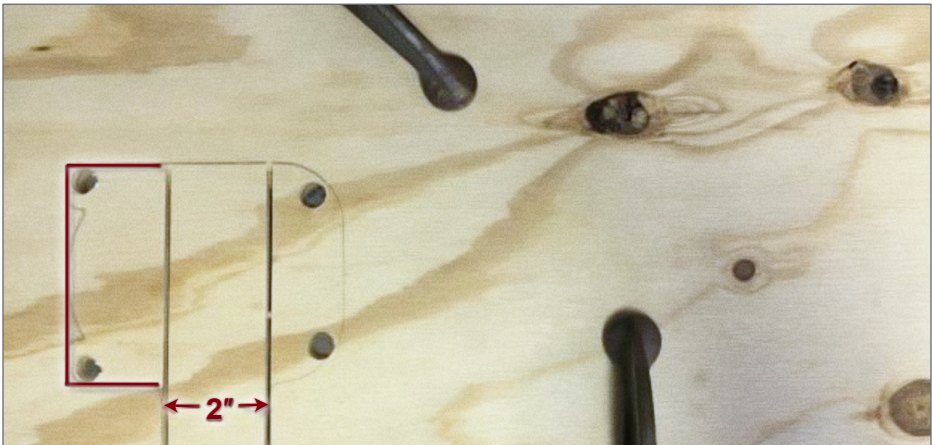


10. The cradle layer must be deep enough to house the $5/8$ " base of the cut-off saw.





11. The cut-off side is outlined on the cradle board, ready for cutting.



12. I used a chop saw to precisely cut the 2"-wide opening for the cut-off saw. It was not critical to follow the rest of the cut-off saw's outline exactly, and I found it worked better to square-off some curves, as outlined in red.



13. A $\frac{1}{4}$ "-wide slot cut about 4-3/8" from the right edge of the tabletop.

PUTTING IT ALL TOGETHER

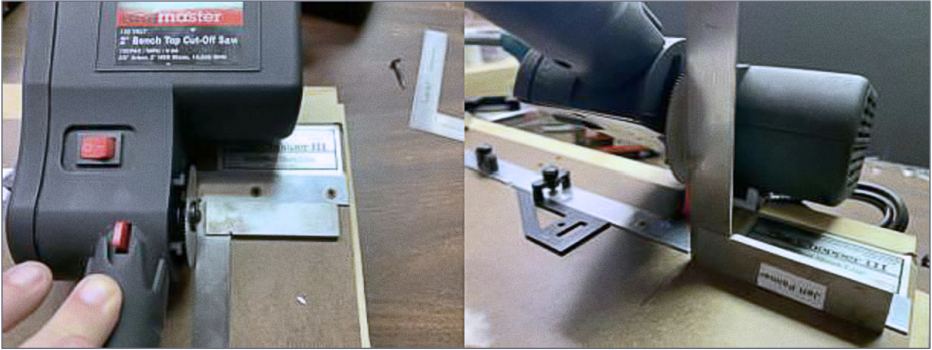
With that, it's time to do a test assembly – without screwing or gluing together – and align the blade. Take your time and align the base, the cradle, and the Chopper surface so that all the edges line up. Any issues will likely require adjustment to the cradle.

With everything in proper alignment, remove the blade shield. To do that, put your thumbs on the bottom of the shield, front and rear, and push up. The shield should slide right off, but be careful not to apply too much force [14].

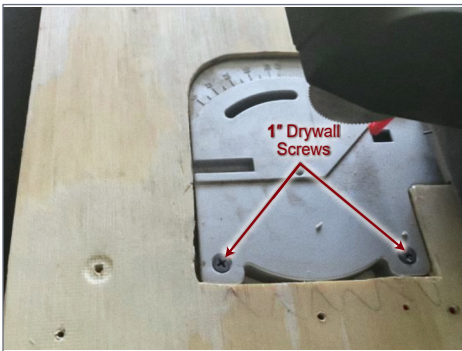
“Trim and try” by trimming the cradle. Use a file or rasp until the saw is correctly positioned. Once the blade is square, remove the Chopper table and use 1" drywall screws to mount cut-off saw to the base. Drywall screws are self-tapping and hold well [15].

Early testing revealed that in order to make a clean cut, I was cutting through the $\frac{1}{4}$ "-thick Chopper III table. To provide extra protection and clearance, I added an extra 3/8" Masonite board between the cradle and the Chopper III table [16].

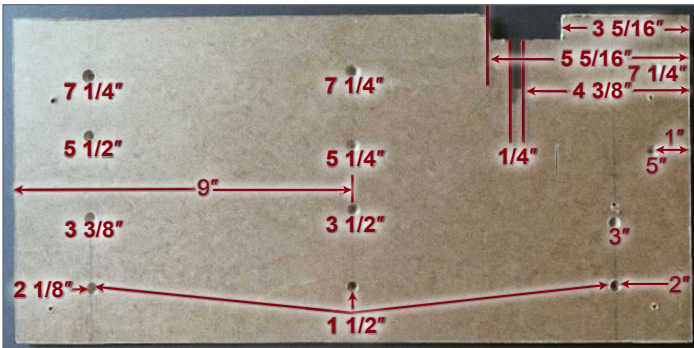




14. Checking the table and saw blade alignment.



15. Mount the cut-off saw to the base with drywall screws.



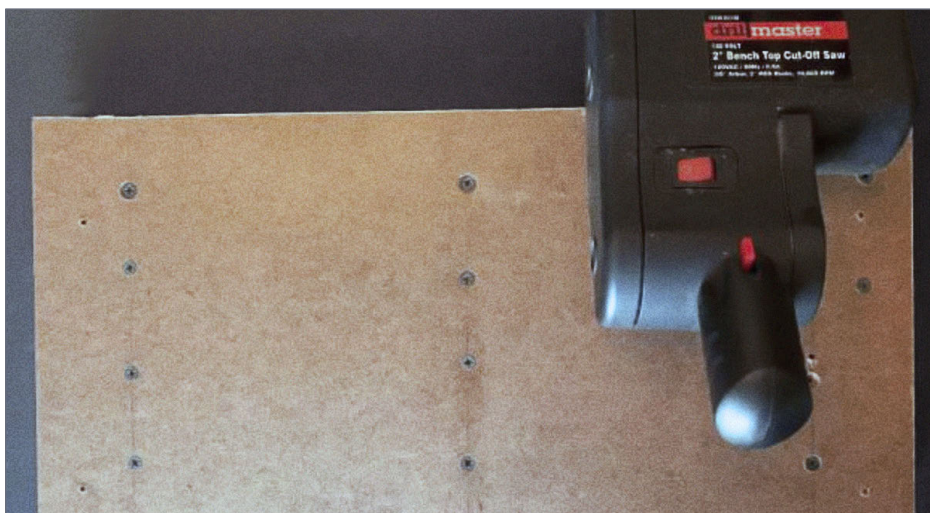
16. A supplementary Masonite spacer board between the Chopper board and the cradle reinforces the Chopper board and provides a hideaway for screws. Note the drilling pattern.

I also found this “spacer” board useful for holding the main assembly together. I clamped the boards together and used a 5/64 drill bit with a #5 countersink to drill pilot holes in the pattern shown in [16]. I installed a dozen 1-1/4” drywall screws to connect all three layers.

While I might have gotten away with fewer screws, it was minimal effort and cost to over-build. Note that if you should change the pattern, there are three critical screws on the right-hand column. Remember that the steel foot of the cut-off saw is just underneath that top layer of Masonite, and it will not drill well.

It is critical that all screws are flush or even slightly below the surface of the Masonite. You should not feel a screw head if you run your hand across the top of the spacer board. Adjust your screws and countersinks as needed [17].

Once the spacer layer is secure, slide the Chopper III table onto the assembly and secure it. Using the same countersink and drill bit used on the spacer, drill four holes 1-1/8” from each



17. The dozen screws must be flush with or below the surface of the spacer layer to accommodate the Chopper III table properly.



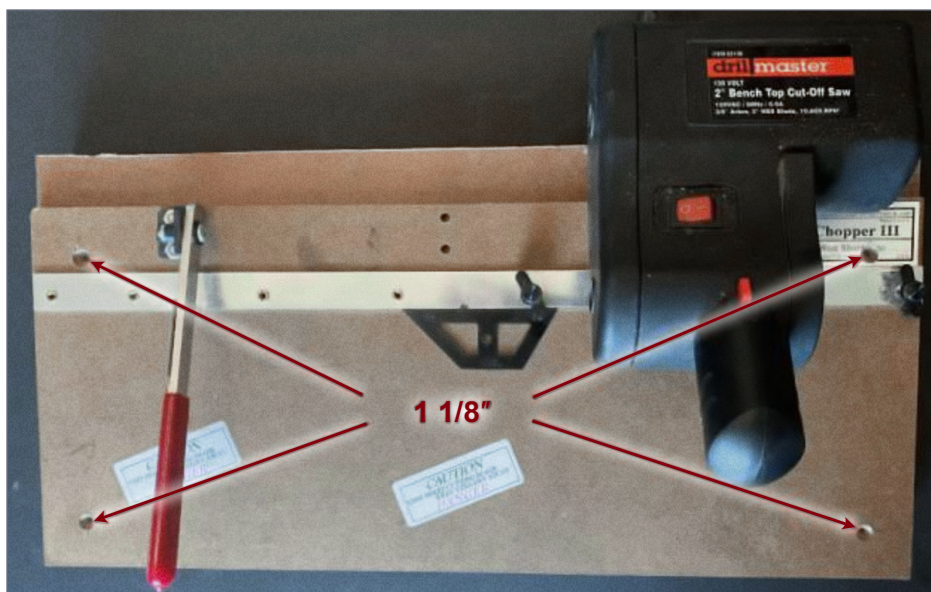
HOBBY CHOP SAW | 15

edge, as shown in [18]. Complete the assembly with 1" Drywall screws.

One more feature I added to my new hobby chop saw was a stop screw to prevent the saw cutting too deeply into the table or hitting the metal guide rail on the Chopper III. Use a ½" #6-32 machine screw. Screw the machine screw into the brass guide holder and turn to adjust the height. Once properly adjusted, use Thread Lock to prevent further movement [19, 20].

This saw has come in handy while building several dozen structures. It has been friend tested. I hope yours will serve you as well. I'm looking at the Micro Mark version, which has a blade guard. I'll keep you informed. ✓

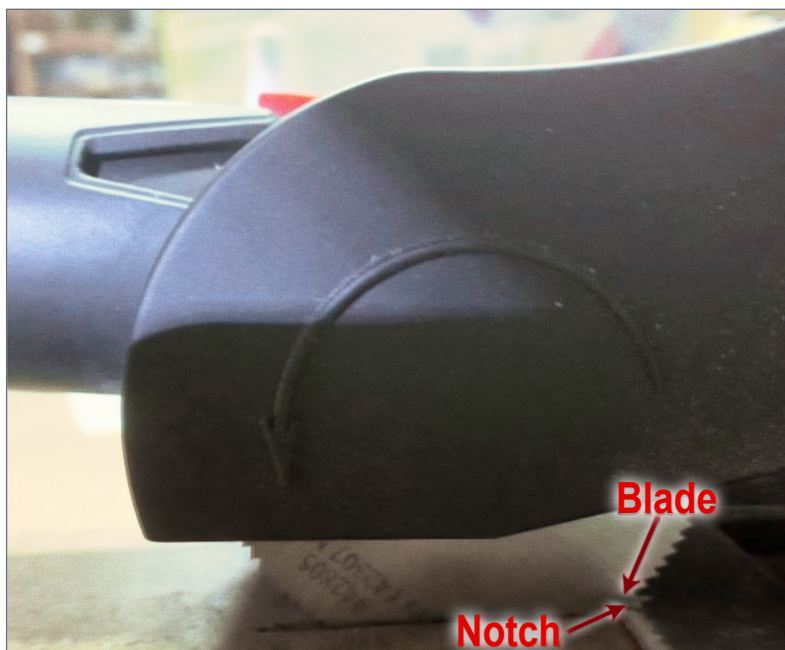
See the following pictures on the next page ...



18. The four assembly screws should be 1-1/8" from each side, in the corners. Note that the second NWSL Chopper arm remains intact, so this tool offers the best of both worlds.



19. The stop screw is in place, with Thread Lock cementing its position.



20. The saw blade should lower far enough for a complete cut, but not so far that it makes contact with the guide rail on the Chopper III base or the saw's own metal base.



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21. This completed chop saw will make repeating cuts a cinch.



RATE THIS ARTICLE

JEFF PALMER



Until Jeff retired, he spent 50 years developing software, and 25 years as a college professor.

His interest is in logging and mining with narrow gauge.

About two years ago, he earned his MMR (Master Model Railroader) certificate from the NMRA. During that journey, he had the privilege of meeting many of the modelers he looked up to. His goal is to be recognized in this group someday. ■



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SAVVY MODELER *Online*



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Model Railroad Hobbyist | January 2021



A scratchbuilders approach to tracklaying

Youtube model railroader **Michael Eldridge** shows the steps he follows to handlay his track, complete with tie plates and spikes on every tie! If you want to treat laying your track similar to how you scratchbuild any other model, then this is how you do it.

While this tedious approach to hand laying your track may not be for everybody, Michael notes he particularly enjoys this part of the hobby. ■



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JANUARY NEWS

column



Model Railroad Hobbyist | January 2021

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



IN MEMORIAM

John Arthur Glaab 1940—2020

John Glaab, internationally recognized expert on brass railroad models, passed away from Covid 19 on December 1. Following his retirement from NASA as a space flight project manager, John established Peach Creek Hobbies in Silver Springs, MD. He developed the shop into one of the largest brass dealerships on the Eastern Seaboard. In addition to brass, Peach Creek specialized in steel mill modeling, a reflection of John's heritage in the steel mill country of Western Pennsylvania. John wrote numerous articles about brass models. He co-founded *Brass Modeler & Collector* magazine with Jack LaRussa, and in 1994 authored the second edition *The Brown Book of Brass Locomotives*. During the late 1990s John wrote a monthly column about brass in *Rail Line News*. John was also an expert on the Chesapeake & Ohio Railroad and was a former president of

THE LATEST MODEL RAILROAD PRODUCTS, NEWS & EVENTS

the C&O Historical Society. John and his late wife, Christine, were both railroad buffs. They maintained a vacation home near the Cass Scenic Railroad State Park in West Virginia, the home of several operating Shay locomotives. They became involved in the local community and established a scholarship fund for the master's library science program at the University of Maryland.

CLUB CARS



The **Burlington Route Historical Society** is selling both HO and N scale versions of CB&Q 40' PS-1 boxcar No. 37000. The prototype was

built by Pullman-Standard in 1948. The N scale ready-to-run model was produced for BRHS by Micro-Trains. The HO scale model is an Accurail kit. For additional information visit burlingtonroute.org/store.



The **Soo Line Historical and Technical Society** has an HO scale kit for an 11-panel 41' 5" steel gondola with three different

decorating schemes. The model represents cars built by American Car & Foundry in 1953. The kit, produced for SLH&TS by Accurail, is available in the original Duluth South Shore & Atlantic scheme (above).





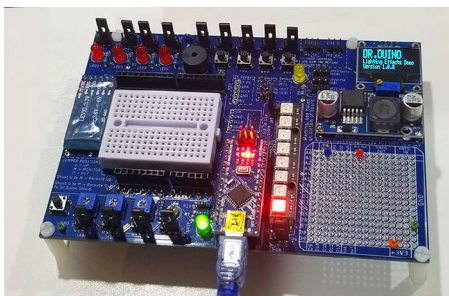
Soo inherited the gondolas in 1961 and repainted them as their own while retaining the car number.



In the mid-1970s some of the aging gondolas were given COTS panels and repainted with bolder reporting marks. For additional information

visit <https://www.sooline.org/Models>.

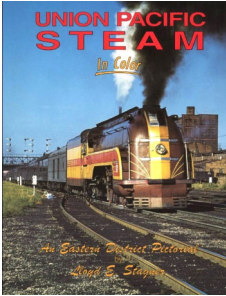
NEW PRODUCTS FOR ALL SCALES



Innovative Electronic Solutions has introduced the Dr.Duino Explorer – Model Railroad Edition. Tailored for model railroaders, the Dr.Duino enables testing and automating model railroad accessories in one Arduino

uno and nano compatible kit. Hardware and software is included to build turnout controllers, perform block detection, and create lighting and sound effects. Membership to Dr.Duino's Labs is included with purchase. For more information visit www.DrDuino.com/MRH.

Morning Sun is selling a digital reprint of *Union Pacific Steam in Color*, by Lloyd Stagner. The on-line PDF publication focuses on steam power from 0-6-0s to Big Boys on the historic



Eastern District of the Union Pacific. Steam expert Lloyd Stagner narrates the story of a steam stronghold from class to class, taking the reader through more than 200 in-service photos in yards and on the road. For additional information visit morningsunbooks.com.



Motrak Models is selling a kit for a wall mounted rack with shelves sized for Vallejo 1.35 oz. paint bottles. Construction is pre-cut 1/8" thick Masonite hardwood. The assembled rack measures 10.75" wide x 12.75" tall x 2" deep. It will hold 21 Vallejo bottles.



Motrak is also producing a spray can paint rack, designed for 3oz spray cans. Holding up to 12 spray cans, the rack is made of 1/8" Masonite hardboard and measures 10.25" x 12" x 4". For additional information visit motrakmodelsusa.com.



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O SCALE PRODUCT NEWS

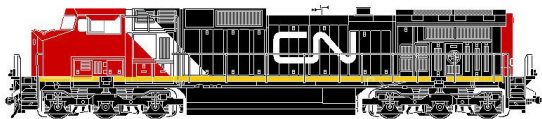


Image Copyright 2002 by R. Ruesch, Engine Shop

3rd Rail Division of Sunset Models has started taking reservations for a General Electric Dash-

9 for delivery in 2021. Roadnames announced include Santa Fe Warbonnet, BNSF, CNW, Canadian National, Norfolk Southern, Southern Pacific, UP, and GE Demonstrator. The models will come with ABS bodies with fixed pilots, full cab interior, 5-pole can motor, and ball bearing axle journals. Both two -and three-rail versions will be built, with the two-rail version featuring ESU Loksound 5 DCC with dual speakers and the three-rail model equipped with ERR Cruise, TMCC, and Dash-9 specific Railsounds. Models will be built to reservations only. For more information visit www.3rdrail.com.



Atlas O has released a group of PS-2 triple-bay covered hopper cars. The Atlas Trainman series model is based on a prototype introduced by Pullman-

Standard in 1952. The O scale model features roller-bearing trucks with rotating bearing caps, separately applied ladders, and brake line detail.



Road names are Chicago & North Western, Illinois Central, Burlington Northern, Penn Central, Chessie System, and

Jack Frost. An undecorated version is also available. All Atlas

0 models are available for either 3-rail or 2-rail operation. For additional information contact a dealer or visit shop.atlasrr.com.



Dwarvin has introduced an 0 scale RR Crossing Signal designed to be used with the Lamplighter FL animation unit. With a single flashing face, it comes with 5' of 1.5mm fiber optic attached to it. The crossing signal is 6 5/8" tall. For more information visit www.dwarvin.com.

S SCALE PRODUCT NEWS



BPH Enterprises has introduced SceniKing® Roll Outs for S scale. Roll Outs are digitally-printed, inter-connectable photo backdrops. Fifteen different scenes, 6' long by 16 1/2" in height, have been designed exclusively for S scale. The scenes are printed on glare-free 24-pount paper using long-life inks. Trackside structures are S scale with some including loading docks as trackside industries. All scenes connect with a 1/4"



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seamless overlap. The Roll Outs are available from sceniking.com.

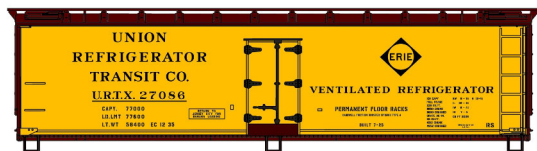


Monster Modelworks has released a new S scale kit named Machine Works. The craftsman kit is based on a brick building constructed in 1850 in Enfield, CT. It was occupied for over 60 years by the Hazard Powder Company. The kit includes a stencil to achieve the signage shown

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, and sign stencils. The assembled kit has a footprint of 5.75" long x 5.5" wide. The structure is 4.7" tall. For additional information including ordering instructions visit www.larkspurlaserart.com.

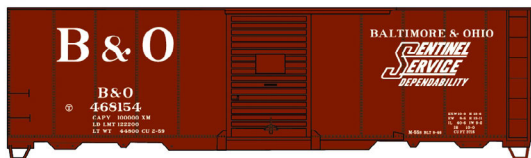
HO SCALE PRODUCT NEWS



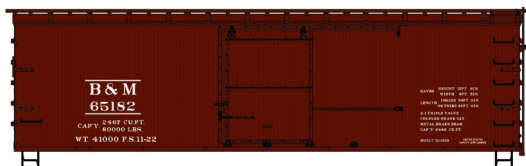
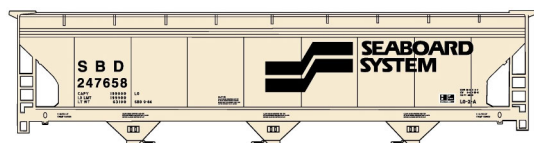
New HO scale freight car kits from **Accurail** include this Union Refrigerator Transit Co./Erie/URTX 40'

ventilated wood refrigerator car. The U.R.T.X. decorating

scheme is based on a prototype that went into service in July 1925.



with the 8' door and Time Saver Service Slogan.



Accurail has released a 3-car set of 40' AAR boxcars decorated for the Baltimore & Ohio Railroad. The cars were built in the late 1940s with 6' Youngstown sliding doors. The second illustration is the model

This Seaboard ACF triple-bay covered hopper is based on a prototype built in 1984.

Accurail's HO scale kit for this Boston & Maine 36' boxcar represents a double-sheathed car built in 1913 with wood ends and National sliding doors.



The prototype version of this Vermont Railway 50' welded steel class XL boxcar was completed in February 1956.



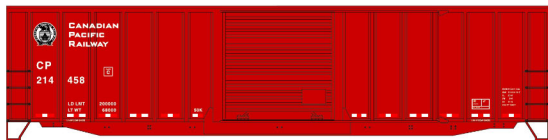
Accurail's HO kit for this Agri-Grain Processors car is based on a Pullman-Standard 4750 cu. ft. prototype.



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Canadian Pacific applied conspicuity marks to their 50' plate C exterior-post welded boxcar. All Accurail HO

scale kits include Accumate knuckle couplers and appropriate trucks with Delrin wheelsets. For additional information contact a dealer or visit www.accurail.com.



R. Bale

EMD GP9 DIESEL

In 1954 EMD boosted the horsepower of its GP7 from 1,500 to 1,750. Dubbed GP9, the appearance of the new locomotive was the same as its predecessor. Later production units had variations in the arrangement of the louvers, and fans. The GP7 and GP9 were both reliable workhorses and many railroads found it more economical to upgrade them rather than purchase new locomotives.



December 2021. Leading the list of road names is a Canadian Pacific GP9 equipped for passenger service with a large water tank to supply a steam generator, high mounted air tanks, and full footboards.



A Santa Fe unit dressed in a modified Yellow Bonnet scheme is fitted with a spark arrestor and can-type radio antenna.

Athearn is working on a group of HO scale Genesis Series GP9s for release in

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Athearn's Toronto, Hamilton & Buffalo GP9 represents equipment from the

1960s and 70s with roof mounted air tanks.



Athearn's HO scale version of this Louisville & Nashville GP9 includes

gyralights. In later years the rear gyralight was removed. Athearn will include a blanking plate with the L&N unit for hobbyist who want to model this variation.



This 1970s-era Boston & Maine GP9 features grab irons

on the pilot and footboards and dual air horns.



Athearn's Union Pacific GP9 is based on a Phase III cab unit with

dynamic brakes, a roof mounted cab vent, and a winterization hatch.



A Union Pacific Phase I B-unit will be included in this run. UP's fleet of

75 Phase I GP9B units were built in the spring of 1954 and remained in service until the mid-1970's.

Athearn's next production of the Veranda Gas Turbine engine with a tender will be equipped with additional lighting over previous releases. A separately controlled Mars light, an



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emergency stop "big hole" light, classification lights, number boards, and backup light will all be included in the December 2021 run. The HO scale Genesis model will have a Soundtraxx Tsunami2 gas turbine sound decoder with two speakers installed.



Athearn is upgrading its HO scale Pullman-Standard 2893 cu. ft. covered hopper and

will release it as a Genesis model next December. Details will include separately applied round roof hatches, a photo-etched metal roof walk, wire grab irons, individually applied brake appliances including wire brake plumbing, detailed discharge fixtures, and rubber trainline hoses. Depending on the practice of the specific prototype being modeled, the cars will have either solid or roller-bearing trucks with 33" nickel silver wheels.



In addition to Santa Fe, road names will be Baltimore & Ohio, Central of Georgia,

Chicago & North Western, Great Northern, Pittsburgh & Lake Erie, and Southern Railway.



Athearn's Southern Pacific SD40R represents a group of aging

diesels rebuilt in the 1980s. Upgrades included an L-window cab, a large EMD plow, additional dynamic brake vents, and a ratchet brake in the nose. The gyalights were removed and blanked out. Athearn plans to have two road numbers of the SD40R ready by late 2021.

Two similar Morrison Knudsen rebuilds designated SD40M-2 are also in this release. The MK units will have alternating front ditch lights, vapor type air conditioning units, a large EMD-style plow, and MK trucks with Timken roller bearings.



Spotting details of the Santa Fe's rebuilt SD40 diesels include a nose

mounted headlight, a Prime air conditioning unit on the cab roof, and ATSF-style roof mounted antennas.



SD40 locomotives upgraded to the SD40-2 standard by CSX will be

available in four road numbers.



Athearn will include three Utah road numbers in this production

run. The ex-C&O and MW SD40M-2 units rebuilt by Morrison Knudsen for the Utah Railway had small EMD pilot-plows, ditch lights in the front only, and a brake wheel mounted at the rear of the locomotive.



The three FURX (First Union Rail) SD40-2s in this release are based

on SD40 rebuilds with mixed heritages. FURX No. 3001 is an ex-SOO unit with a smaller 3600 gallon fuel tank, a large EMD plow, and deck mounted front ditch lights. FURX No. 3025 is an ex-MP locomotive with a large 4000 gallon fuel tank, a small EMD plow, pilot-mounted front ditch lights, and MP-style jacking pads. Ex-NDM No. 3005 also has a large 4000 gallon fuel tank and pilot mounted front ditch lights. It will have a Canadian-style pilot/plow.



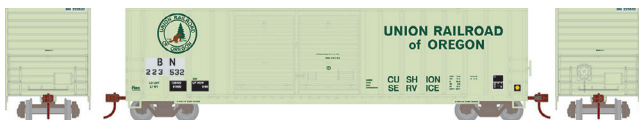
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All versions of Athearn's SD40 models will have bi-directional LED lighting, photo-etched windshield wipers, wire grab irons, uncoupling levers, rubber MU hoses, see-through dynamic brake and radiator fans, and Flexicoil-C trucks. Sound equipped SD40s will come with an Econami sound decoder by Soundtraxx. Non-sound versions will have a 21-pin NEM DCC-ready plug.



Athearn has included an FMC (Food Machinery Corporation) 50'

boxcar in its December 2021 production schedule. The Ready-to-Roll model is based on prototypes built in the 1970s with outside posts and non-terminating ends. Athearn's HO scale version has double doors offset from the center of the car.



Some of the models will be decorated in Athearn's Primed

for Grime schemes and will show their heritage. Road names in this run will be Burlington Northern (ex-Galveston Wharves), Burlington Northern (ex-Union Railroad of Oregon), Burlington Northern (ex-East St. Louis Junction Railroad), Arcata & Mad River, Sierra Railroad, Yreka Western, and three schemes for Northern California shortlines. The models feature a separately applied brake wheel, grab irons, and end ladders; photoetched cross-over platforms, and machined metal wheelsets.



A group of bathtub gondolas with

removable coal loads is included in Athearn's December 2021 production schedule. Road names for the HO scale Ready-to-Roll models will be OWTX-Oneida Western, CP Rail, Union Pacific, Sullivan Scrap, Utility Fuels, CarMath Inc., and three schemes for David J Joseph Co.



Athearn is including a Roundhouse Brand 40' high-cube outside braced boxcar in its December

2021 production schedule. The economy priced models will have appropriate trucks with machined metal wheels. Road names will be SSW Cotton Belt, Arizona Eastern Railway, Burlington Northern, Penn Central, Southern Pacific, Southern Pacific/GVSR, and Golden West Service. For additional information on Athearn or Roundhouse products contact a dealer or visit www.athearn.com.



Atlas has released its Master Line GP40-2 diesel locomotive to dealers. The new HO scale model is available decorated for Burlington Northern, Canadian Pacific, Boston & Maine, Conrail, Florida East Coast, Norfolk Southern, and CSX.



Features include directional lighting with golden-white LEDs, detailed cab interior with crew, individual windshield wipers, metal grab irons and handrails, movable drop steps, walkway

safety tread, uncoupling bars, trainline and MU hoses, and a snowplow pilot. Where appropriate to the prototype road being modeled additional details include etched metal radiator and dynamic brake fans.

Atlas Gold series DCC locomotives come with a factory installed LokSound Select Dual-Mode decoder. Atlas Silver series locomotives are for standard DC operation. They have



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an NMRA compliant socket for installation of an aftermarket DCC decoder.



Also new from Atlas is an economy priced EMD GP38-2 diesel locomotive. The HO scale Trainman model has the same drive mechanism as the Atlas

Master series locomotives. Features include separately applied hand rails and end railings. The body has locating dimples to assist hobbyists wanting to add individual grab irons.



Road names are Norfolk Southern First Responders, Bangor & Aroostook, Conrail, Conrail Bi-Centennial, Norfolk Southern, and RJ Corman.



This Atlas GP38-2 is a DC model with an NMRA 8-pin plug for installation of an aftermarket DCC decoder. For additional information contact a dealer or visit www.atlasrr.com.

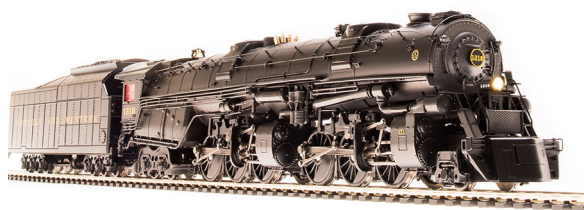




R. Bale

N&W CLASS A 2-6-6-4 ARTICULATED LOCOMOTIVE

The Norfolk & Western occupied a challenging landscape and by the mid-1930s, it became apparent that the road needed a miracle locomotive that could handle fast freight at 60 mph, deal handily with the N&W's mountain division, and eliminate double heading of passenger trains. N&W designers thought the answer would be a high-drivered articulated with a huge firebox. In 1936 two experimental 2-6-6-4 articulated locomotives with 70" drivers were built, tested, and deemed a success. Eight more were immediately erected in 1936 and 1937. Twenty-five more were built during WWII followed by eight in 1949-50. Five of that final group (1238-1242) were equipped with lightweight Timken roller-bearing side and main rods, a feature found on no other articulated locomotive. The men who operated N&W's Class A 2-6-6-4s rated them as the finest steam locomotives ever built. Sole survivor of the class, N&W 1218 is on display at the Virginia Museum of Transportation in Roanoke, Virginia.



Broadway Limited has released several HO scale versions of the Norfolk & Western Class A 2-6-6-4 articulated steam

locomotives. Four locomotive numbers are available painted in service black, including No. 1218 which is also available painted in a glossy museum finish. Five locomotive numbers are available with N&W class 22i tenders and roller-bearing side and drive rods. The 2-6-6-4 model requires a minimum track radius of 22".



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Broadway Limited's HO scale locomotives feature Paragon3 sound with Rolling Thunder that functions in both DC and DCC environments. For additional information contact a dealer or visit www.broadway-limited.com.



back of the structure. The HO scale model is 19.125" wide x 7.75" deep x 9.625" high.



The HO scale multi-level station model can be used as a stand-alone structure or combined with CMR's city station concourse kit. The concourse has four platforms and can accommodate up to six tracks. The concourse model is 19.125" deep x 20" wide x 6.625" high. For additional information visit www.custommodelrailroads.com.

Custom Model Railroads (CMR) has a kit for a large stone railroad station. The beaux-arts design is typical of early 20th century train stations where passengers entered at street level and descended to trains at the

back of the structure. The HO scale multi-level station model can be used as a stand-alone structure or combined with CMR's city station concourse kit. The concourse has four platforms and can accommodate up to six tracks. The concourse





R. Bale

OPERA WINDOW CENTER-BEAM FLAT CARS

With input from the Union Pacific and Burlington Northern railroads, Thrall developed the center-beam bulkhead flat car in 1977. Aggressive loading methods often ripped the corners of the large weight-saving cutouts in the sheet metal center-beam of early cars. The problem was solved by replacing the angular openings with large ovals that were quickly dubbed 'opera windows'. The full height center-beam, which is the structural backbone of the car, places the center of gravity much higher than conventional flatcars. The cars must be loaded and unloaded evenly on each side since they will tip under a significantly lopsided load. The high center of gravity also makes the center-beam cars prone to stringlining when empty. Empty center-beam cars are subject to speed restrictions since they tend to flex which can result in dangerous harmonic rocking. Despite these issues, the unique center-beam design proved popular with the lumber and sheetrock industries and the railroads. Loading and unloading time was significantly reduced and damage to the lading was all but eliminated.



ExactRail has completed another release of its highly-rated Thrall opera window center-beam bulkhead flat

car. ExactRail's HO scale version of the 63' prototype is a hybrid model that combines more than 100 brass and plastic parts. Features include a photo-etched brass center-beam, wire grab irons, brake rods, and uncoupling levers; etched metal Morton crossover walks, individual air hoses, Kadее couplers, and ASF 100-ton Ride-Control roller-bearing trucks with machined metal wheelsets.



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Road names are Burlington Northern, BNSF, Milwaukee Road, and two Union Pacific schemes.



‘Protector’ style shields are included in this production run.



Decorating schemes for the HO scale model include Conrail in the 1993 as-delivered livery as well as in the same scheme with a repainted hood.



Additional road names include Norfolk Southern (ex-Conrail) with a patched hood, and Conrail in as delivered 1993 paint

as well as with a repainted CSX hood. A 1992 Norfolk Southern car in the as-delivered scheme with the unique Protector shield completes this run.



Features on these exceptional models include wire grab irons and brake rods, uncoupling levers, and

separately applied air hoses. The HO scale models come with Kadee couplers and ASF 100-ton Ride-Control trucks with 36" machined metal wheelsets. A minimum track radius of 22" is recommended.

For additional information visit www.exactrail.com.



The Great Northern Railway Historical Society has an HO scale craftsman-style kit for a standard GN combination passenger and freight station. Designers of the kit utilized authentic 1899 architectural plans from an early Great

Northern station. Features include laser-cut interior and exterior walls, flooring, and roof; and peel-and-stick doors, windows and glazing. Details include a roof access ladder, a basswood chimney, and window and door plugs for modifying the depot. The assembled structure has a footprint of 6.56" wide x 3.75" deep including the bay. The overall height is 3.0". The platform in the photo is not included. Hidden River Manufacturing produced the kit exclusively for GNRHS.



Newly available is a 50,000-gallon wooden water tank with pump house, custom made by Monroe Models from official 1915 Great Northern drawings. The bottom of GN tanks was 16' until 1930, when it was changed to 20'. The model represents the shorter tank. For additional information

visit gnrhs.myshopify.com.



Inter-Action Hobbies is selling Schaake Machine Works: an HO scale craftsman kits based on a machine shop opened in New Westminster, British Columbia, by Henry Schaake in

1898. The high-quality kit features numerous laser-cut and engraved components including walls, windows, doors,



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skylights, and glazing. The mattboard foundations and flooring are also laser-cut. The doors and windows are molded styrene.

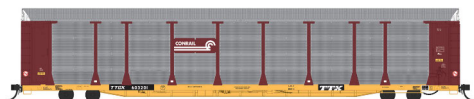
Additional parts include basswood platform decking, strip wood stock, birch dowels, roofing paper, a 3D printed chimney spark arrestor, power meters, and oil tank details. Sign stencils and detailed assembly instructions complete the kit. When assembled as shown the HO scale structure has a footprint of 6.2" x 4.8". The Schaaque Machine Works is just over 4" high. For additional information visit www.interactionhobbies.com.



Intermountain Railway is booking reservations through the end of January for HO scale bi-level auto racks and two styles of Gunderson FMC exterior-post woodchip gondolas. Standard woodchip gondolas will be available in six road numbers each for BNSF with a cross-circle logo, and two schemes each for Montana Rail Link, and Burlington Northern.



Rotary Gunderson FMC exterior-post woodchip gondolas will be available for Apache Railway, Willamette & Pacific, and Southern Pacific.



InterMountain's HO scale bi-level autorack cars feature etched metal see-through panels. Additional details include operating end doors, metal knuckle couplers, and 33" metal wheelsets.



Auto racks mounted on TTGX flat cars will be available for Union Pacific, TFM-Transportación Ferroviaria Mexicana, Conrail, Norfolk Southern, BNSF, and CSX.



Southern Railway and Western Pacific auto racks come mounted on TTX flat cars. A CP Rail rack comes on a CPAA flat car, and a GTW auto rack rides on a GTW flat car. For additional

information contact a dealer or visit www.intermountain-railway.com.



Kadee's latest release is an insulated tank car decorated for SMCX-Sturtevant Mill Co. The HO scale ready-to-run model is based on an 11,000 gallon car ACF built

in 1948. All Kadee models come with Kadee metal couplers and two-piece self-centering trucks. For additional information contact a dealer or visit www.kadee.com.



Kato has announced plans to expand its selection of HO Amtrak Phase VI Superliner cars. In addition to the previously announced diner,

baggage car, and transition sleeper, Kato is adding a coach (top), lounge car (below) and sleeper (next page) to its lineup of Phase VI Superliner equipment.



The cars have complete upper and lower level interior detailing, and tinted flush mounted windows. An optional interior light kit is

available as a separate purchase.



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The new cars are scheduled for release in May. For additional information including advance reservations contact a dealer

or visit www.katousa.com.



Menards is selling Cripple Creek Lumber Co., a fully assembled and pre-weathered HO scale structure.

The model has both interior and exterior lighting for use with Menards Plug & Play 4.5 volt power supply, which is available as a separate purchase. The structure is 6.75" wide x 6.25" deep x 3.88" high. For additional information visit www.menards.com/trains.



R. Bale

WHALEBELLY COVERED HOPPER

In 1965 General American Transportation Corporation (GATX) introduced a new, unusual looking covered hopper for handling cement and other dry bulk lading. At just 38' 7" in length, the 2,800 cubic foot single compartment car had a rated capacity of 100 tons. The car featured a complex low pressure (50–80 psi) air duct system called "Pressure-Slide" that expedited unloading. It successfully sped discharging cement and other dry lading that tended to cake. The unique shape of the body led to the nickname whalebelly hoppers. GATX delivered 50 whalebellies to Seaboard Air Line (SAL) in 1966. The following year Chicago, Burlington & Quincy took delivery of 50 cars with slightly different brake rigging.



Q Connection has made another release of its resin kit for an HO scale 1965 GATX pressure slide hopper. Introduced in 1965, the prototype cars became known affectionately as Whalebelly Hoppers. The HO scale kit is prototypically correct for either the original 1965 SAL (later SCL, SBD and CSXT) version or the 1967 CB&Q (later BN and Dragon Products) version.



Components in the craftsman kit include a one-piece cast resin tank body, two end caps, and underframe castings by Westerfield; photo-etched ladders and walkways; truck mounting screws and wire for brake rods and brake air lines. Commercial parts in the kit include Hi-Tech Details brake hoses, Kadее #58 couplers, and Athearn A-3 Ride-Control roller-bearing trucks with metal wheelsets. Appropriate Microscale decals are available from Q Connection as a separate purchase. For additional information including ordering instructions visit www.QConnection.biz.



Rapido Trains is in the final stage of developing three styles of Fruehauf

trailers: 35' integral-post trailer with rounded corners, 40' exterior-post trailer, and 40' fluted-side trailer. The new 1:87 scale trailers represent the piggy-back era from the mid-1950s through the 1970s. Side door and refrigeration units will be included in the mix.

The 35' Fruehauf integral-post trailers will feature a detailed bogie with 23" wheels (plus the tire) and molded tie down chains to mate with Rapido's F30D flat car. Road names will be



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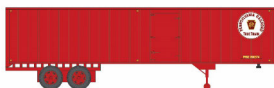
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Boston & Maine, Lackawanna, New Haven, Nickel Plate Road, and Union Pacific. A 35' Pennsylvania trailer will have a right side curb door.

Decorating schemes for Rapido's 40' Fruehauf trailers with exterior-post construction will be Erie, Penn Central, Republic Carloading, Lehigh Valley, Western Maryland, and the Pennsylvania Railroad.



Fruehauf 40' trailers with fluted sides and side doors options will be available decorated for Santa Fe, Great Northern, Navajo Freight, NPT, Pacific

Intermountain Express, and Southern Pacific.



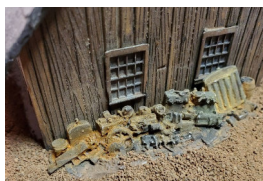
Bogies on Rapido's HO scale 40' trailers will have 20" wheel rims and two versions of landing gear that differ from 35' trailers. Optional right side curb doors will be available and

reefer versions will have a Thermo King refrigeration unit and belly-mounted fuel tank. For additional information contact a dealer or visit www.rapidotrains.com.



Rusty Rail has three new HO scale unpainted resin castings including a small crawler tractor. Additional new items

are a 1927 Chevrolet cabriolet sports coupe and a junk pile designed to lean against the side of a fence or building.



For more information visit www.rustyrail.com.



name details is also available.

ScaleTrains.com has released four versions of its Rivet Counter GE Dash 9-44CW diesel locomotive. An undecorated, unassembled kit with road



Heritage I and, as shown here, BNSF Heritage II.

HO scale models with numerous road and road number variations in detail include Southern Pacific, Norfolk Southern, BNSF



The models are available for DCC operation with an ESU LokSound decoder, and dual cube speakers. DC units are DCC ready with a 21-pin connector

to simplify installation of an aftermarket decoder. For additional information visit www.scalettrains.com.



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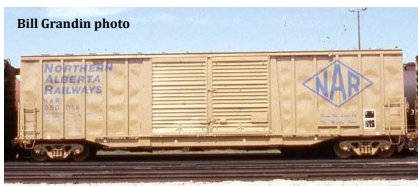
Smoky Mountain Model Works has announced plans to produce one final production run of an HO scale Southern/NS/N&W GS50/G82 woodchip hopper car. The prototypically

accurate kit will consist of a one-piece cast urethane body, brass weight, etched brass crossover platforms, Kadee shelf couplers, 36" code 88 wheelsets, Intermountain truck side frames, and detail parts including brakes, stirrup steps, wire, styrene strip, etc.) Assembly instructions, prototype photos, and decals complete the kit. Reservations are scheduled to close in early January. For additional information visit smokymountainmodelworks.com/HO_rolling_stock.html.



Pre orders are being solicited for a limited production run of **Sylvan Scale Models** HO scale resin kits for 52' 8" exterior post boxcars with double doors. The prototypically accurate model is

based on cars built by National Steel Car for British Columbia Railway and Northern Alberta Railways.



If sufficient interest is received to justify production, the kits will be available with appropriate decals for either BC Rail or NAR. Trucks and couplers

will not be included. If interested contact Marc Simpson at mesagkits@gmail.com for further details including pricing and expected availability. Production is contingent on receiving sufficient orders to proceed.



R. Bale

HI-CUBE AUTO PARTS BOXCAR

In the early 1960s freight car builders and automobile manufacturers began sharing ideas about delivering auto subassemblies from parts suppliers to final assembly plants in dedicated, high volume boxcars. The result was a series of high-cube, high-roofed, Plate G cars with 20' door openings for rapid loading and unloading. Although several car builders produced exceptionally large auto parts cars of up to 10,000 cubic foot capacity, the most prolific builder was Greenville Steel Car Company of Greenville PA. Greenville delivered more than 4,000 auto parts cars to a variety of railroads. While conceived to handle auto parts, the cars were also utilized to haul other bulky lightweight products ranging from home appliances to toilet paper.



Tangent Scale Models has completed another release of its prototypically accurate HO scale model of a Greenville 86' high-cube

double plug-door boxcar. The HO scale ready-to-run model is available in several different configurations including three body variations, four brake system arrangements, four draft gear combinations, and three underframe styles.



Road name variants include Ajax, Universal, Equipco, Miner 6600, Champion-Peacock, Elcon-National, or Peacock brake

gear boxes and wheels; and 70-ton Barber S-2A or 100-ton low-profile Barber S-2-C trucks with machined metal wheelsets fitted with either Timken, Hyatt, or Brenco roller-



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bearing caps. All versions come with Kadee couplers, flexible rubber air hoses, brake system details, and etched metal cross-over platforms.



Decorating schemes include a CSX car in an early 1990s repaint and a similar scheme with conspicuity striping from the 2005-era.

Both cars have 100-ton low profile trucks with Timken roller-bearing caps. Additional road names include a GTW car from 1977 and an L&N car in the original 1965 scheme.



Cars decorated for NW class B-108 are included in this release along with former PRR cars repainted in 1969 for Penn Central.



Completing this release is a Western Pacific car after having its brake wheel and ladders lowered and running board removed in 1965.



A minimum track radius of 24" is recommended. Undecorated kits are also available.



Tangent has also announced the immediate availability of two additional decorating schemes for its GATC 8,000 gallon radial course tank cars. (Visit

online.fliphtml5.com/buups/nyiq/index.html#p=143 for information on the earlier release). Although insulated, the



the courses, and their recessed ends.



prototype cars were readily identifiable by their circumferential rivets that surrounded the tank body, the notably different heights between the courses, and their recessed ends.

An undecorated black car equipped with the AB brake system is also available in this release, along with an unpainted kit. Tangent's HO scale 8,000 gallon insulated tank car models come with Kadee couplers and appropriate solid-bearing trucks with machined metal wheelsets. For additional information visit www.tangentscalemodels.com.



passenger cars. An ACF dome coach with smooth sides and a Budd 10-6 sleeper with fluted sides are available in Union Pacific's Heritage Fleet livery. The UP dome car is available with the names Columbine and Challenger.



Five additional 85' Budd lightweight cars with fluted sides are available decorated for Delaware & Hudson and in the Daylight scheme of Southern Pacific. The Budd cars include a baggage/RPO, a baggage/lounge, a diner, round end observation, and a dome coach.



The HO scale cars are available with and without interior lights. The models ride on appropriate four-wheel passenger trucks



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with 36" machined metal wheelsets. Passenger car exterior detail kits and LED interior lighting kits are available as separate purchases. For additional information contact a dealer or visit www.walthers.com.



Woodland Scenics has teamed up with Electric Wallpaper to sell DPM/Roomettes Combos, including Mongillo Jewelers, The Paint Pros, Signal Brewery, Bradley Fire Hall, Stewart's Hobby Shop, Ohio Shipping, Banfield Street #1, Banfield Street #, Banfield Street Flats, Atlas Taxi & Delivery, Ashby Auto Parts, Sporto's Outdoor & Athletic, The Bookworm, Arlington Hotel, Eastown Cycle, Borgo Auto Loans, Millie's House, Grafton Hotel, and a Storefront Assortment combo. For more information visit woodlandscenics.woodlandscenics.com.

N SCALE PRODUCT NEWS



Athearn has included an N scale model of an FMC (Food Machinery

Corporation) 50' boxcar in its December 2021 production schedule. The model is based on prototypes built in the 1970s with outside posts and non-terminating ends. Athearn's N scale version has double doors offset from the center of the car.



Some of the models will be decorated in Athearn's Primed for Grime schemes and

will show their heritage. Road names in this run will be Burlington Northern (ex-Galveston Wharves), Burlington Northern (ex-Union Railroad of Oregon), Burlington Northern (ex-East St. Louis Junction Railroad), Arcata & Mad River, Sierra Railroad, Yreka Western, and three schemes for Northern California Shortlines.



The models will have screw mounted roller-bearing trucks

with machined metal wheels.



Also coming from Athearn late this year is a well-detailed N scale model of a Pullman-

Standard 2893 cu. ft. covered hopper. Road names will be Santa Fe, Baltimore & Ohio, Central of Georgia, Chicago & North Western, Great Northern, Pittsburgh & Lake Erie, and Southern Railway. Details on the N scale model include separately applied round roof hatches, discharge outlet, and brake appliances; photo-etched roof walk, separately applied wire grab irons, and screw mounted trucks with machined metal wheels. For additional information contact a dealer or visit www.athearn.com.



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Dwarvin has introduced N scale crossing signals. Designed to be used with the Lamplighter FL animation unit, the crossing signal comes with 4' of 0.75mm fiber optic attached to it. The signal is 2" in height. For more information visit www.dwarvin.com.



New N scale containers from **Jacksonville Terminal Company** include eleven carrier names applied to four types of 40' standard height containers. Standard corrugated containers are available for OOCL, Capital, MSC, and TEX.



Containers with wave-type corrugations are available for CMA, Hyundai, ONE, and TAL.



A container with corrugated sides and end side panels is available decorated for Hanjin.



Forty foot 2-P-44-P-2 containers with square shaped corrugations and end side panels are available for K-Line and Evergreen. The containers are sold in 2-packs and all versions feature JTC's magnetic mounting system. For additional information visit www.jtcmodeltrains.com.



R. Bale

BURLINGTON E5 DIESEL LOCOMOTIVES

The stunning E5 diesels produced by Electro Motive Division in 1940-41 were 2,000-horsepower A1A-A1A passenger locomotives. They were built exclusively for the Chicago, Burlington & Quincy Railroad. Although similar to EMD's E3, E4, and E6 units, the exterior of the E5s was distinguished by polished stainless steel side panels that matched the Burlington's lightweight Zephyr trains. Additional spotting features were the small windows mounted low on the side panels, and the small screened ornamentations on each side of the upper headlight. EMD built a total of eleven E5A units and five E5B units for CB&Q.



KatoUSA plans to release a second run of its CB&Q Silver Streak Zephyr in March. The N scale train set will consist of an EMD E5A locomotive and five lightweight passenger cars. They

include a baggage/RPO, a baggage car, two coaches, and a round end observation. The cars are based on Budd-built prototypes with fluted sides.



The set will be available with and without interior lighting. DCC options include a choice of factory installed Digitrax or ESU LokSound.

Kato is also taking reservations for Amtrak's Viewliner II baggage car in N scale. Designed for use throughout the



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Eastern United States on single-level trains, they are also used on Superliner trains in the Western US. The 55 baggage cars now in service wear a Phase III heritage paint scheme

featuring three equal width red, white, and blue stripes along with the modern Amtrak logo. For additional information contact a dealer or visit www.katousa.com.



Micro-Trains has released several new cars including this 80' Denver & Rio Grande Western diner. The

N scale model represents a typical heavyweight steel prototype built in 1920s.



The 80' diner is also available in Tuscan red with a black roof and buff lettering for the Pennsylvania Railroad.



This N scale triple-dome aluminum tank car represents a prototype built by ACF in the late 1930s. It was owned by Shippers Car Line Corporation

and leased to Northern California Wineries.



This 50' CB&Q boxcar with 10' sliding Youngstown doors represents a car built in the mid-1960s. To meet changing safety

standards, the car later went through a rebuild that removed the running boards, shortened the ladders and lowered the brake wheel.



Micro-Trains 36' steel caboose with an offset cupola comes with Bettendorf-type swing motion caboose trucks. The N scale model represents a car built in the early 1930s that continued

in service to the end of the caboose-era. Contact a dealer for additional information on Micro-Trains models.

NEW DECALS, SIGNS AND FINISHING PRODUCTS



The **Burlington Route Historical Society** is selling HO scale water slide decals for CB&Q Maintenance of Way equipment. Both white and black lettering are included in the 2-sheet MOW set. For additional information visit

burlingtonroute.org/store.

Dave's Decals has a wide selection of vintage decals for gasoline, oil, filling station, automotive logos and advertising images. The decals are available printed on a choice of white transfer film or clear decal transfer film. They are also available printed on cardstock, and on peel-and-stick self-adhesive stock. For additional information visit www.davart.net/?product_cat=4000-gas-oil&v=7516fd43adaa.

Great Decals has re-issued water-slide Dulux gold decals for Louisville & Nashville dormitory, RPO, REA, and baggage cars. The HO scale lettering set includes L&N road names in two fonts, plus car labels and road numbers. The art work was



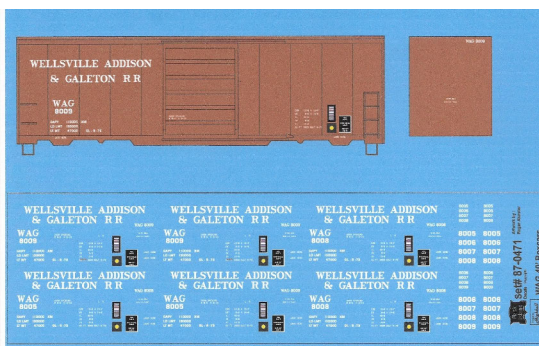
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researched and prepared by Curt Fortenberry. For additional information visit www.greatdecals.com.



Mask Island has released new HO scale water-slide decals for the Wellsville Addison & Galetton Railroad 40' PS-1 boxcar in WAG's 1973 paint scheme.



Also new are decals for The Rock 60' flat car and yellow decals for a 40' Western Pacific DF-2 boxcar. For additional details visit www.maskislanddecals.com.



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BRIEFLY NOTED AT PRESS TIME ...

Bachmann has released a starter set for an HO scale Acela high-speed passenger train. The boxed set includes three passenger cars, two locomotives (one dummy), a circle of track and a DC power pack. Additional passenger cars are also available ...

New items coming next month from **Broadway Limited** include HO scale Norfolk & Western Y6b 2-8-8-2 articulated steam locomotive, cryogenic tank cars, and N scale P70 passenger coaches ...

GHB International has released HO scale models of PRR/LIRR DD-1 electric locomotives. Both DCC and DCC-ready versions are available ...

Horizon Hobby of Champaign, IL, is seeking an experienced product manager for its **Athearn** division. The product manager will be responsible for bringing new Athearn model train products to market. For additional information visit recruiting.ultipro.com/HOR1005/JobBoard/1e0e1ed9-90e0-3f93-f7ee-8b0a223db196/?q=&o=postedDateDesc ...

Intermountain is now shipping seven roadnames for its 4750 cu. ft. triple-bay hoppers. Roadnames include Farmrail "I Care," Farmers Elevator, Grain Handling Corp., Goodseed & Grain, Pomeroy Co-Op Grain, Evergreen Fish Hatchery, and Union Pacific. See www.intermountain-railway.com for more information ...

Effective January 1st, NTRAK is being renamed **NRail**. Due to the expanding list of standards and activities that NTRAK, Inc. maintains and supports, the Board of NTRAK, Inc. has decided to rename the organization NRail, Inc. to reflect that. NRail will primarily focus on NTRAK and T-TRAK, but will also be supporting Free-moN, Clubs, and home layouts. NRail's new website can be found at nrail.org although ntrak.org and t-trak.org can still be used ...

A GP9 Phase II with high hood is among new HO scale items coming from **Walthers** in the next 45 days. Additional new items include a wide-vision steel caboose, 100-ton 34' open hopper cars, and flexible self-adhesive paved roadway. ■



SELECTED EVENTS



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JANUARY 2021

Due to COVID-19 restrictions, please check with any organization hosting an in-person event for the latest status of the event.

Ongoing 2020

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, Facebook & YouTube, dates vary, see Facebook page. “NMRax” organized by Gordy Robinson, Martyn Jenkins, Gert Muller, Jordan Kramer. See www.facebook.com/groups/nmragroup for announcements.

ONLINE, YouTube, every other Saturday. 4th Division, Pacific Northwest Region, NMRA hosts online layout tours and clinics. Archive available at www.youtube.com/c/4DPNRMovies.

ONLINE, Zoom, Second Tuesdays, 8pm EST. "Off the Beaten Track" featuring Narrow Gauge layouts and manufacturers. For more information visit groups.io/g/NNG.

January 2021

ONLINE, Zoom, January 9th, Hindsight 20/20 6.0 – A Virtual RPM. Registration required and will open approximately 2 weeks prior to the event. For more information visit speedwitchmedia.com at that time.

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.

ONLINE, Zoom and Slack, January 30-31. 2021 Bay Area Virtual PCR/LDSIG Meet. Sponsored by the Pacific Coast Region NMRA and the Layout Design SIG. Clinics, Layout ops consultations, track planning consultations, virtual layout visits. For more information visit www.pcrnmra.org/sigs/index2021DEV.html.

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.

February 2021

KANSAS, WICHITA, February 6-7, The Wichita Train Show and Meet. Sponsored in part by the Chisholm Trail Division NMRA, Masks required. Cessna Activity Center, 2744 George Washington Blvd. For more information visit www.besttrainshow.com.

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.



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CONNECTICUT, WEST SPRINGFIELD, Cancelled – 2021 Railroad Hobby Show. For more information visit www.railroadhobbyshow.com.

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.

NEW ZEALAND, DUNEDIN, May 8-9, Dunedin Model Train Show, Taieri Bowling Club 12 Wickliffe Street, Mosgiel. For more information contact Trevor Buchanan at <mailto:dunedinmodeltrainshow@gmail.com>.

Cancellations

CALIFORNIA, SAN DIEGO, TTTO sessions on the Tehachapi Pass layout of the La Mesa Model Railroad Club have been cancelled due to COVID restrictions. Normal days of operation for the Museum are Fridays, Saturdays, and Sundays. Check in advance for changes. Trains will be running, but no operating sessions will be held. ■



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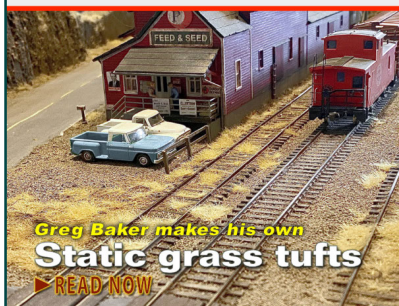
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