



RUNNING #EXTRA

Apprentice with savvy modelers

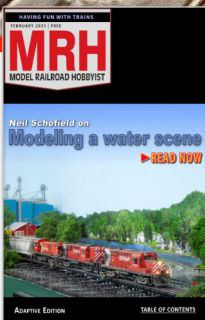


Greg Baker makes his own

Static grass tufts

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February
MRH
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- Post-1915 NYC steamers
- Static rolling stock projects
- DIY track clearance aid
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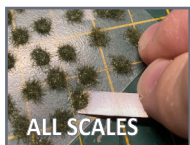
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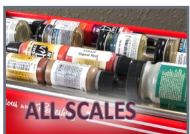
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JOE FUGATE



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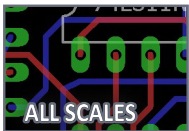
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RICHARD BALE and JEFF SHULTZ

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introduction



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JOE FUGATE HOW TO TINT YOUR DIRT
ANY SHADE YOU NEED ...



RATE THIS ARTICLE

I'VE ALWAYS BEEN A FAN OF LINN WESTCOTT'S ZIP TEXTURING methods even though this method of doing base scenery fell out of style once ground foam became all the rage in the late 1970s.

I like zip texturing methods because you make exactly the color of plaster dirt you need. Just wet it down and voila! Instant glued down dirt, no need for messy glue mixtures. Just dampen the plaster, sprinkle the zip texturing plaster mixture lightly over the area, then dampen it some more with a mist of water.

Once it hardens, there's your dirt texture at the right color. However, sometimes problems do arise.

One common problem that can develop I call "zip texturing bloom." Once the zip texturing mixture sets up and dries, you may find it develops big light-colored whitish blotches all over.

Or sometimes the dirt color shifts after you've dampened it and sets up – so it's not the color you want.

Both of these problems can be easily solved by using the weathering powders and a brush [1].



1. Using the weathering powders in the Nov/Dec 2010 issue of MRH [3], you can tint your dirt any color you like by brushing color on over your dirt. This works with zip texturing dirt or any other dirt method as well.



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2. The [Sep/Oct issue of MRH](#) has this article I wrote entitled “Zip Texturing Resurrected.” In it I update the zip texturing methods introduced in the 1960s by Linn Westcott.



Zip Texturing Resurrected

— by Joe Fugate
photos by the author

Reader Feedback
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What is zip texturing?

Put simply, zip texturing is just colored plaster. You tint the plaster to the color you want with dry powdered pigments. To apply the zip texturing, you dust the colored plaster onto damp scenery and let it set up.

There can be a lot more to it, but in its essence, zip texturing is as simple and “zippy” as it sounds. I really like zip texturing for a several reasons – first, I can make my “dirt” any color I need. Second, having plaster as the primary ingredient means zip texturing automatically has its own binder. All it needs

Figure 1: Even though this scene on my HO Siskiyou Line doesn't have ballast, grass or vegetation, it looks surprisingly good in this unfinished state, thanks to zip texturing. True to its name, zip texturing goes down in record time and provides an excellent base of dirt texture on which to build the rest of your scenery.

In the April 1965 issue of *Model Railroader*, editor Linn Westcott introduced scenery zip texturing to the hobby. With the advent of ground foam a decade later, zip texturing faded from use. It's time to introduce newly updated zip texturing methods as a powerful alternative to the “ground-foam-for-everything” approach to modeling scenery.

3. The [Nov/Dec issue of MRH](#) has a further article I wrote entitled “Zip Texturing Weathering Powders.” I expand on the zip texturing methods from the previous article to include still more scenery and weathering techniques.



Zip Texturing Weathering Powders

— by Joe Fugate
photos by the author

Reader Feedback
Add Yours

Take Zip Texturing to a new level by making and using your own multi-purpose weathering powders ...

Looking for an inexpensive new weathering approach to get that dusty, dirty look common to the real world? Look no farther than zip texturing's new cousin, weathering powders.

As I continued to experiment with zip texturing, I developed a special type of zip texturing I've dubbed “weathering powders.” Weathering powders can be used for all kinds of things: weathering structures, weathering track, weathering locos and rolling stock – and of course, for “weathering” rocks, trees and other natural scenery elements (more on this later).

I use a lot less plaster in the zip texturing formulas for weathering powders, and when I mix them up, I make a much smaller batch. Most commonly, I mix a few tablespoons of a weathering powder.

Figure 1: I've used zip texturing weathering powders throughout this scene on my Siskiyou Line: on the tunnel portal, on the track, and on the rock outcropping on the left. Weathering powders help tie everything together and give your scenic elements a believable look of having endured wind, weather, and the passage of time.

I just mix up a weathering powder mix – see the Weathering Powders article [3] for formulas – adjust as needed to get the exact color you're after, and then dust it on with a half-inch brush.

Finally, mist the area lightly with water and let the plaster mix set up. Repeat as necessary to get the exact shade of dirt you're after.

In fact, I like the precise control using a brush instead of a tea strainer with the zip texturing. I just dab it on where I want dirt to be, then mist it with water and let it set up. I can get exactly the dirt color I need! ☑

THE LIMITED MODELER

column



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

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JIM SIX LOOKS AT POST-1915 NYC LOCOMOTIVES FOR THE NORWALK BRANCH ...



1. I can hear and feel this train approach. This was railroading. NYC 1390 is a H5-class Mikado typical of the late 1910s to about 1950. Photo circa 1940s. The footboard pilot that was so functional for switching. Note that the headlight is off. The NYC typically did not burn headlights during daylight hours before 1950. *Ray Breyer collection*



DOING MORE WITH LESS



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THE NEW YORK CENTRAL LINES WAS A LARGE RAILROAD WITH a huge roster of steam locomotives. Let's take a look at typical NYC locomotives from about 1915 through the 1920s that worked branch lines between Cleveland and Elkhart. I am personally interested in locomotives that operated on the Norwalk Branch and are available as HO scale models. For the purposes of this article, I am ignoring locomotive classes that are not available as HO models with the exception of the 4-4-2 Atlantic type.

The 4-4-2 Atlantic was a crucial link in steam locomotive evolution, but after discussing this with other model railroaders who are knowledgeable about HO steam locomotives, it appears there has never been an NYC Lines Atlantic produced in brass or any other form. By looking at some NYC Lines 4-4-2 locomotives here, maybe, just maybe we can plant a seed that might grow to change that.

4-4-2 TYPE LOCOMOTIVES (THE MISSING LINK)

The 4-6-0 and the 4-4-2 marked different approaches to improving the performance of passenger locomotives from the 4-4-0. As we discussed last month, the 4-6-0 offered better tractive effort with its third pair of drivers, but its small firebox left it with little more steaming capacity. It could haul longer trains than the 4-4-0 but there was some sacrifice in speed.

The 4-4-2 locomotives developed in a different direction. Instead of adding an extra pair of drivers, the Atlantic added a trailing truck, which allowed for a much larger firebox. The firebox's much greater steaming capacity meant the locomotive could maintain higher speeds.

As one might expect, the New York Central Lines came to roster more Atlantic-type locomotives than 4-6-0s. Although the 4-4-2 type locomotives appeared before 1900, most were

built after 1900. They underwent many mechanical upgrades to retain relevance into the 1930s. The I-class of 4-4-2 locomotives took advantage of the 4-4-2's superior firebox with a larger boiler, which produced even more power for high speed passenger service.

They handled four-car trains of heavyweight passenger cars well, but as the trains became longer to serve the growing population, the 4-4-2s two pairs of drivers lacked the tractive effort to keep up. When the 4-6-2 Pacific began to arrive on the railroad the 4-4-2 locomotives were reassigned to secondary trains and to the branch lines where they survived to the Second World War.

2-8-0 TYPE LOCOMOTIVES

The 2-8-0 Consolidation was the ultimate in early heavy freight locomotives, and more than 33,000 were built in the



2. NYC 4322 lays over at a locomotive facility. These I-class speedsters worked well in light passenger service but lacked power for heavy, mainline passenger trains. The boiler of 4322 is noticeably smaller than that of the 6915 in images [4 and 5]. The cab is the standard NYC cab of the early 1910s to the late 1930s. *Ray Breyer collection*





3. Many NYC Lines passenger locomotives had “silver leaf” lettering and striping boxes until the 1930s. CCC&StL 6915 has the silver leaf lettering and “boxing” around the lettering and on the cylinder sides. The edges of the footboards along the sides of the boiler and the wheels perimeters were white. Big Four 6915 was a speedster. Beautiful locomotive. *Ray Breyer collection*



4. P&E 6918 is another NYC Lines Atlantic with “silver leaf” lettering and boxing around the cab number and tender lettering. The cylinder heads are polished bright silver. Edges of the footboards on the sides of the locomotive were white. Classy locomotive and a slick-looking speedster. *Ray Breyer collection*



5. NYC 6906 at Indianapolis, Indiana in September 1927. This I-class Atlantic has an early cab and early slanted cylinders, both typical of a 1900-1910 build. The increased firebox size and larger boiler made the Atlantic a significant improvement over the earlier 4-4-0 American type locomotives. In the end, they were a stepping stone to the even larger 4-6-2 Pacific. *Ray Breyer Collection*



6. NYC 6915 takes on water as it pauses with its passenger train circa 1925. It was about as modernized as an NYC Atlantic got. It has modern cylinders, an

assortment of added plumbing and appliances, and a modified tender with extended coal bunker. These were nice-looking locomotives. The engineer and road foreman pose proudly for this photo.

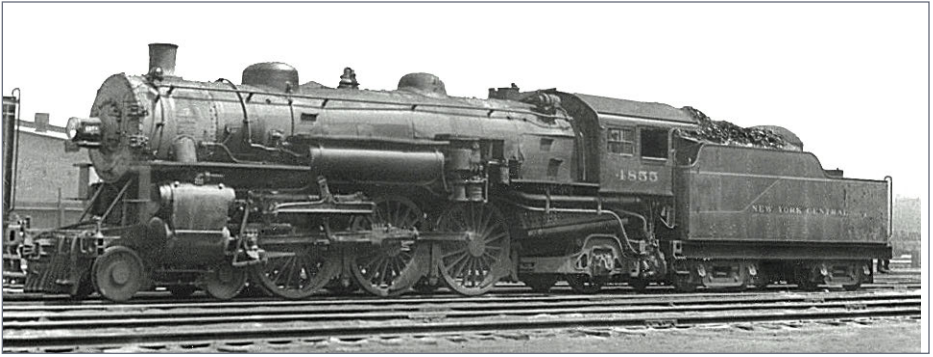
Ray Breyer Collection



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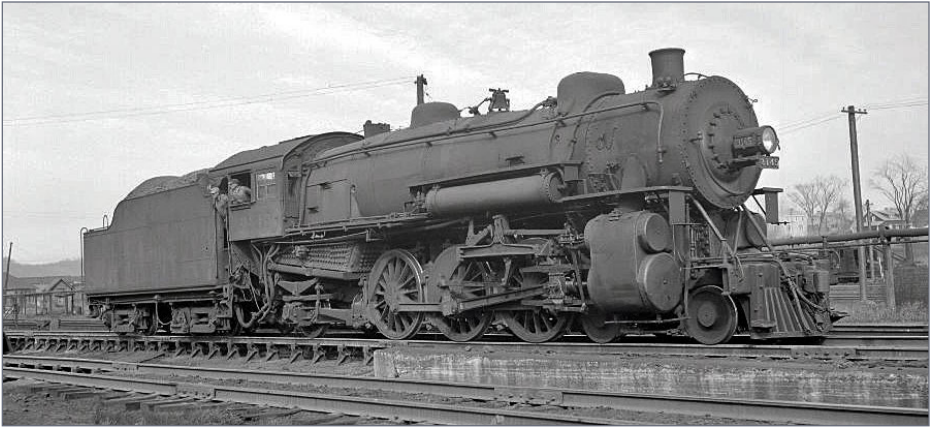
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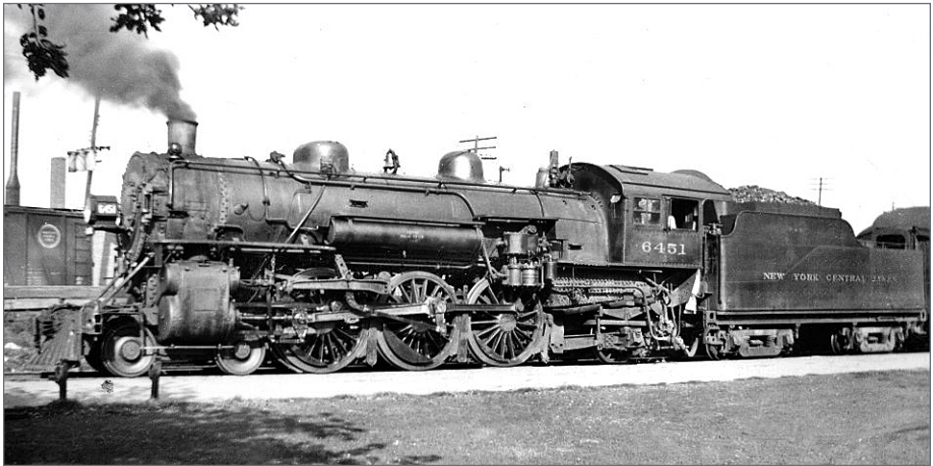
7. NYC 4855 is a K3 class 4-6-2 in the as-built configuration. With a full load of coal, it appears ready to go to work hauling varnish along the railroad. *Ray Breyer collection*



8. NYC Lines 4508 was assigned to the Boston & Albany to get its primary passenger trains over the mountains between Boston and Albany – where else?! It has clean lines, large drivers and the standard NYCL tender of the time. Note the old trucks under the tender. Photo circa 1905. *Ray Breyer collection*



9. NYC Lines 3145 is a more modern Pacific than the 4508 [8]. However, it still has the earlier standard NYC Lines cab with two windows on each side. Later cabs had but one window on each side. *Ray Breyer collection*



10. Peoria & Eastern 6451 Champaign IL 10-13-36. This is a light Pacific, and was probably used for commuter service or worked light passenger trains on the P&E. Before the 1950s, the NYC operated many passenger trains on its subsidiary lines with Pacific and Atlantic type locomotives. *Ray Breyer collection*



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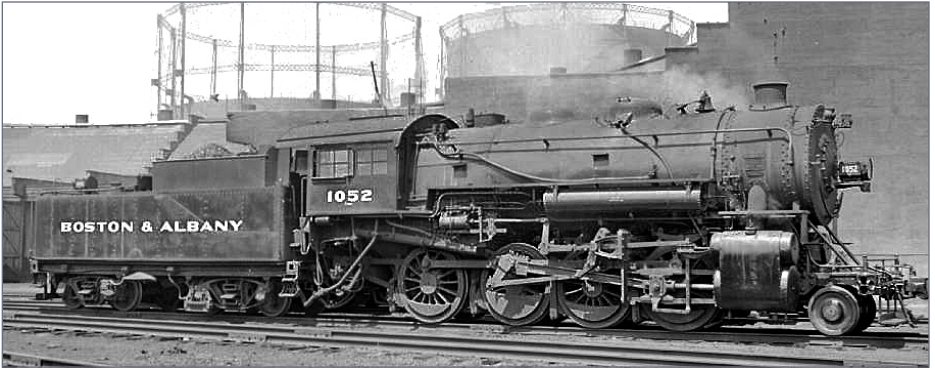


11. This is one of the finest photos of an NYC Lines 4-6-2 that I have ever seen. The photo was probably taken in the late 1920s or early 1930s. Note the Roman typeface of the lettering, which was discontinued in 1936. The locomotive has the standard NYC Lines cab it was built with. *Ray Breyer collection*



U.S. from 1866 until the end of production in 1915. This month, we will consider later versions of the Consolidation that were common after 1915, including the NYC's G5 and G6 classes.

Many of NYC's G5 and G6 locomotives served until the end of steam on the system. The NYC rebuilt 482 of the G5 locomotives into H5 Mikados – the largest class of Mikes on the Central.



12. G5 1952 is pictured sometime after 1935, the year of the New York Central Lines' reorganization into the New York Central System. Lettering on locomotives was changed from Roman to this new style. While this photo was taken on the Boston and Albany, identical locomotives worked out of Toledo on former LS&MS lines.

Ray Breyer collection



13. Here is another G5 2-8-0 parked alongside a water plug, circa 1930. The 6862 is NYC Lines, I suspect a Big Four locomotive. The G5 locomotives were large, hulky Consolidations. The tender is a switching tender that holds lots of water and little coal, and provides the crew with good rearward visibility.



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14. Alco's Brooks Works built NYC 1198 in 1914 as a class G46L. It was originally Kanahwa & Michigan #551. It was renumbered to T&OC 9715 in 1924. When the NYC Lines was restructured as the NYC System in 1935, it became NYC 1198 – its last number. The photo is circa 1940s. Note how small the engineer is relative to the locomotive.



15. NYC Lines 2981 was not a pretty sight, but it definitely was functional. Alco's Brooks Works built this G6 class Consolidation in 1910 . Although 2981 was retired and torched in 1932, many of the class lasted into the early 1950s. *Ray Breyer collection*



16. Chicago, Cincinnati, and St. Louis G6 2-8-0 6739 takes on water. The coal bunker appears full. *Ray Breyer collection*



2-8-2 TYPE LOCOMOTIVES

The New York Central had more 2-8-2 Mikado freight locomotives than any other railroad, and with 1,350 units, the NYC had more Mikes than most railroads had locomotives. The four most common classes of Mikado were H5, H6, H7, and H10. The H7 and H10 were heavy Mikados, while the H5 and H6 were considered light Mikes suited for the light rails of NYC's western branch lines.

If you have interest in modeling northwest Ohio, southern Michigan, or of Indiana in the 1920s you really need to consider using Mikados, and the H5 and H6 classes were most common. At just under 500 units, the H5 was the largest Mikado class on the NYC. The USRA H6 class was also sizable, with 194 units. These would have been the most common freight units on the Norwalk branch.



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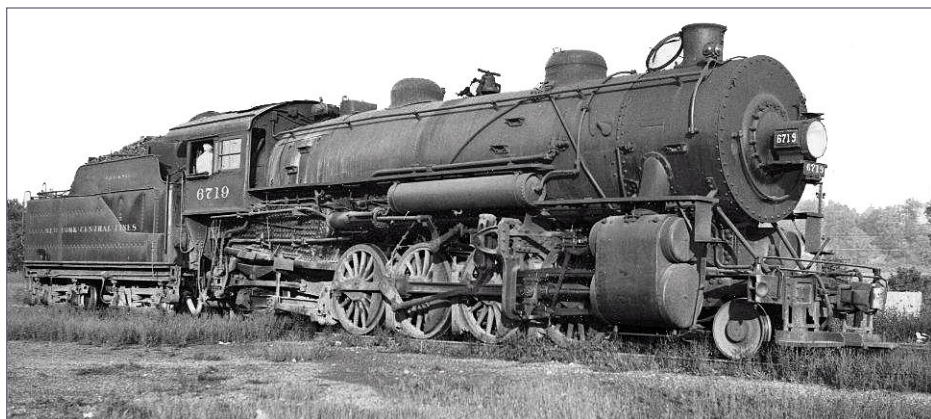
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17. NYC Lines 9558 is an early H5 Mike rebuilt from a G5 class 2-8-0. Note that the small drivers were retained. It even has an early 2-8-0 small tender. Anyone modeling the NYC in the 1920-1950 time frame will need at least one of these locomotives. Photo circa 1925.
Ray Breyer collection



18. NYC Lines CCC&StL H5 2-8-2 is typical of H5 Mikes. Photo taken at Wabash, Indiana, on the Michigan branch from Greenville to Benton Harbor, Michigan. A couple of H-class Mikes regularly worked out of this location. This unit has so-called passenger trucks under its tender, likely indicating that the tender is a replacement from a 4-6-2. Photo 19 shows the engineer's side of the same locomotive.
Ray Breyer collection



19. Here is the engineer's side of CCC&StL 6719 at Wabash, Indiana, on 09/11/1934. Many NYC Lines H5 Mikes had USRA-like tenders. The USRA may have used these tenders' design, since they came before the USRA. *Ray Breyer collection*



20. The 1306, a later-built H5, sits at the water plug in this photo from the 1940s. The white wisps of water vapor above the fire box and in front of the cylinders indicate this locomotive is under steam. Like the 6719 [18, 19], the 1306's tender is on passenger trucks. *Ray Breyer collection*



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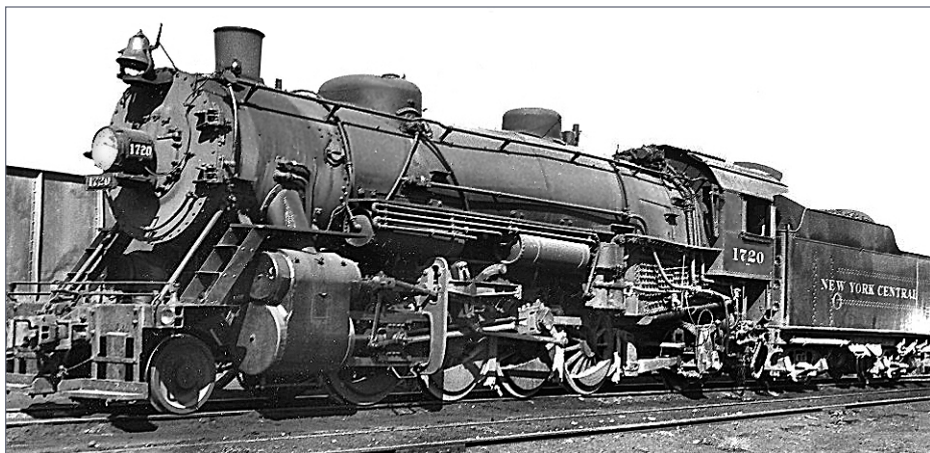
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21. CCC&StL 6039 photographed in Wabash, Indiana on 05-18-1939. The NYC's nearly 500 H-class 2-8-2 Mikados ruled the railroad's extensive network of branch lines throughout Illinois, Indiana, Michigan, and Ohio. *Ray Breyer collection*



22. This photo of NYC 5155 is one of my favorite steam locomotive photos. It was taken shortly after emerging from the shop and may even be a builder's photo. The USRA Mikado is one of the finest-looking steam locomotives ever produced. It was also one of the most successful, lasting from 1918 to the mid-1950s.



23. The 1720 is almost unchanged since being delivered to the railroad about 1920. These locomotives were so well-designed, reliable, and modern that there was no real need for upgrade. The wind deflectors atop the cab roof were a later addition for creature comfort. Note the poling pole and rerail frogs stowed underneath the tender frame.

Ray Breyer collection



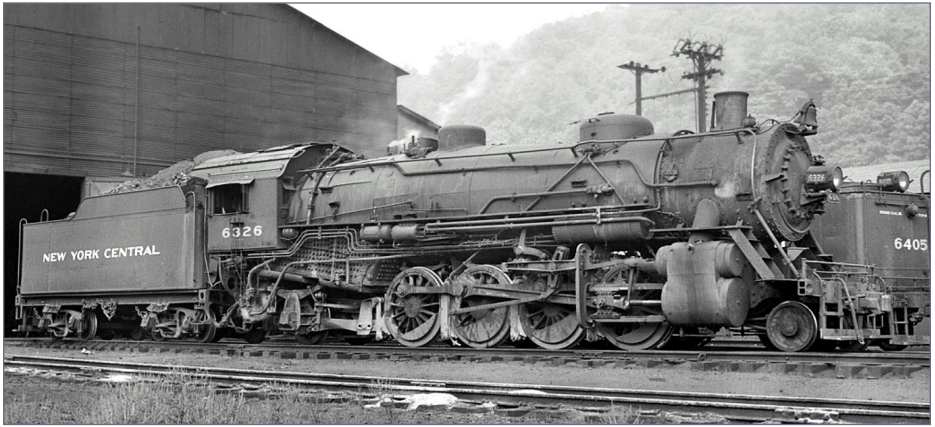
24. This view of NYC H6 1849 is typical of 1937 to about 1940 with the Roman lettering and the 1849 number. NYC locomotives were renumbered in 1936. Note the poling pole alongside the tender frame and the lack of cab roof wind deflectors. *Ray Breyer collection*



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25. This circa 1950 photo shows the USRA H6-class 6326 in a classic engineer-side pose. After 30 years of service, she still looks to be in top condition. Note the footboard pilot instead of a cow catcher.



26. It is believed that this is the only NYC USRA Mike fitted with an Elesco feedwater heater. While the test was successful, the railroad abandoned the project due to loss of traffic during the Great Depression. This locomotive looks awesome and I wish more units were converted. This locomotive was originally numbered as the 5153 but was renumbered to 1853 in August of 1935 when the NYC Lines became the NYC System.

NYC CLASS Z1 USRA LIGHT SANTA FE



27. U.S. 1109 is a USRA light 2-10-2 assigned in 1919 to the B&A to work drag freight and pusher service over the Berkshire Mountains between Boston and Albany. These locomotives look very much like a USRA Mikado, just a little longer with the extra pair of drivers. As newer Berkshire 2-8-4 locomotives began arriving on the B&A in the 1920s the Z1 locomotives began to work on the Big Four west of Cleveland. In 1926 all 10 Z1 class locomotives were sold to the Big Four before being sold in the late 1920s to the Grand Trunk Railway.
Ray Breyer collection

MODELS TO WORK WITH

Depending upon what railroad you choose to model, coming up with appropriate steam locomotives can be challenging. Only the Pennsylvania Railroad has enough steam locomotive models represented – thanks to BLI and brass importers – to operate a good-size model railroad. I have been unable to find any 4-4-2 Atlantic model steam locomotives appropriate for the NYC Lines, even in brass, for example.

The brass market is a source for many locomotives if you are willing to pay the price to purchase them. Since many were



produced in the decades before 1990, many will require additional work – and expense if you don't have the skill – to make them run well. Then there is the DCC and sound installation. Brass can be a very expensive proposition.

I have one brass model locomotive, the H5 Mikado pictured in [28]. I may add a few more brass locomotives in the future if needed, but with its purchase price, repair costs, and sound installation costs totaled, my Mike cost me about \$700. I am a retired person, and I cannot afford many brass locomotives at that price.

For model railroaders the USRA light Mike may be the easiest model steam locomotive to come up with. Bachmann, Broadway Limited, and Trix (Marklin) all have offered really good models of them. Broadway also offers a USRA heavy Mikado. Many railroads had USRA Mikes including the NYC Lines, which had 184.



28. This is an Overland brass NYC H5 class Mikado that I picked up second-hand. I will have DCC and sound installed in it, then I will touch-up its paint, add decal lettering, then apply weathering. It will be used on the layout when I operate between 1915 and 1929. Note that it has some detail changes at the pilot, headlight, and bell atop the boiler.

As for the Broadway, Bachmann, Trix, and other HO steam locomotives, you are looking at prices ranging from \$200 to \$400 on the open market – sometimes less. In other words, these models will cost you about half the price of brass steam locos. Keep in mind you need only one steam locomotive per train whereas diesel modelers typically need two or three locomotives per train. This helps to even-out the cost of steam vs. diesel power.

I have been modeling the 1920s for about six years now. I only recently became interested in modeling the 1910s. Naturally, I have more locomotives ready or almost ready for use operating in the 1920s than the teens. In addition to the brass H5 Mike, I have two Trix USRA Mikados (NYC class H6) [29, 30]. They are flawlessly running locomotives that match the NYC prototype well.

I have two Broadway Limited USRA locomotives – an NYC K3 Pacific and an NYC H6 light Mikado. The Broadway is currently



29. This Trix model is my oldest steam locomotive. It joined the roster 15 years ago, and has served flawlessly in operation ever since. This model convinced me to backdate from modeling the 1950s to where I am today modeling and operating in the 1910s and 1920s. It is out-of-box stock with three exceptions. I removed the extended coal bunker. It is re-lettered with earlier NYC Roman lettering. It has been weathered.





30. I re-detailed this model several years back. It is one of my best and has seen a lot of hours use operating on the layout. It is a Trix Mike and has performed flawlessly. The original trailing truck has been replaced with a Frank Hodina Commonwealth truck casting. I added the Elesco feedwater heater and adjusted plumbing and some other detail accordingly. It represents a prototype that operated on the NYC's former LS&MS lines west of Cleveland, Ohio.

lettered as a Pennsylvania L2 Mikado. I am planning to detail and repaint it as an NYC H6. The K3 Pacific is one of my all-time favorite project locomotives [31, 32].

Finally, I have a Proto 2000 USRA 2-10-2 that I upgraded with Tsunami DCC/sound and am re-detailing [33]. It is an excellent runner and was well-detailed out of the box. Unfortunately, these are out of production, and only available second-hand at train shows, on the internet, or maybe elsewhere. ☑

Pictures continued on the next page ...



RATE THIS ARTICLE



31. This is one of my all-time favorite model locomotives I have ever built. It is a Broadway Limited USRA Pacific I bought undecorated. I re-worked it to better represent an NYC class K3q locomotive, painted it, and weathered it. The tender body is from a brass model. It runs as well as it looks. Nice thing is, these K3 locos also worked light freight as needed.



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32. Here is another view of my Broadway Limited USRA 4-6-2 that was re-detailed to be NYC K3q 6467. I have long loved all the plumbing on steam locomotives. It especially stands out when the model is weathered – even the “clean” weathering appropriate for a passenger locomotive.



RATE THIS ARTICLE



33. Here is my Proto 2000 USRA 2-10-2 on which I am doing a little re-detailing to match an NYC prototype. I want it to reflect a locomotive on which the railroad has installed a Commonwealth trailing truck with a booster engine. Frank Hodina cast the Commonwealth truck. The model has been fitted with Tsunami DCC and sound. It is a great runner and will be a really nice model when complete.

GETTING REAL

column

MRH Running Extra | February 2021



JACK BURGESS SHARES THREE PROJECTS
TO CREATE STATIONARY ROLLING STOCK ...



COMPLEX MODEL RAILROADING PROJECTS MAY BE INTIMIDATING BUT DEVELOPING THE knowledge and confidence to do them is a step-by-step process. Push yourself to do just a little more with each model you build. They don't need to be scratchbuilding projects but can be as simple as a better job painting and weathering a simple box car kit.

Let me share my last three major projects with you: YV MOW side-dump car 010, YV crane 108, and YV locomotive 21. I hope they might inspire you to push yourself toward more challenging projects and get more enjoyment and satisfaction from this wonderful hobby of ours.

As you might know, I have been modeling the Yosemite Valley Railroad for 53 of the 55 years that I have been a model railroader. When I started, the only photos and information I had on the railroad was a well-written book by the late Hank Johnston. His book convinced me to model the YVRR.

I wrote a letter to Hank asking a very basic question: "What colors were the box cars and other equipment painted?" He didn't know but gave my letter to his book collaborator Jim Law, who had worked for the logging railroad associated with

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the YV. Jim also had worked for a short time on the YV itself, and he provided the answers to my questions.

I soon realized that I needed more than the photos in Hank's book, and I again wrote Hank for addresses of the railfan photographers who provided the photos he used. I visited or wrote letters to those photographers asking about additional photos and how I might get prints.

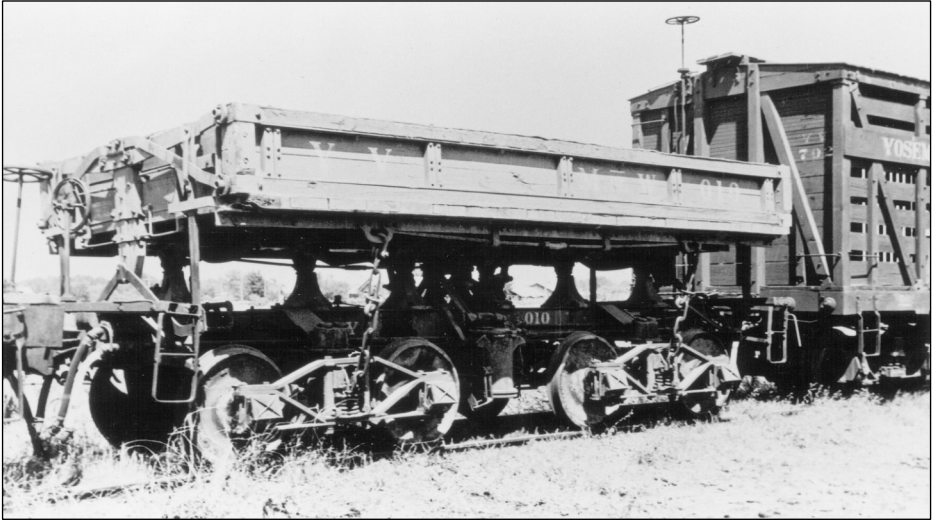
That started a hunt which continues to this day and which has resulted in a collection of over 3,800 YV photos. The three projects in this article would not have been possible without this photo collection. But keep in mind that, if you model a well-known prototype such as the Southern Pacific Railroad or New York Central, you probably can find many photos you need online.

YOSEMITE VALLEY RAILROAD MAINTENANCE OF WAY SIDE-DUMP 010

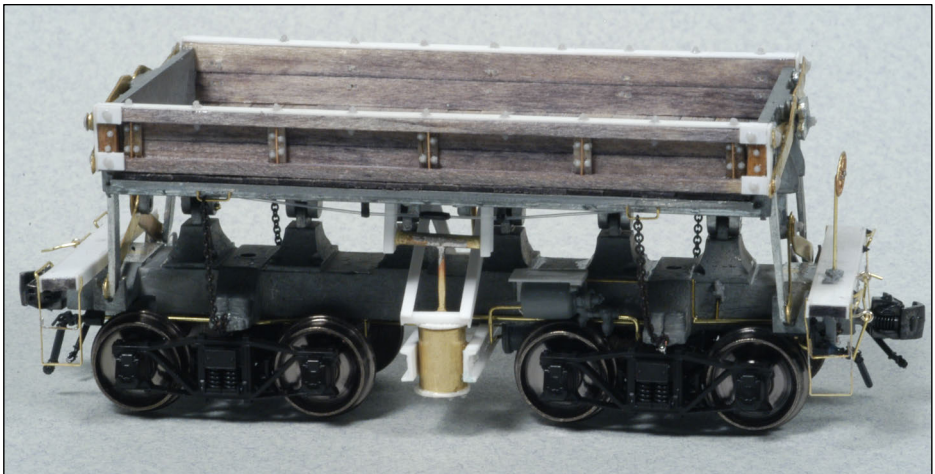
There was a single poor-quality photo of MOW side-dump car 010 in Hank's book [1]. I learned of a kit from Model Engineering Works for a very similar side-dump. I purchased the kit, painted it, and lettered it with individual letter decals.

I was quite proud of my efforts at the time, but a decade or two later I had more photos of the prototype on hand, and a much more critical eye for detail. I realized that some parts of that model were not correct. I bought another kit and corrected those problems as well as I could [2].

Somewhat later, I added a couple more photos of that car to my photo collection, including a good side view of the side-dump [3]. I also came across a Liquidation Notice which listed all of the equipment for sale, including the side-dump with some dimensions [4]. With all this new information, I decided around 2014 to build a third, more accurate model of the side-dump, this time from scratch.



1. This was the only photo I had when I built my first two kit models of YV MOW 010. *Francis Guido photo*



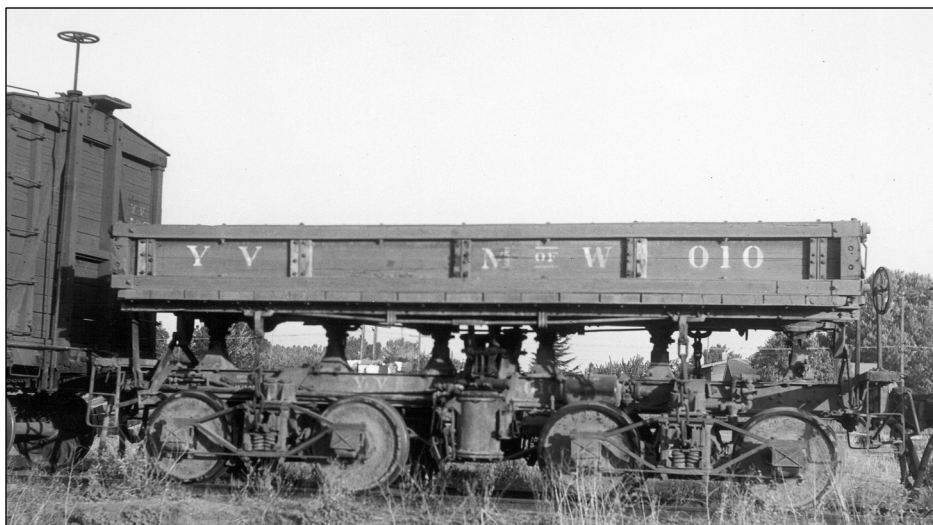
2. Here is my modified kit before painting and lettering. I replaced the steel sides of the dump body with wood sides, and scratchbuilt smaller air cylinders.



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3. This and a few other photos helped provide the details I needed to build a final model of the YV side-dump. *Paul Darrell photo/CSRM*

WORK EQUIPMENT

1—11-³/₄ WESTERN AUTOMATIC DUMP CAR

Rated Capacity.....	60,000 Lbs.
Cubical Capacity.....	11- ³ / ₄ Yds.
Cubical Capacity Level Full.....	317 Cu. Ft.
Gauge.....	4' 8-1/2"
Length Inside.....	19' 1"
Width Inside.....	9' 1"
Depth Inside.....	22"
Length Overall.....	24' 6"
Width Overall.....	10' 6"
Height Overall.....	7' 10"
Angle of Dump.....	45 Degrees
Journals.....	4-1/4" x 8"
Wheels—Cast Iron.....	33"
Floors—3" Oregon Pine Covered With Plate	1/4"

4. The listing in the *Yosemite Valley Railroad Liquidation Notice* for the side-dump was invaluable in drafting scale drawings of the car.

I had the dimensions, but I was still missing information on the pedestals that supported the dump body. A friend gave me a preliminary plan he had drawn for a similar side-dump used on the Sierra Railroad, and it appeared to be very close to the YV side-dump. I had what I needed to get started with the project.

The first step was to draw up plans for the side-dump. I always draw plans for every building, car, or caboose I plan to scratchbuild. The drawing process not only helps me build the most accurate model possible, but it also helps me plan how I will build that model.

As I drew up the pedestals for the side-dump, I realized that the only way to scratchbuild the frame, including the pedestals and bolsters, was with 3D-printing technology. I had been using this process for several years by that time to produce windows and doors, but nothing as complex as this car frame.

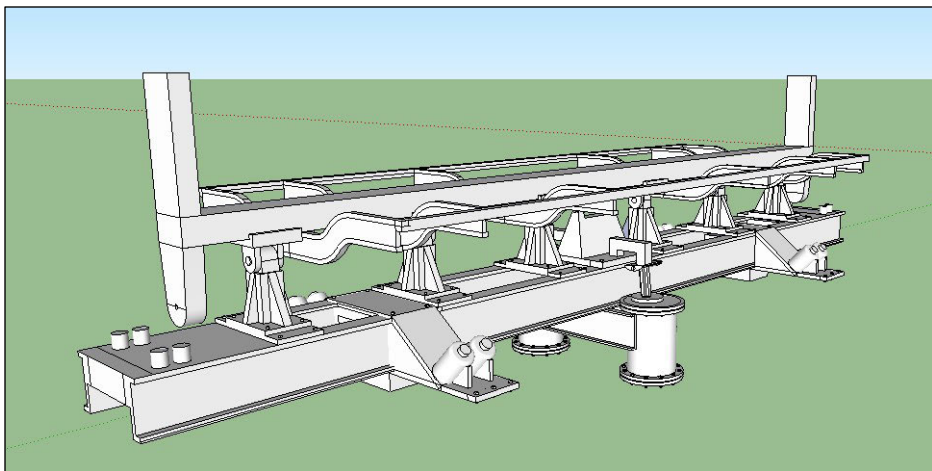
The basic frame consisted of a pair of C channels with a top cap. This was easy to draw in SketchUp, a free 3D program. I drew one pedestal for the car and then used a “copy/paste” tool to make the other five. Then I added the air cylinders and the frame supporting the dump body [5].

I uploaded the file to Shapeways and ordered a 3D print. While waiting for the 3D print to arrive, I built the wood dump body to fit the dimensions of my 3D drawing of the frame. After the 3D print of the frame arrived [6], I realized that the entire brake system—including the brake cylinder, levers, piping, and fittings—would be completely visible on this model.

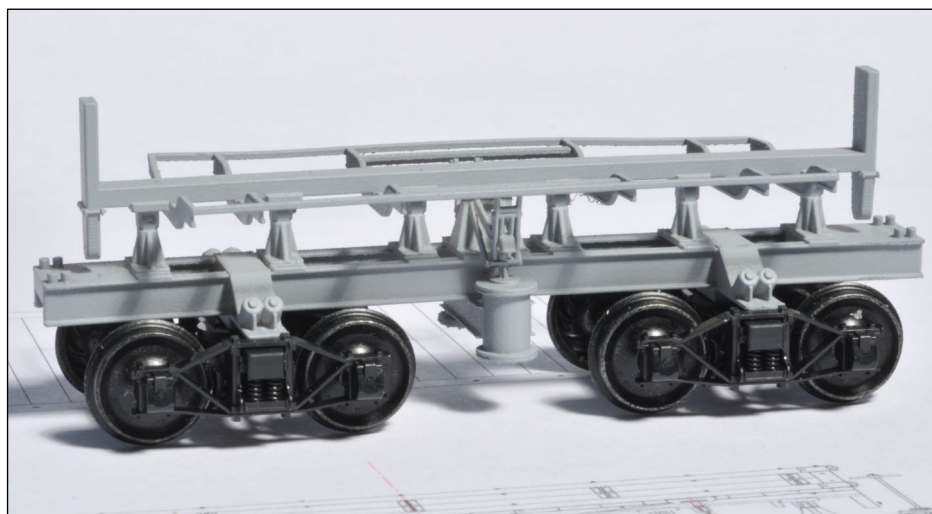
I spent an entire day just installing the main brake pipe from the air hose to the other side of the frame [7]. Then I realized that the 1-1/4” main brake pipe had an outside dimension of 1.660”. Shapeways can 3D-print a “Supported Wire” of .6 mm, which is equal to slightly over 2” in HO.

With some minor compromises, I could add all of the brake piping and components to my 3D drawing and print

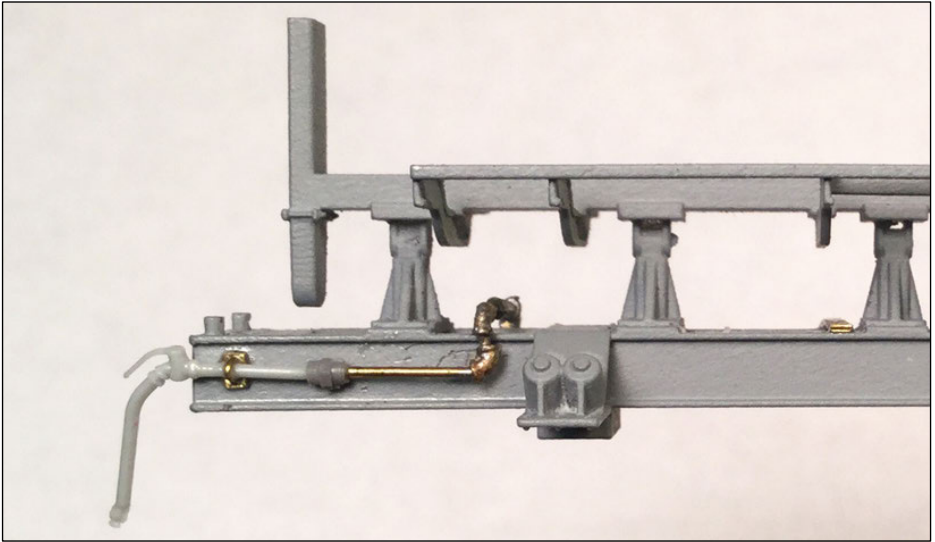




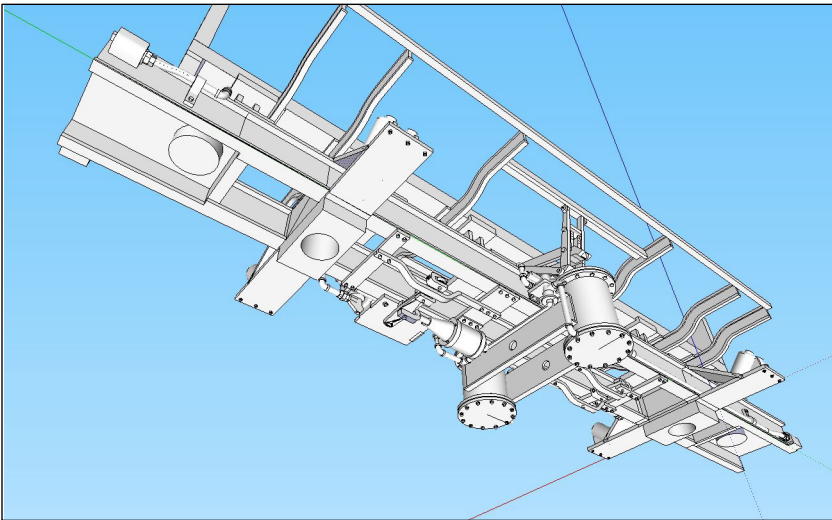
5. This screen view of the basic 3D frame drawn using SketchUp shows the frame, cylinders, and pedestals.



6. The printed frame is on the pair of trucks on top of a print of the drawings. The supports for the dump body were slightly warped due to being so thin, but they could be easily straightened when the wood body was added.



7. The start of the addition of the air brake system after a day of work.



8. This is a screen view of the 3D model after adding all the air brake parts, and the air system for the dump cylinders.



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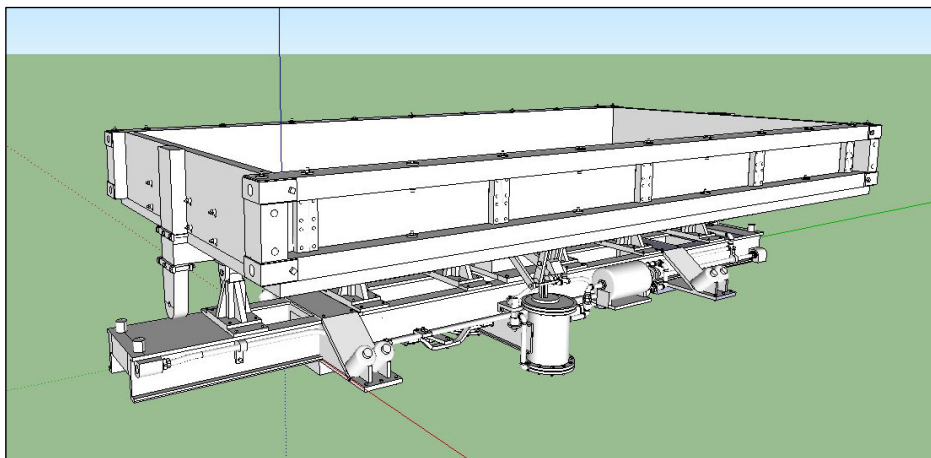
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everything. I also added the air system used to rotate the dump body to my 3D drawing. I ordered a 3D print of the frame with all of those components [8].

When I received the print, my wood dump body no longer fit! The problem is that the accuracy of 3D prints is very tight over small measurements, but less accurate over larger measurements. Rather than build another wood body, I decided to add the dump body to my 3D drawing and order another print [9].

When that print arrived, I needed only to add the wood cross-walkways and metal steps on each end of the car, together with the levers on each end of the car that raised and lowered the dump body. I photo-etched those levers using a Micro-Mark photo-etching kit. It worked okay but it was hard to get an even etch on all the levers.

With those parts done, I airbrushed the car and added a gloss coat. Then I added decals, a dull coat, and weathered it. I was very satisfied with the final model and I learned a lot [10]!



9. A screen view of the final 3D print which included the body with nuts and rivets.



10. My finished model of the YV side-dump.

YOSEMITE VALLEY RAILROAD MAINTENANCE OF WAY CRANE 08

The YV purchased a new American Hoist and Derrick 18-ton steam crane with a 27-foot boom in 1926. It was numbered 08. With the side-dump and the other nine scratchbuilt MOW cars completed, this crane was the last piece of MOW equipment I needed to build.

I had two dozen historic photos of the crane but no dimensions. I began sending letters and emails to MOW researchers seeking more general information on such cranes. One of those resources was Kyle Wyatt, the Curator at the California State Railroad Museum.

Wyatt mentioned that the California State Park at Jamestown (which operates steam locomotives on a portion of Sierra Railroad trackage) had an American Hoist and Derrick crane on display. While it was not that similar to the YV crane, it was still a worthwhile visit.



Again, my first step was to draw plans of the crane. I had one photo that really allowed me to move forward on the project. Railfan Bert Ward visited the YV on July 18, 1937 and took this photo which was very close to a full side view [11].

The photo was great, but I still didn't know any dimensions of the crane. Then I realized I already knew the wheels were 33 inches in diameter. I used Photoshop to measure the diameter of a wheel on the photo and used that to calculate the truck axle spacing, the frame length, the length and height of body, and just about any dimension I needed.

It took over a year to finish my drawings for the crane, though some other model projects interrupted that time. Once the drawings were complete, I was ready to start construction. I like to start any complex project with the simplest component because it builds confidence.

I started with the frame, which I built using scale brass channels and sheet brass. The poling pockets were unique, so those were 3D-printed. Commercial grab irons are typically 0.020"

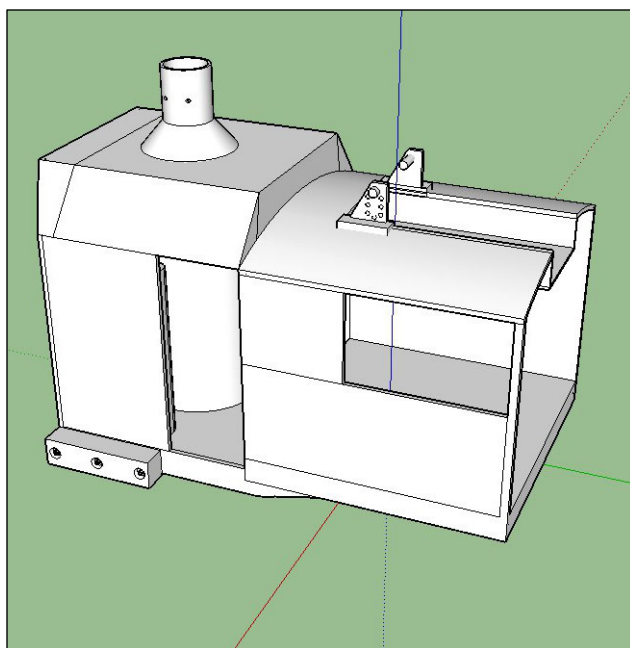


**11. YV crane 08 near the Merced roundhouse on July 18, 1937.
Bert Ward photo**

brass wire, but I made my own using 0.007" wire to match the grab irons I removed (with permission) from a condemned YV stock car, which are only 5/8" in diameter. In hindsight, you can't see the difference, but I know they are correct.

I originally decided to draw the entire body in 3D and have it printed [12]. Unfortunately, when I uploaded the model to Shapeways, they discovered issues with my 3D models that made it impossible to print. Due to the complexity of the 3D drawing, I was unable to resolve those issues and finally abandoned the effort.

Fortunately, I was able to salvage and 3D-print the roof, which took care of the most complex part of the body. I built the sides, bottom, and rear wall with large pieces of sheet brass that I soldered together with a P-B-L resistance soldering unit. Resistance soldering was the only way I could solder all these pieces together without melting any previous joints [13].



12. This screen view of the 3D body which looked fine but were there issues and I had to give up on that approach. However, I did print the roof.





13. Here is the roof on top of the basic body. The cab walls were soldered together using a P-B-L resistance soldering unit.

The front of the crane is completely open. I realized I needed to fill it with an operator's seat and controls as well as the drums, steam engines, and the cranks that rotated the drums. I also wanted to include the steam boiler, water tank, and fuel tank in the rear of the cab.

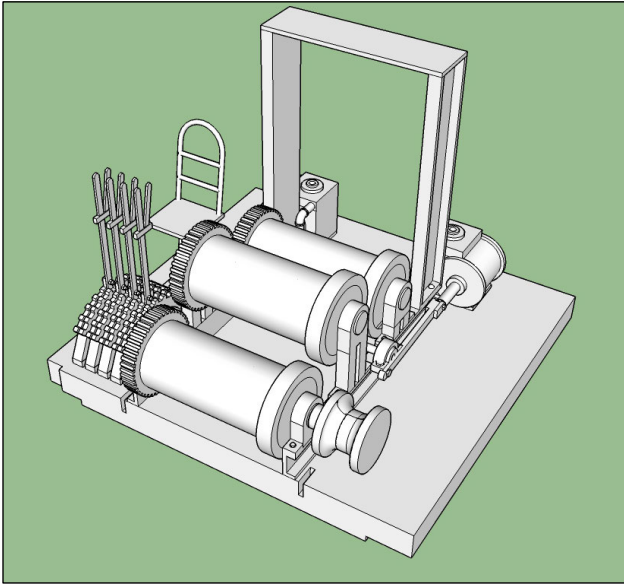
For the cab components, I realized that it would be easier to create a 3D drawing of a section of the floor complete with the operator's seat, controls, drums, and all the other interior parts [14].

I first thought of building the 27-foot-long boom from brass C-channel and sheet brass, but the boom did not have a uniform taper. I finally decided to draw it in 3D. By the time I finished that exercise, I had drawn over 750 scale rivets [15].

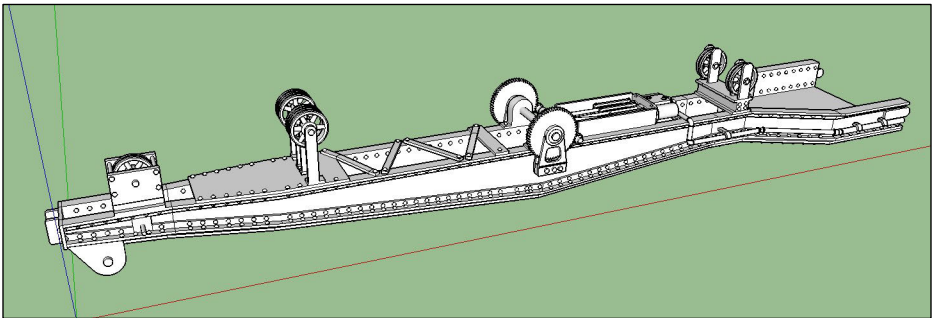
After painting, lettering, and weathering the crane, the final challenge was to rig the drums inside the crane and the numerous pulleys on the boom and on top of the crane body. After visiting a fabric store and not finding any thread that seemed to replicate the rigging cables, my wife looked online

and discovered an upholstery thread which seemed to be the best choice.

I wanted all of the 12 pulleys that raised and lowered the boom to appear to have the same tension. The solution was to add a little weight to the boom and then add those lines by



14. This screen view shows the seat for the crane operator and his levers, together with the drums and steam cylinders.



15. A screen grab of the 3D crane boom. This 3D frame alone had over 750 scale rivets.



simply gluing pieces of line around the pulleys, rather than threading a single line around all of them.

I was pleased with the final model [16]. (Some readers might notice that the lettering on my model is different than the prototype photo. The railroad repainted the crane sometime between 1937 and 1939 and changed the lettering style at that time.)

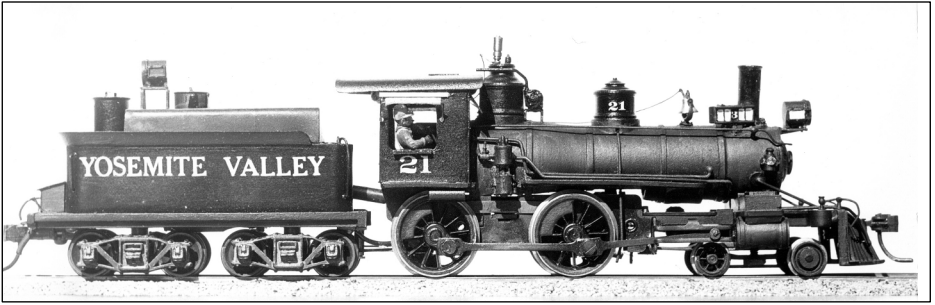
With the construction phase alone taking six months, this may have been my most drawn-out project ever, but it was very satisfying. I completed the first of the 11 MOW cars, the crane tender, in August 1985. It only took me 34 years to complete all eleven!

YOSEMITE VALLEY RAILROAD 4-4-0 No. 21

When I shared a photo of my crane and the crane tender car on my layout with the Proto-Layouts chat list, some people commented about building a prototype railroad car just to put



16. My finished model of the crane at Merced showing the other side of the crane.



17. This was my AHM model of the Reno after detailing it to match YV No. 21 more closely. But its poor running qualities were frustrating and I eventually removed the motor and detailed it to more closely model the locomotive as it was in 1939.



18. My first model of the No. 21 after being taken out of service, weathered, and placed on the layout as a static model. I eventually decided it needed to be replaced.



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it on the layout as a static model. (I have been doing that same thing for several decades. None of the six ballast cars I built from a limited-edition resin kit has ever been used during operating sessions, nor have any of my 11 MOW cars.)

When I decided to switch to prototype modeling in 1967 and selected the Yosemite Valley Railroad as a lifelong project, one of my first tasks was to identify available kits or models which could be converted or kit-bashed into YV prototypes. The YV had a venerable 4-4-0 built in 1881 by the Wabash Railroad, which bore a striking resemblance to a 4-4-0 Reno available from AHM.

I purchased one of these models and proceeded to add details shown in prototype photos of the locomotive on the YV. This included replacing the cab and adding an oil tank and some other items for the tender. I was pleased with the results, and had a friend take a photograph of it [17].

But I was so frustrated with the running qualities of my model of the No. 21 that I eventually decided to remove the motor and detail it to match the locomotive's appearance in August 1939, when it was out of service and stored in El Portal, at the east end of the line [18].

As a static detail on my layout, my 40-year-old model was acceptable for many years. However, a few years ago I decided that I needed to replace it with a more accurate replica.

I now have over a dozen photos of the No. 21 at El Portal. By the early 1940s, it was a 60-year-old locomotive and evidently more interesting to railfan photographers than other YV steam locomotives that were only 15-35 years old.

All but two of these photos were dated. The earliest photos showed the locomotive with all of its appliances, but later photos showed that more and more items had been removed. I decided to replicate the No. 21 as it appeared in photos taken around August 1939.

YV locomotives had originally been lettered with the locomotive number on the tender and the road name on the locomotive cab, a practice likely replicating the style used by the Santa Fe. By the mid 1920s, the YV changed to the SP style, with the road name on the tender and number on the cab. By 1939, the original lettering was showing through [19].

Better than the photos, I also had a 1/2" scale drawing of this engine by Bob Lunoe. Lunoe was a friend of mine who went to work for the YV in 1942 and had the opportunity to measure the No. 21 while he was working as a brakeman. His 1/2" scale drawing measures 36" wide by 24" high.

I actually had begun thinking about replacing my 40-year-old model of No. 21 several decades ago. I purchased a couple of brass 4-4-0s online thinking that they could serve as stand-ins. But when I got back to this project in late 2019 and compared the lengths of those boilers to that drawing of the No. 21, they were not close enough.

My challenge was to replicate this locomotive. Even though it would never be operational, scratchbuilding a brass boiler for a locomotive seemed beyond my skill set. The obvious solution for me was to draw plans for the boiler in 3D.

As a confidence builder, I started by modeling the tender in 3D. I thought the tender trucks from one of the brass imports might be accurate enough to use for the No. 21, but I eventually realized that the brass imported trucks had 4-foot 6-inch axle spacing, too short for the No. 21 tender's 5-foot axle spacing. That meant I needed to draw a truck side frame in 3D.

A decade ago, Eric Bracher, owner of Rio Grande Models, asked me to draw a truck side frame in 3D for a project he was working on. That drawing gave me the journal boxes I needed. I imported a Bob Lunoe 2D drawing of the side frames into my 3D drawing, scaled it to full size, and then traced the side frame. That resulted in the 3D drawings of the trucks I needed [21].

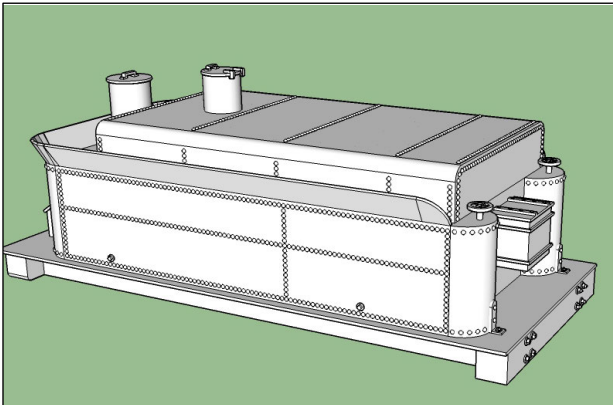


Using Bob Lunoe's drawing of the locomotive made the process of 3D modeling the boiler and the frame relatively easy. Once I was finished, I had Shapeways print the boiler and frame as a test. It printed as expected.

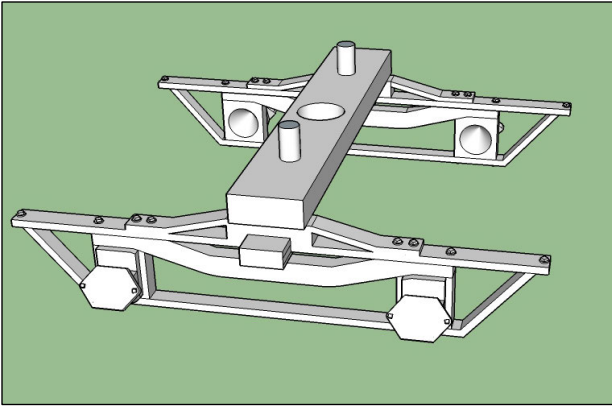


19. This photo of the No. 21 at El Portal was taken in July 1937. It was the closest photo I have to my August 1939 modeling date.

Bert Ward photo

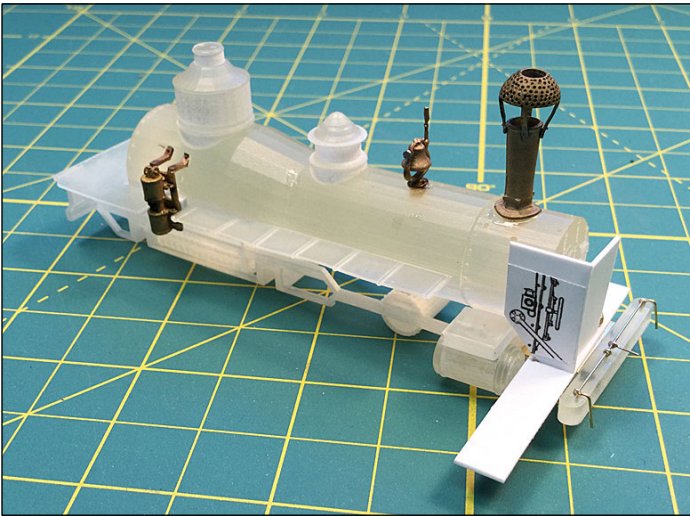


20. The completed 3D drawing of the tender complete with rolls of 1-1/2" diameter rivets.



21. Another screen view, this one showing the correct tender trucks. The resin used to print them was flexible enough that the side frames could be slightly twisted enough to insert the wheelsets. They

were not designed to be used in operation.



22. Some of the brass detail parts have been added to the boiler. At this point I was locating and drilling holes for the front boiler braces. A couple of pieces of scrap styrene have been bonded together, and a portion of the scale drawing of the front side of the boiler glued to them. A hole drilled through the drawing helped mark the correct hole location on the model boiler. The drawing was then moved to the other side, and that hole marked.



I planned to construct the cab from sheet brass as I had done with the body of MOW Crane 08. But cutting the circular hole in the front wall of the cab to match the curved boiler seemed like an exercise in frustration so I decided to fabricate the cab from .020" sheet styrene.

The first step was to make sure that my 3D-print of the boiler was accurate. I printed a copy of the HO Bob Lunoe drawing of the front of the cab onto cardstock. I cut out the image and it slid over the boiler without a problem, which meant that the boiler diameter had been printed accurately.

I drew up HO scale drawings of all four sides of the cab on my computer and saved them in a format that could be used with my Cricut Explore Air, a computer-driven 2D cutter that can accurately cut .020" styrene. I have been using it for several years to cut the sides and window openings of buildings, as well as the sides and ends of box cars.

Even before the sides were bonded together to form the sides of the cab, I started thinking about the challenge of adding a roof to the cab. That portion of the roof over most of the cab had a 21-foot radius, but the roof then curled over the sides with a 5-inch radius.

I thought that it would be easy to bond 0.010" sheet styrene over the main portion of the roof but that same styrene would not curl around the sides. Sheet brass (0.010") would work but I had no idea (or tools) to make those bends in the roof.

One of the brass locomotives I had purchased for this project had a cab roof just like the No. 21, with the correct width and length. I was able to remove the sides of that cab from the roof using my resistance soldering tool. After cleaning up the roof, I bonded it to the styrene cab.

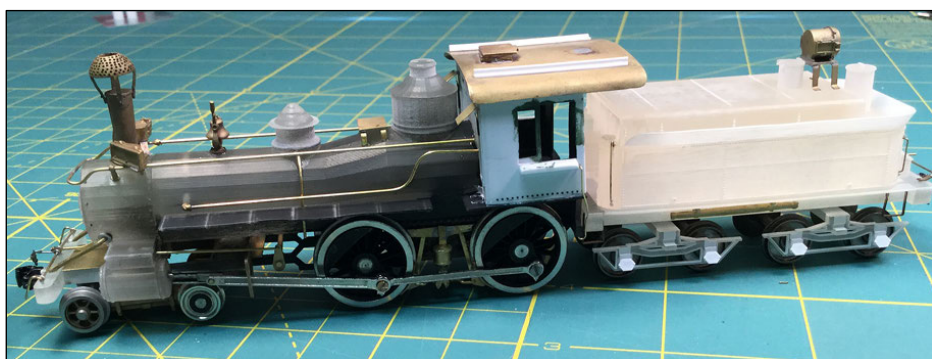
The details on the model are brass castings from Precision Scale Co., together with styrene parts from Cal-Scale and Cary. I included holes for those parts in my 3D-print of the boiler and I used five-minute epoxy to bond them to the boiler [22].

I was able to find a set of 63-inch drivers from my stash, along with main rods that matched the driver axle spacing on my model of the No. 21. I did not plan to have the drivers move, so I actually bonded them in place to replicate the position of the drivers in the photos of the real No. 21 at El Portal circa 1939. That made a number of later steps such as adding the brake shoes between the drivers much easier.

I also bonded the trucks to the tender underframe, since I didn't have an easy way to allow them to pivot. I used canopy glue to bond them in place while the tender was setting on a section of prefab track. With them glued in place, it made it easier to position the tender on the layout rails for display.

Once all the details were in place, the only tasks left were painting, lettering, and weathering [23]. To replicate the earlier lettering that was fading through by 1939, I airbrushed a coat of Floquil Weathered Black on the tender. When that was dry, I added a gloss coat of Future before adding the decals for the original lettering.

A couple of days later, I over-sprayed that lettering with Weathered Black, followed a couple of days later with another gloss coat. That was followed by Testor's Dullcote Lacquer and, finally, another over-spray of Weathered Black to also fade the



23. All the details have been added, and it is time to paint, letter, and weather the model.



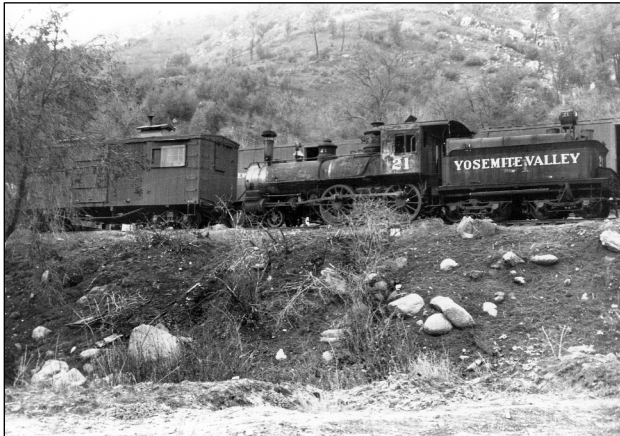
later lettering. Final weathering was done with Bragdon Enterprises weathering powders.

By 1936, the No. 21 was photographed coupled behind MOW 03, which was stored in the El Portal yards to serve as a place for daytime train crews to lay over between runs [24].

With my model of the No. 21 circa 1939 finished, I put it on the layout as a display only. It will never move and will remain coupled to MOW 03 forever, just like the prototype [25]. ☒



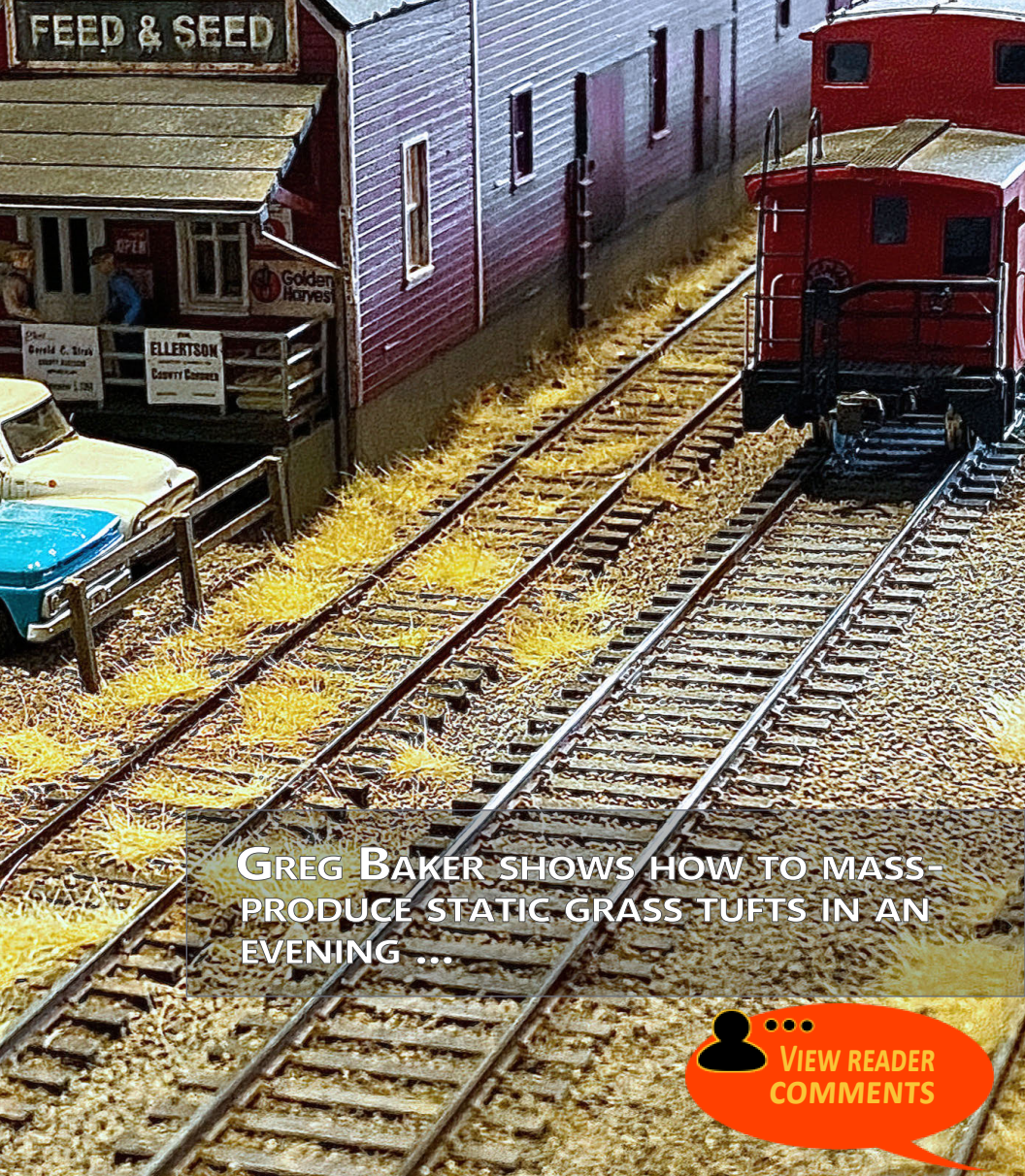
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24. A photo of the No. 21 taken from the nearby highway in 1936 shows the locomotive coupled to MOW 03. California State Railroad Museum Library col.



25. The No. 21 as it looks today with MOW 03 coupled to it. The earlier locomotive number on the side of the tender is barely visible as it was on the prototype.



GREG BAKER SHOWS HOW TO MASS-PRODUCE STATIC GRASS TUFTS IN AN EVENING ...



Make your own static grass tufts



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I HAVE RECENTLY HAD A NUMBER OF PROJECTS

THAT NEEDED static grass tufts. After looking around at various online suppliers, I was coming up with a few issues.

First, I could not find the colors I wanted. The other main issue was, the ones I did find were a bit expensive. I decided to start experimenting to see what I could do to make my own static grass tufts.

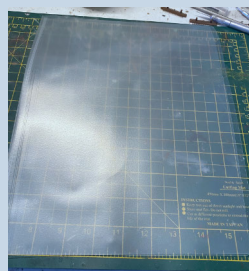
After doing a little research, I found a few existing methods. Building a static table, using a static grass applicator on glue dots, and a few others seemed to provide solutions in the \$100-plus category. I was looking more for a \$10 solution.

STEP 1: Gather the tools and materials

I based my system on the principal that plastic generally creates a static field, and rubbing plastic together will effectively recharge it. I did not want to involve any electricity or complicated equipment to create the tufts.

After a few trial-and-error attempts, I found a solution that was effective and inexpensive.

The list of equipment is pretty short:



1. Here is the plastic sheet out of the package.

- 1 Clear 6-qt. plastic storage Tub (about shoe-box-size)
- 1 Slide 'n Bind Report Cover 8 ½" x 11" solution.
- Aleene's Tacky Glue
- Assorted Static Grasses
- Knife with chisel blade or retractable blade knife
- Tweezers
- White glue

STEP 2: Prepare the base with glue



2. The first step is to cut the plastic sheets to a size that will fit into the plastic tub. I also had to cut off a curved edge.



3. I use Aleene's Tacky Glue, as it does not run like regular white glue, and it has rubbery consistency that is easy to work with when dry. The glue does not affect the static charge.



4. One nice thing about making your own static grass tufts is you can make them as large or as small as you want. I made long strips for between roads, and shaped the glue to match specific structure shapes or layout features. One note is to not make mounds, but more of a flat area.





5. Next is to place the glue-covered plastic sheet into the plastic tub. Rub the sheet against the bottom of the tub a few times to generate static charge. As you can see, I have used this tub for many projects.

STEP 3: Apply the static grass



6. Cover the plastic sheet with the static grass color and size of your choice. I am using a mix of dark green and tan. The static charge on the sheet should last long enough for the glue to tack the grass in position.



7. I lift one side of the tub and let the grass fall to the other side, then I lift and let the grass fall to the other end. Finally, I lift the sheet and shake off the excess. At this point, all the glue should be covered with static grass.



8. I set the plastic sheet aside to dry. Once the glue has changed from white to clear, the grass tufts are ready to use.



STEP 4: Using the static grass tufts



9. After the tufts have dried, I use a chisel blade or retractable knife to pop them from the plastic sheet.



10. Using tweezers, I dip the back of the tuft in white glue.



11. The final step is to place the tufts in a scene. For areas that need a bit more effort to mold the tuft to the scene, I wet the area with water.

STEP 4: Using the static grass tufts *Continued ...*



12. One more trick regarding static grass is to treat it like a canvas. I have noticed most people treat static grass like a finished product, but it can be blended with other colors, stacked on top of itself, mixed with different heights of material, and even painted. If I want to add a bit of variety, I often just paint the tips to

create depth and represent seasonal change to the plant.



13. Here's the final result of applying some of these static grass tufts to my bridge trestle scene.

Now you can enhance your scene with your own custom-made grass tufts! ☒



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Greg Baker



Greg Baker has been “seriously” model railroading since 2000, but as long as he can remember he has always been fascinated by trains. Greg’s main interest is the Spokane Portland & Seattle Railway and its operations in Oregon in the late 1960s. He really enjoys the operations along the Oregon Trunk, but has

recently started a modeling project based on Astoria Oregon.

He currently lives near the Portland Oregon area, and has started a new job with a local transit agency there. He is excited to be back in Oregon and to enjoy everything it has to offer, while spending time with his wife and two kids. He is currently working on remodeling his garage into workshop and layout room. ■

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Track clearance gauge

MRH Running Extra | February 2021

J. SCOTT WALTON BUILDS A
ROLLING TRACK CLEARANCE GAUGE
FOR TESTING SCENERY ...



I RECENTLY ADDED SCENERY TO AN AREA OF MY LAYOUT. When I finished, I was worried the rock castings might come too close to the track. I got out the NMRA gauge and began checking the clearance – place the gauge, check, place, and check again.

I realized that there had to be a better way to do this. If I could mount the NMRA gauge on the end of the car, I could do a rolling inspection, without having to constantly re-align the gauge. I had all the materials on hand to build the tool, allowing me to check the clearance easily.

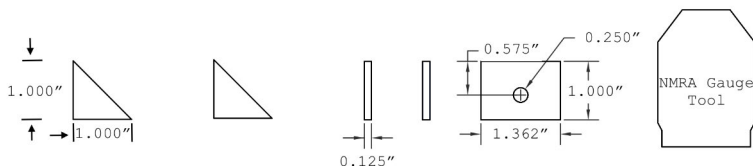


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STEP 1: Find materials and cut to size



1. This diagram shows the parts needed for the mountable track clearance gauge. All measurements shown are in inches. I used Lexan for the NMRA gauge tool cutout, all other parts were styrene.

The clearance gauge requires some basic materials: 0.080" styrene sheet and 0.125" x 0.250" styrene strips will do for the support frame. I had some Lexan sheet on hand for the gauge itself. The transparency of the Lexan is nice, though styrene would do just as well [1].

The key part of the tool was a MicroMark track inspection car (#82414). I like the transparency of the MicroMark track inspection car, but you could use any flat car, on the end without a brake wheel.

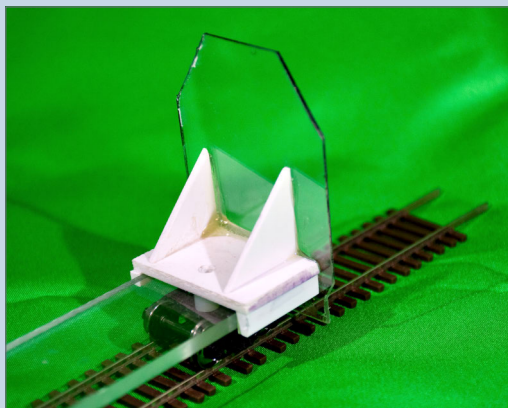
Cut a piece of styrene 1.362" x 1" to serve as the base. The 1.362" dimension will vary depending on the width of your chosen flat car and the thickness of your strip stock. It should be long enough to span the width of the flat car and two pieces of strip stock, and the ends should be flush.

The MicroMark track inspection car has truck mounting bolts that protrude through its deck. If you are using the Micro Mark car, then you will want to drill a $\frac{1}{4}$ " hole

STEP 1: Find materials and cut to size

Continued ...

through the base, about 0.575" from what will eventually be its front edge to compensate [1]. Hole size is not critical, so long that it is large enough to accommodate the bolt [2].



2. The hole in the styrene on the gauge mount should align with the truck screw on the flatcar.

Cut a 1" square of styrene in half diagonally to form two equilateral triangles for the vertical supports.

Cut two 1" pieces of strip stock to form the side brackets that will help hold the finished product in place on your car.

Trace your NMRA gauge onto Lexan or Sheet styrene.

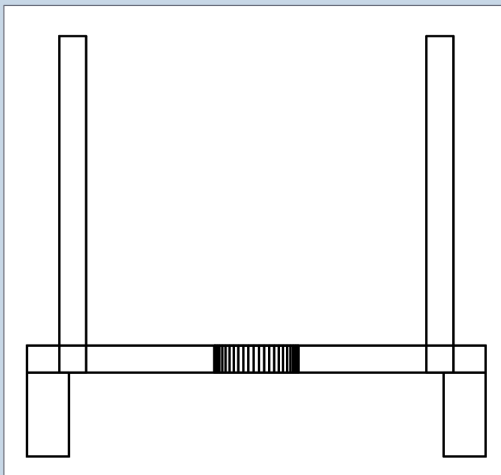


STEP 2: Assembly



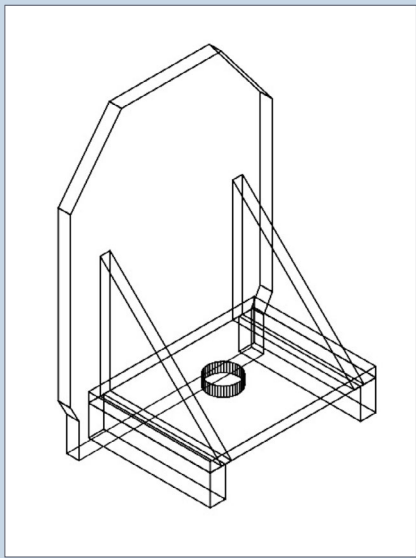
3. Here is the complete gauge frame with the gauge attached. It is designed for easy attachment and removal from the test car.

Glue the narrow edge of your one-inch strip stock to one end of the base. Be sure that the joint is square and that the ends of the strip are flush with the base [4, 5]. Set the assembly aside to dry.



4. Initial assembly of the mounting frame for the track gauge. The styrene strips should be glued at right angles on either end of the base, and the triangle brackets should be glued on top as shown. The front edges should be flat to accommodate the gauge later on.

STEP 2: Assembly *Continued* ...



5. It is important that all forward edges on the frame are flush, since they will support the track clearance gauge itself. The hole in the middle of the base – distance from edge given in [1] – will accommodate the truck bolt that protrudes through the top of the car deck, if you are using the MicroMark track inspection car.

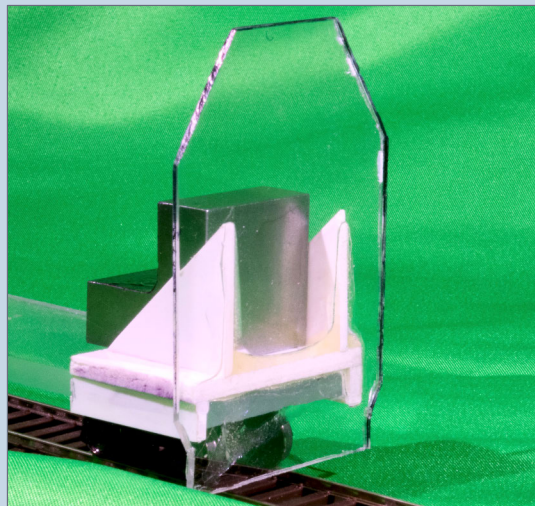
Wrap a piece of aluminum foil over the end of your inspection car/flatcar to prevent the car from being glued to the gauge. Once the glue has dried on the base assembly, place the base on your flat car with the strip stock on the bottom, tight against the side of the flatcar. Fit the strip stock on the other side of the car for a snug fit and glue it in place to your base.

The triangle support braces do not require precision but can be finicky. They need to be placed at right angles to the base, spaced sufficiently far apart to accommodate a weight between them, but centered enough that the weight does not throw the car off balance.

I eyeballed one of the triangle supports in place and held it there with a 1x1x1 angle plate while I placed some plastic cement on it. Then I moved the weight slightly to allow enough



clearance to add or remove the weight easily and cemented the other side in place. Later on, when the car is in use, I can place the 1x1x1 angle plate here for added stability [6].



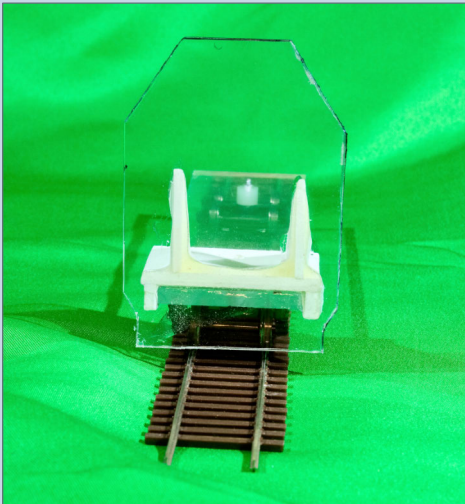
6. Shown assembled. Note that the two support triangles are spaced to accommodate a weight between them. The weight will help secure the gauge and mounting frame to the flatcar.

Attaching the clearance gauge cutout to the mounting frame is the one step that demands precision. Place the car, with its end still wrapped in aluminum foil, on a short piece of track. Place a weight – a 1x1x1 angle plate will work perfectly – on the other end of the track.

Put a piece of double-sided tape on your NMRA gauge tool and put it on the track, in clearance measurement position, with the tape facing the weight. Slide the NMRA tool up to the weight until it is attached firmly to the weight. The NMRA gauge should be perfectly centered on the track at this point, in measuring position, and the weight should hold it at a 90° angle from the track.

STEP 2: Assembly *Continued* ...

Put your gauge support on the aluminum-foil-covered car, facing the NMRA gauge tool. Place the clearance gauge you cut out in step one on the tracks, just in front of the NMRA gauge. Roll the car forward until your gauge cutout is sandwiched between the support base and the NMRA tool. If you made your clearance gauge from styrene, attach it with plastic cement, or epoxy if you used Lexan.

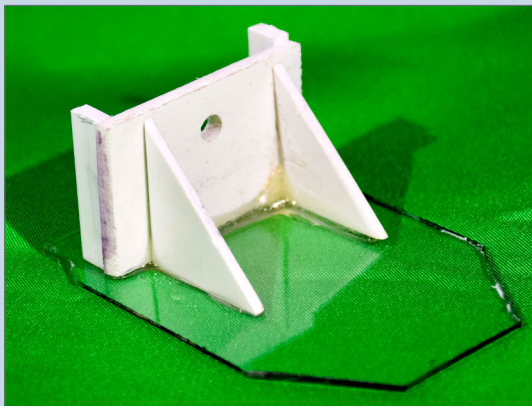


7. The gauge must be mounted to the brackets so that when the unit is mounted on the flat car, the gauge has sufficient clearance to allow for some vertical play in the track.

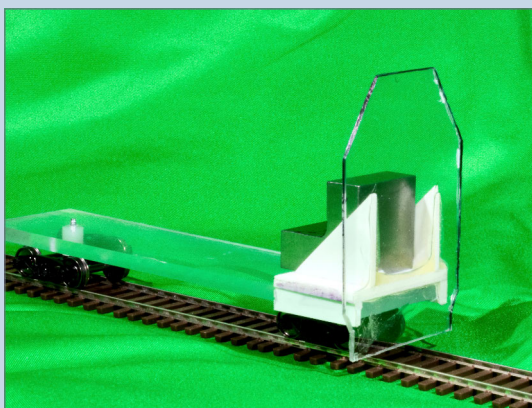
When the glue has hardened, carefully remove all those pieces of double-sided tape. The advantage of the mounting foam is that it sticks well yet is easily removable. Also, because it is thick, it's easy to get between the two parts to separate them. The tool should slip off the aluminum foil easily [8].

Your new tool should rest easily on the car, stay on, but slip off with gentle pressure. You can place a weight between the triangle supports for additional security if desired [9].





8. The clearance gauge frame should remove easily from the aluminum. You should be able to snap your new tool to its car when you need it, and be easily removable when you're done.



9. The clearance gauge is complete and mounted to the MicroMark inspection car.

Place the car on the track with the clearance gauge at the front. Push it along the track – does it hit at any point? A free-rolling gauge can be pushed ahead and will stop (or jolt) when it hits something. That's the area where you need to adjust the clearance. You can also use this tool to help you place the roof on adjacent track structures [10].

STEP 2: Assembly *Continued* ...



10. The track clearance gauge tool is earning its keep measuring the rail clearance for this rock face.



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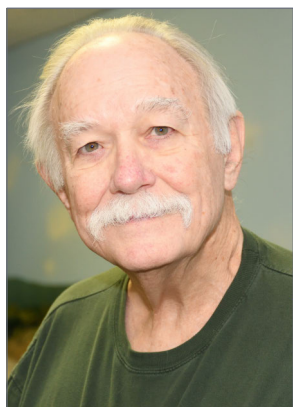


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J. Scott Walton



Scott retired in 2019 after over 50 years in the computer business. In that period, he was an application programmer, database administrator, trainer and operating system support person. He worked for several companies, including 20 years as an independent consultant doing training and consulting in locations around the country and even overseas.

He is still involved with computers, but mostly because of his model railroad. His wife says the railroad is made with wire instead of wood and rail. That is because of the amount of wire used to put detection and signaling on the layout (and of course that takes a computer and JMRI).

Scott models the Pennsylvania Railroad in the late '40s, somewhere in western Pennsylvania. While no railroad is ever “complete,” his is still lacking most of the scenery. The main loop (double track) circles an inner peninsula which contains the yard. Temporary signals are in place (and working), but the double-head Pennsy position light signals are only in place in a few locations.

When not working on the railroad, Scott is out on his bike, with a group of bikes (the human powered kind). Or he might be reading with one of his cats on his lap. Or cooking, or simply talking to his wife ■



The case for high narrow benchwork

MRH Running Extra | February 2021



JOE FUGATE REVIEWS HIGH NARROW
BENCHWORK AS A LAYOUT DESIGN BEST PRACTICE ...

WHEN I FIRST STARTED DESIGNING MY ORIGINAL SISKIYOU LINE LAYOUT (Siskiyou Line 1) in the early 1990s, I definitely wanted a walk-around design with the shelves narrow enough I would not ever need a pop-up for access.



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← 1. At first I was concerned about putting the layout shelf just above my shoulder height at about mouth height for me, or 65" off the floor for the track height. I found as long as there was not any switching to speak of, this track height worked well for me – but a bit less so for much shorter folks, as I'm 6'-3". I give recommended guidelines in this article for dos and don'ts based on my layout experiences.

In terms of ergonomic design, I knew I needed to keep the shelves less than 36" wide if I wanted to reach everything.

It seemed like 24" wide shelves would be ideal, allowing plenty of room for scenery and allowing the track to be far enough from the fascia that derailments would not send things careening to the floor.



2. The higher and more narrow benchwork design on my Siskiyou Line 1 created a perfect track level for operation such as on this helper job. Track just below eye level worked perfectly here for my model railroading buddy, Dale Trongale.



3 (top). Even though my Tenmile Creek scene was only about 12 inches deep, it looked great. The higher track level also made it easy to hide the road behind a small rise and have it convincingly disappear into the trees around a corner.

4 (bottom). Even from a slightly lower angle than eye view for me, the shallow Tenmile Creek scene still looked great.



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But I wanted to explore even narrower layout shelves in an attempt to get still more layout into the space, but I felt extremely leery of making the shelf too narrow.

Let's look at the pros and cons of layout design using high narrow benchwork shelves.

5, 6. My Siskiyou Line 1 track plan (Upper and Lower levels on the right) shows off the more linear walkaround nature of the track routing from using the narrow benchwork. Making the benchwork higher also presents more impressive views of the trains in a scene.

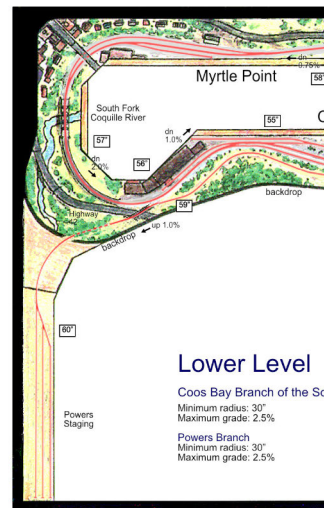
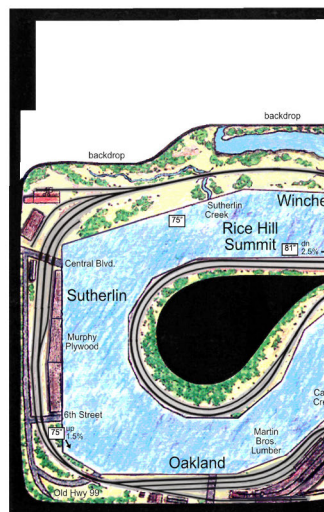
PROS OF HIGH NARROW BENCHWORK

High narrow benchwork practically forces a walkaround layout design – that is a design with no popup access hatches. Walkaround design encourages better track planning, helping avoid those confusing “bowl of spaghetti” track plans.

Linear design: By its nature, a real railroad is linear, taking the most direct route between point A and point B, depending on the terrain. Narrow walkaround benchwork forces more linear thinking with your track plan, which makes for a model railroad that more closely mirrors a real railroad.

Track everywhere on a layout comes from the early days of the hobby where you just put a big table into a room and then tried to cram the most track you could onto the top of the table. The resulting track routing that twists and turns every which way and looks more like a theme park ride than it does a real railroad.

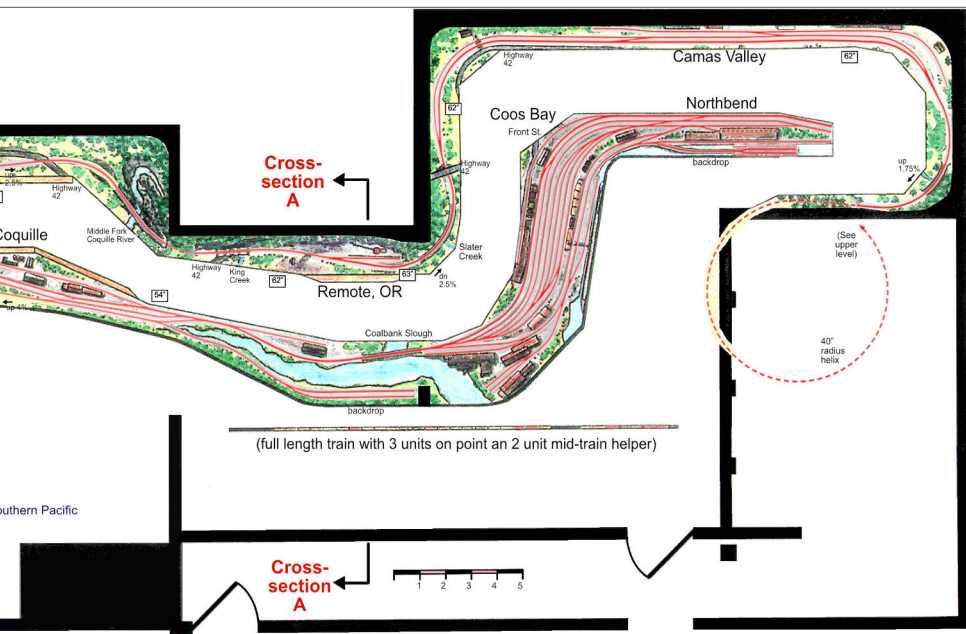
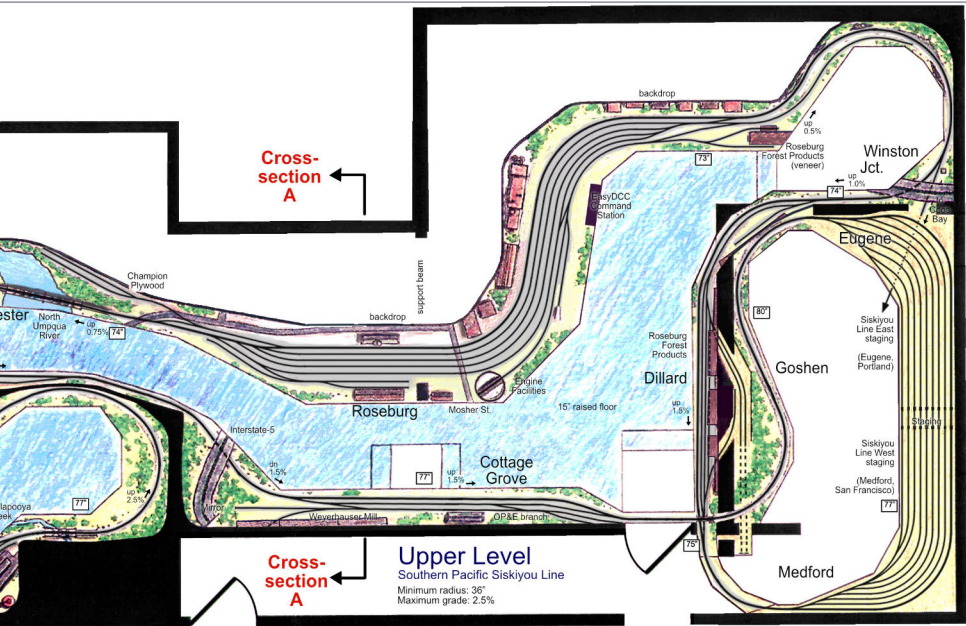
Such complex twisty routes can only be achieved using a deep table benchwork configuration – the very opposite of a walkaround design. Scenes deeper than



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about 30 inches will need an access hatch to reach the track and service the layout.

Walkaround design with shelf-type benchwork encourages simpler track plans (think: easier to build and less costly), and gives an increased sense of going somewhere. A more linear run can feel longer than just repeatedly going back and forth on a tabletop in the same space.

Easier staging: With higher benchwork, entire trains can be hidden or staged with just slight changes in grade. You can put track behind scenery (like trees or scenic flats) and hide a train there. This can be especially helpful if you are modeling flatter locations such as the plains states.

More layout space options: Using a high narrow shelf layout design opens up more options for places you can build a layout. For instance, you may be able to build a layout above furniture or appliances and still have access to them.

By keeping the higher shelf narrow enough (under 18 inches wide), the floor space underneath can be totally available for other uses as well.

And it goes without saying, higher benchwork can make duck-unders much easier to get under, turning them into almost a “crouch under” or even a “nod under.”

Better view: With the higher track level, curves seem less sharp, especially when viewed from the inside. Trains look longer and more realistic, since the higher track level can make it harder to see the loco and caboose at the same time.

Trackside details become much more visible with the higher track level. Telegraph poles, switch stands, signals, and other such details near the track become more obvious.

The sides of the rail become more visible, so using smaller, more scale rail heights become more obvious. Also, extra track





7. This scene on my Siskiyou Line 1 lower deck Coos Bay branch is only about 14" deep yet it looks quite believable. After seeing first hand what can be done scenically with narrower scenes, I have no qualms about doing still more narrow scenes on Siskiyou Line 2. The narrower layout shelf lets you get more layout into the space and requires you to build less scenery – both strong layout design benefits not to be overlooked.

detailing such as joint bars with bolts and track weathering becomes a lot more noticeable.

Scenery compression: With a higher shelf level, you can compress scenery more and it won't be noticed as much. Forced perspective of background items can be more effective, such as using smaller scale structures in the background.

Spacing along your line of sight can be compressed and not be obvious. You can put trees closer together, make structures more shallow, or make roads narrower than scale and no one will notice. It also makes using scenic flats less obvious.



8. Although you can't easily tell from this eye level view, the back half of the abutment is narrower than the front half [9] in this scene. This high level benchwork trick enabled me to fit a mirror into the trees and make this scene look much deeper [10].



9. Notice from this overhead view, the back half of the abutment is much narrower than the front half!



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With a higher shelf level, it's much more likely you can't even see the backside of structures, trees, or rock cuts, so you don't need to model them at all and no one will be the wiser.

Finally, you don't have to make the back half the same depth as the front half! In one scene [8, 9, 10], I made the back half of the bridge abutment narrower than the front half and in the 26 years of the layout's existence, no one ever noticed!

The space savings allowed me to add more foreground to the scene in front of the track and gave me the extra working space behind the track to add a mirror to the scene, adding the illusion that the scene depth went back much further than it really did.



10. The final scene with the mirror has an amazing amount of depth for a scene that's only about 9" deep on the far left and about 16" deep on the far right. The mirror starts about halfway between the bottom of the bridge and the top of the Uhaul. The mirror sits just in front of the backdrop on the left edge and sits perfectly perpendicular with the road. The mirror has trees draped over the top edge to disguise it. The high benchwork level makes this all work very well visually in such a narrow space.



11. The high benchwork on my Siskiyou Line 1 presented some reach challenges, especially for shorter people like MRH Staffer Jeff Shultz shown here.

Cons of high narrow benchwork

High narrow benchwork isn't all sunshine and rose petals – it does have some notable cons.

Eye level varies: Obviously, we're not all the same size, which means eye level varies. The perfect eye level for one person can be way too high for another. (See the next section on recommended dimensions for options).

This means, of course, that youngsters and shorter people can't see the layout. To address this problem, you need to provide steps, stools, or some raised flooring ramps along the layout. For example, inviting the neighbor family over to see the layout will be a problem if their small children can't easily see the layout.

Forces standing: Higher benchwork pretty much forces operators and viewers to stand to see and work with the



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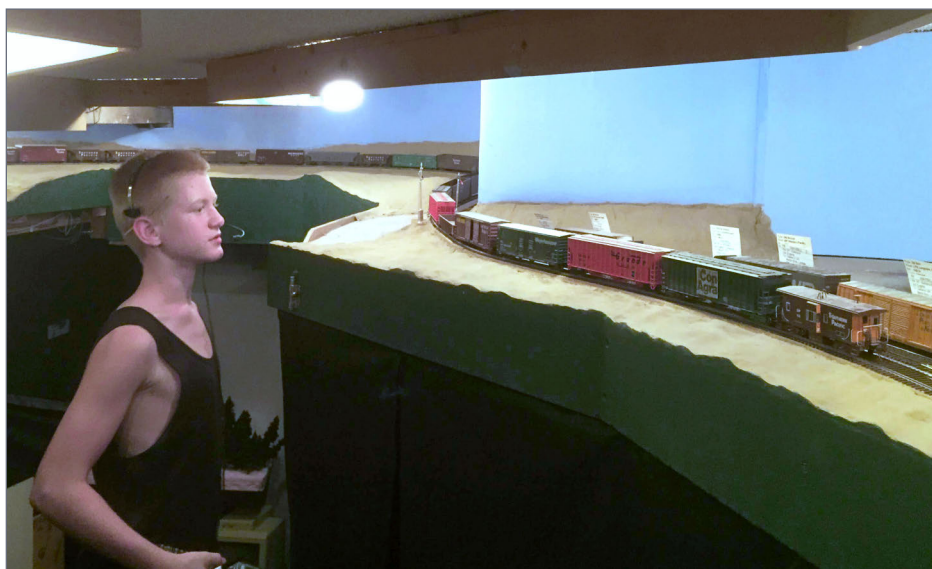
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layout. For several hour-long op sessions, prolonged standing can get old. However, for those with desk jobs, this may actually be a good thing!

Forces 24 inches or less: By making the benchwork higher, you're making it much harder to bend over the layout, forcing everything to be within arm's reach, which generally speaking comes to about 24 inches max. Under 18 inches from the aisle works even better.

Forces more prep work: Installing and finishing the backdrop and lighting before starting serious construction of the layout become even more important if the layout will be closer to eye level.



12. When my grandson Bobby was younger, he loved to run trains during op sessions on Siksiyou Line 1, but he was “height challenged” as a youngster with my high narrow benchwork. For younger folks, the high narrow benchwork can be too high to see easily unless you provide step stools.

Can have its own access problems: For a high narrow shelf-style layout, a walkaround design more or less becomes a requirement. Having to always follow the train around the layout can be tiring – although for those with a desk job, the extra exercise can actually be a benefit.

Making the benchwork higher can make reach more difficult, which can delay yard operations. The last thing we need with our already too-busy yard (because of our compressed mainline length) is to slow down yard operation!

Access can be awkward if you make the shelf particularly high. You will be tempted to rush maintenance activities because accessing things has become more difficult.

Doing scenic detail work at the workbench needs to be given more serious consideration. For example, putting a structure scene on a removable base so you can detail it at the workbench instead of on the layout where it's harder to reach.



13. The highest point on my Siskiyou Line 1 layout came to 65" from the floor. For me at 6'-3" [1], this was right at my mouth level. But as you can see from this photo, some of my shorter operators found this layout max level to be a bit excessive!



High level scenes can also become more difficult to photograph. Most tripods only go to 72" or so, and if the track level is already 65" off the floor, getting the camera high enough to see everything can be tricky. Taller tripods can get costly and they're easier to topple – bouncing a several hundred-dollar digital SLR or video camera off the floor isn't known to make it operate better!

Reaching the backdrop or the lighting to work on them becomes more difficult when the layout level gets higher.

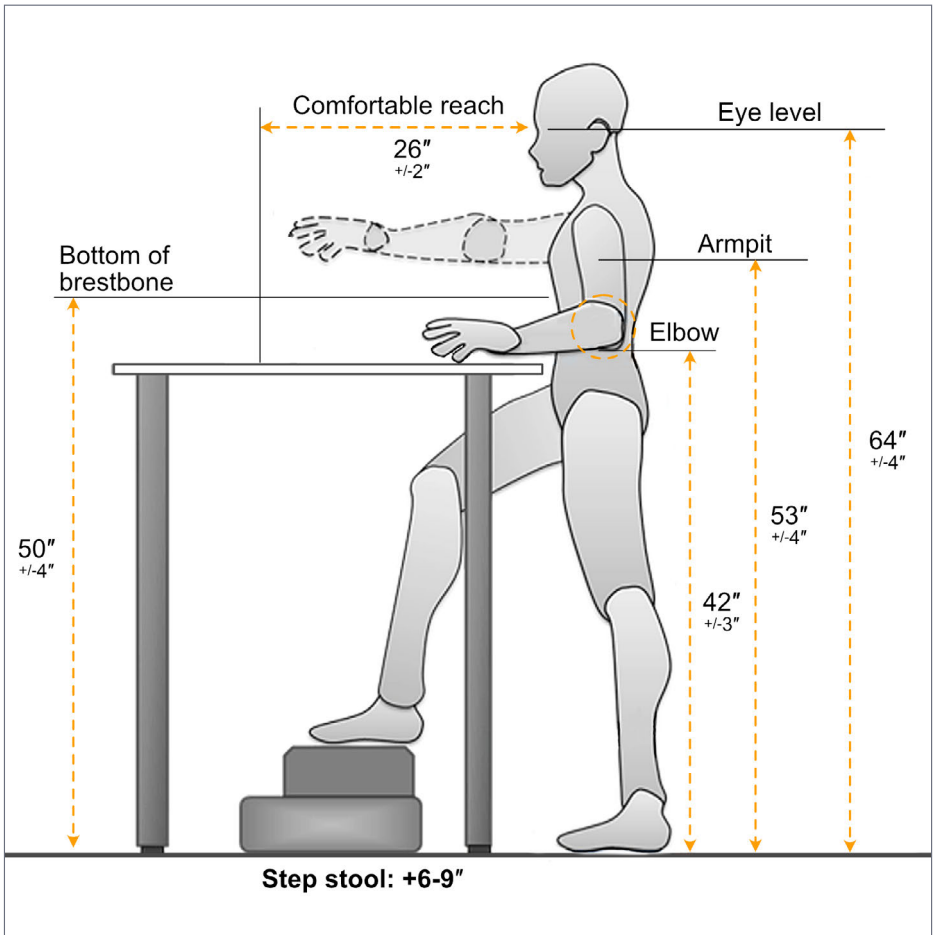
Increases risk of damage: The higher you make the benchwork level, the longer the distance to the floor. Combine high level benchwork with narrow benchwork and track closer to the front edge of the layout can be a trip to the floor just waiting to happen.

Mishaps on unfinished portions of the layout become even more of a threat when the distance to the floor gets greater.

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High narrow benchwork dimension guidelines

What do I recommend as the limits of high narrow benchwork shelf height? Let's look at North American ergonomic study data to determine some good values.



14. This ergonomics chart uses data on the typical North American body size range and gives recommendations on median measurements and how much variation typically occurs in the general population.



Based on [14], I find the ideal track height to be the bottom of my breastbone, or 50" plus or minus 4 inches. That gives us 46" – 54" as ideal. Since I'm rather tall at 6'-3" the upper end around 54" is ideal for me. The ideal height applies especially in areas where you do switching such as in yards or major industrial areas.

As far as the lowest level for the track, I would set it at my elbow, or per the diagram, 42" plus or minus 3 inches. That gives us 39" to 45" as the absolute lowest track level for a "higher" layout.

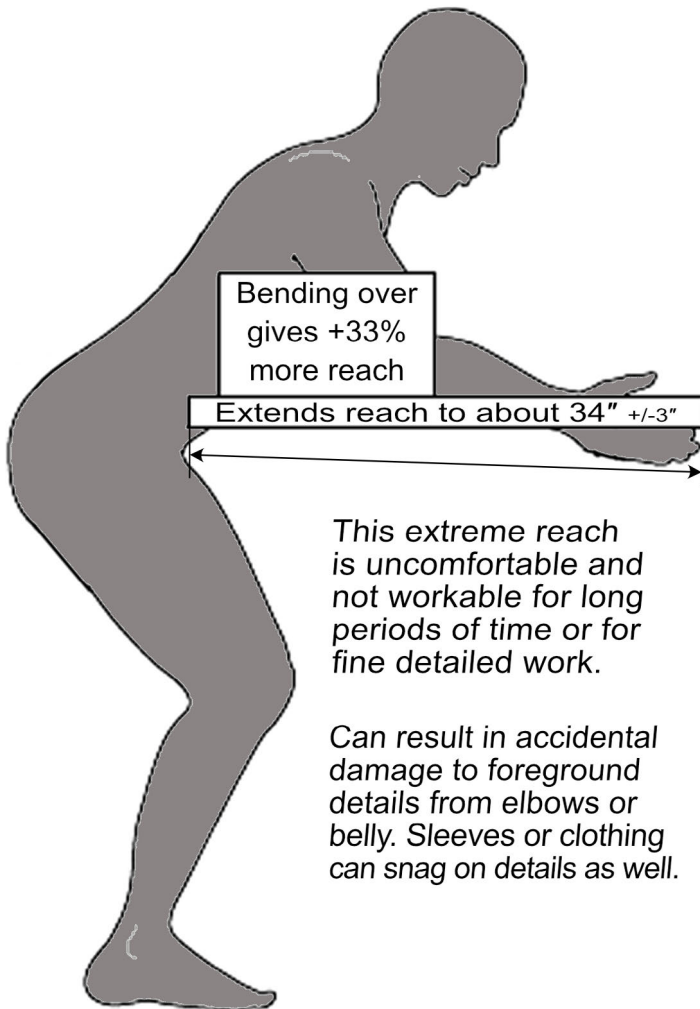
For areas where you expect to do switching, do not make it any higher than armpit height, or 53" plus or minus 4 inches per the diagram [14]. That's a range of 49" to 57" above the floor for the track level.

If there isn't any switching to speak of but the trains just run through the scene, you can push toward eye level, or about 64" plus or minus 4 inches per the diagram. That's a range of 60" to 68" maximum. Be careful with this one because you can get the trains up so high that your shorter operators will struggle to even see them [13].

Notice you can push these limits up if you're okay having your operators use a step stool in some cases. Your other option is to add a 6-9" shelf in front of your benchwork to allow shorter operators to step up and see.

What do I recommend as the limits of high narrow benchwork shelf width? The biggest factor here is comfortable reach. Even though you may be able to bend over and reach farther, that will not be a comfortable position for doing much extended work, and it can result in damage to scenery, structures, and layout details.

Your basic comfortable reach per diagram [14] comes in at 26" plus or minus two inches. This means your typical shelf depth should be 24" – 28" if you want the most comfortable conditions for working on the layout.



15. You can extend your reach up to +33% by bending over as shown here, but this is not a comfortable position to work in and you can do damage to the layout if you rely on this very much. Making your layout shelf this wide should be only for infrequent special cases or you may find you will be sorry later.



Diagram [15] shows you can get up to 33% more shelf width if you're willing to be less comfortable and bend over to extend your reach. That gives us a base width of 34" plus or minus 3 inches. This means you can make the back edge of a layout shelf from 31" – 37" wide and you can still reach it (check your specific reach to be sure).

Notice anything beyond about 34" wide and you will need to provide some other access such as a popup hatch.

As for minimum width, I've found even 9-12" deep can allow for some nice scenery when the benchwork is breastbone height or above [5, 6].

I find 6" wide to be the absolute minimum I can go in HO, and that's pushing it (factor up accordingly for larger scales). There's not much room for scenery behind the track if you want to still keep the track far enough from the fascia that trains going on the ground still stay on the layout.

Summary

Based on this information, you should now be better prepared to know the limits of layout shelf height and width when designing a layout. Use these measurements as a guide and also check your own body dimensions to see what's ideal for you personally when designing a home layout.

For clubs, the general ergonomic range can be quite useful for setting a general height and shelf width somewhere in the middle, making it work adequately for all member body sizes. ☑



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THE AH-HAH MOMENT

column



MRH Running Extra | February 2021

JOE FUGATE TRIES A NEW PAINT MIXER
FROM AN MRH FORUM SUGGESTION ...



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SOMETIMES IT TAKES THINKING OUTSIDE THE BOX TO SEE HOW an item could be used in ways not intended. Recently Bill Brillinger posted on [his MRH forum blog](#) about searching for a more gentle paint mixer that will do many bottles at once.

The paint mixer solutions I've seen involve things like taking one bottle at a time and attaching it to some sort of recipricating device.

While paint does get mixed effectively, it's one bottle at a time and it can generate a lot of bubbles or even froth the paint.

Bill found a hot dog heater and repurposed it to mix his paint, up to a dozen bottles at a time. Plus the gentle rotation does an effective job without putting bubbles into the paint. *Ah-hah!*

I did some searching on Amazon and I ordered a relatively inexpensive hot dog warmer for just \$35. I set it up and started using it [2].

Obviously, I leave the heat turned off! I noticed a few things as well.

First, glass bottles (such as used by Testors Model Master) work great because they have good mass and sit down onto the rollers nicely. The plastic bottles (such as Vallejo or Badger ModelFlex) can tend to slip.

I found setting the Vallejo bottles end-to-end helps them roll better because if one bottle starts to slip the other bottle will catch and keep them both rotating. The other trick is to get some small rubber bands and wrap them around the plastic bottles to increase the friction. I include some links for rubber bands in this article's shopping list. They work great! ☒



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THE AH-HAH MOMENT | 2

1. Based on Bill Brillinger's suggestion, I found this relatively inexpensive hot-dog warmer on Amazon for \$35. I discarded the top part and just used the bottom unit. The heat can be turned off, so it just provides a gentle rotating action. If you want to make double sure, you can take the bottom off and disconnect the heat switch.

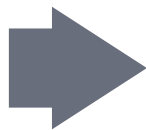


2. Here's my paint mixer all set up and in operation. I like the slow, gentle rotation so I avoid frothing the paint or generating bubbles. I just set it up and rotate my paint bottles about 30 minutes before use. See the text for more. "Delicious and refreshing" must be the Coca Cola, it's certainly not the paint!

To get a shopping list for this article, visit the *MRH* website at this link: mrhmag.com/magazine/running-extra/2021-02/ah-hah-moment

Bonus section!

Here are all the pages from
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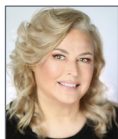
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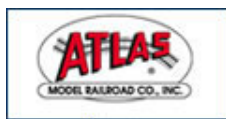
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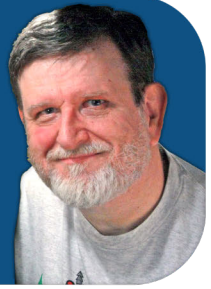


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PUBLISHER'S MUSINGS



GUEST EDITORIAL

Model Railroad Hobbyist | February 2021

JEFF PALMER INTERVIEWS **GORDY ROBINSON** ABOUT **NMRAX** ...



I FIRST MET GORDY ROBINSON IN APRIL 2020 WHEN I WAS ASKED TO DO A SCENERY CLINIC FOR NMRAX. Let's chat with Gordy and learn how NMRAX came to be.



Gordy: Actually the concepts for NMRAX began in 2018. I started talking about "virtual" sessions, as I live in a remote & rural area, so the concept for "virtual meetings" was born out of necessity.

Early meetings within my own Division were conducted on "Free Conference Call", using their meeting facilities. Like "Zoom", when there are only a few people meeting, it's a great environment, but as the audience grows, it's hard to control the chaos.

In February of 2020, I was working with the NMRA Social Media Team to do a "Facebook Live" event with the Twin Cities Division (TCD). People from around the world took notice of the event.

In early April, the pandemic started taking its toll on local meetings and conventions.

The team of Martyn Jenkins, Jordan Kramer, Gert “Speed” Muller, Brad Anderson and I recruited 24 clinicians who were willing to live stream using Facebook, and NMRax was born.

Our biggest problem was controlling the transition from clinic-to-clinic. It was awkward and difficult until Martyn Jenkins turned us on to OBS Studio (Open Broadcaster Software Studio). We still had rough spots, but the overall presentation was smooth and transparent to the audience.

On April 24th, the first NMRax online event went live and the rest is history.

Jeff: What are your plans in the near term?

Gordy: Our goal is to move more into hands-on type of clinics like Make-n-Takes. The goal is to provide more in-depth education.

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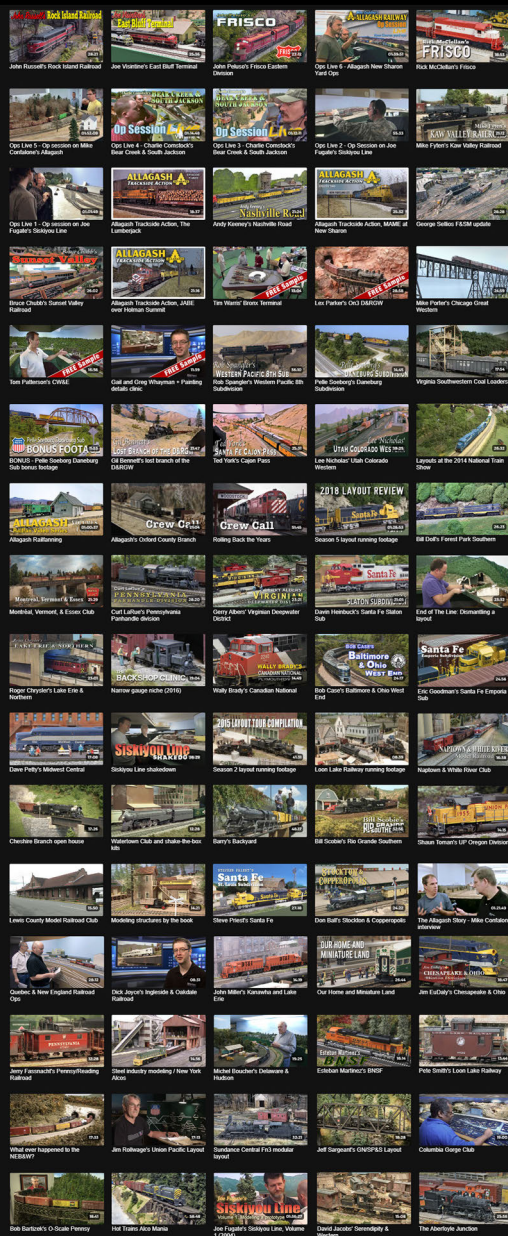
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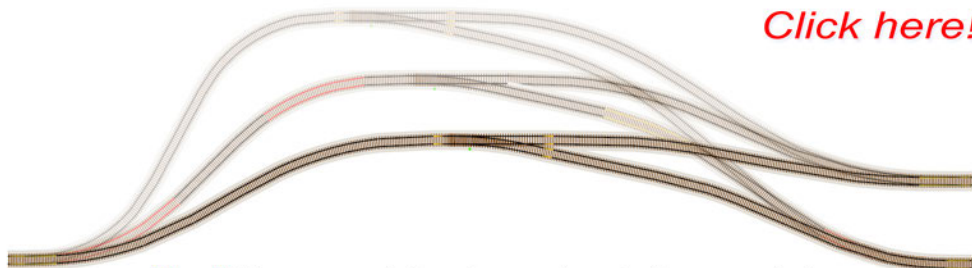


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PUBLISHER'S MUSINGS | 3

Our first rollout of this type of broadcast will occur in January 2021. I think this will help revolutionize how we (the NMRA) do hobby education.

Jeff: Do you have a feeling for how NMRAX has impacted the NMRA overall?

Gordy: Not directly. We only know the impact by channel subscribers, views, and comments made on social media. There are no tools in place to empirically quantify our impact, but let me provide you with an anecdotal impact example.

I live about 200 meters from a neighbor who has contacted me because of NMRAX and has re-joined the NMRA because of the value he experienced viewing NMRAX. We all know you don't have to be an NMRA member to be a model railroader – look at the world class layout of Rod Stewart.



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GET READY, GET SET, MODEL!



John Ward of Mentor, OH submitted this impressive entry for the 2020 NMRBO contest.

THE 2021 WALTHERS NATIONAL MODEL RAILROAD BUILD-OFF IS FINALLY HERE!

The contest that brings you cash prizes, bragging rights, and the fun of participating along with fellow modelers to show off your skills on a national stage!

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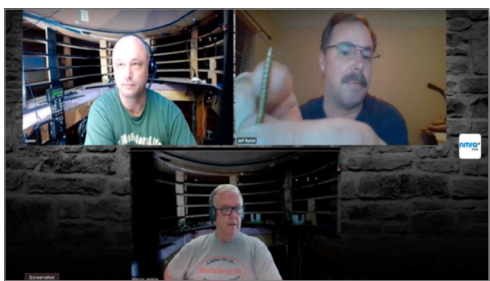
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People are building layouts and running trains regardless. NMRAx is reaching for these people.

NMRAx is a grass roots event that is bringing a lot of attention to an organization that has a history of doing “good” for the hobby. NMRAx is exposing a class of model railroaders that, not by any fault of the NMRA, has been ignored.

NMRAx also allows the talents of those who have been working behind the scenes, unknown to the NMRA community, to appear on a larger stage.

My view of the NMRA is, every model railroader for over 80 years has benefitted in some way from the activities of the NMRA. My role in the NMRA gives me the opportunity to work with many of the people who support standards within the hobby; i.e. track, switches, power, etc.



This impacts everyone who runs a train. If we fail to provide a benefit to model railroaders, we will not be a necessary part of the world of model railroading, we will cease to exist.

NMRAx is what I and the team were able to do as ordinary members of the NMRA – it brought light to those dark areas (areas where the individual model railroader lacks knowledge) so we could educate them.



Doing this keeps me founded in my goals of “Acting with honesty, integrity, and doing right for model railroaders.”



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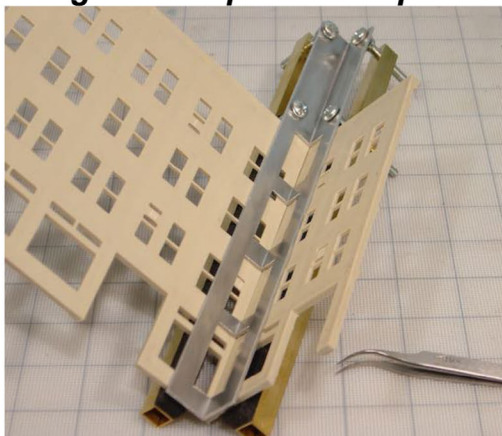
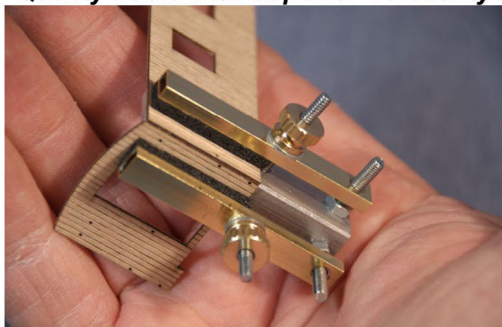
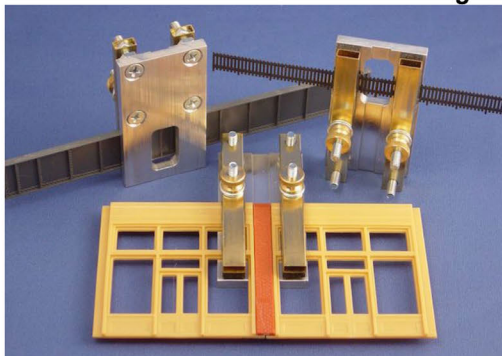
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These virtual meetings need to continue past the pandemic days. One of the things we've learned is there are more than just shut-in's (sick, elderly, and injured) who benefit from virtual meetings.

We're seeing members attend virtual meetings that have not attended a face-to-face meeting in years.

We got inexperienced modelers who know how to use Google but don't know to reach out to the NMRA. For too long we have allowed model railroaders to be left behind.

If NMRAx taught us anything, it's that model railroading is bigger what we expected.

It connected us and showed us "you don't have to be an NMRA member to be a model railroader."

Interest is alive and doing well. For years we've been told "model railroading is dying", yet 2020 has been a banner year for the hobby as to audience and traffic levels.

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FAST TRACKS

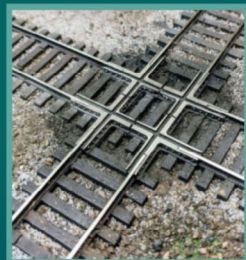
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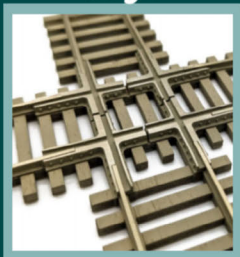
Building an accurate crossing has long been a challenge in our hobby.

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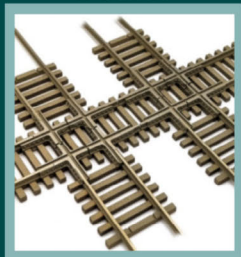
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HO scale 90 degree versions are the first in what will be a large library of popular sizes

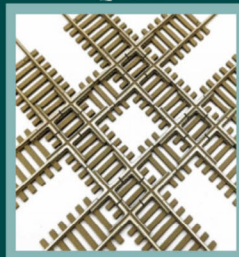
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I'm left with the question "Why do these modelers not know about the NMRA?"

Every train set, loco, or car sold has to meet the NMRA standards. The NMRA is a major component of the hobby, yet virtually no one knows this.

Now, we need to do our work and figure out how to show this community the value of the NMRA.

Jeff: I for one have enjoyed the NMRAX sessions and videos. The education presented is top notch. Gordy and the team have made the NMRAX experience pleasurable and full of good information.

If you're not a YouTube subscriber, then go to Google and do a search for "NMRAX." You will get a list of many videos. Pick your pleasure – and remember to subscribe (it's free) if you want to be informed of more NMRAX events in the future.

Joe Fugate: Speaking of web events

We (MRH Media) have started doing a monthly live event for TrainMasters TV members as well: we call it the MRH QAT session, featuring various MRH Staff members.

The general agenda includes some updates on what's coming to TMTV, a mini-presentation with helpful tips and some show-and-tell.

Then we open up the floor to questions. Ask any hobby question you want and we will do our best to answer it. Some of the other modelers may also chime in with good insights. If



MRH QAT
MRH Questions, Answers, and Tips
LIVE
Saturday, Feb 6
Join us: 11am PST

Agenda includes:

- TMTV coming attractions
- Jeff Shultz's home layout
- Joe quick tips
- Attendee Q/A

QAT #2

 Joe Fugate

 Jeff Shultz



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we can't directly answer your question completely on the spot, we will make notes and plan on giving a more in-depth answer in next month's live MRH QAT.

We record each live session and post it on TMTV for members to watch if they could not make the live session.

We're planning the next MRH QAT session to be Saturday, March 6th. Watch for the registration link on the TMTV site and in our weekly MRH reader email blasts.

MyLayout has come back!

We've also posted our very first MyLayout story from Lee Bishop. Given our limited ability right now to go shoot layouts, MyLayout allows you to video your layout, a friend's layout, or a club layout and send it to us to become a MyLayout segment.

If you might be willing to do a story on your layout, just visit this link for the details on how to submit your layout video:

mrhmag.com/tmtv/submitting-to-mylayout

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LAST ISSUE'S RATINGS

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

4.8 The Santa Rita mini-layout

4.8 What's Neat: Four kinds of conifers, ...

4.8 January 2021 news

Issue overall: **4.4**

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 | February 2021

Compiled by **JOE FUGATE**



Adding lighted vehicles to an overpass

We find this thread by *MRH* forum member **mayor79** to show a fascinating but seldom discussed layout enhancement – lighted vehicles! From this thread:

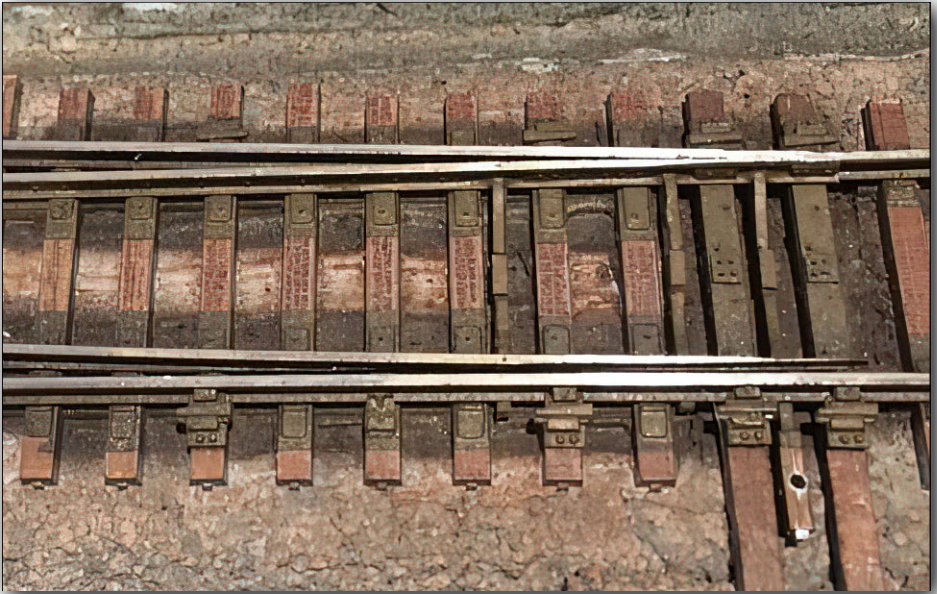
“For this portion of the layout what I decided to do was light the cars and street lights on the bridge. But I didn’t just want them on all the time, I wanted them to respond to the layout lighting. So I’m learning the Arduino. It wasn’t as hard as I thought it would be.”

Visit this fascinating thread to learn more!



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

▶ **MRH’S MONTHLY GREAT MODELER POSTS**



1. Mark Paul posted this photo of his realistic HO turnout throwbars and how he makes them on the MRH forum.

Proto:87 turnouts

MRH forum member **MikeHughes** (Mike Hughes) is researching how to build more realistic HO turnouts. Member **Nsma-paul** (Mark Paul) posted some of his amazing turnout modeling work:

“I use z scale pcb Xover ties as my throw bars and secondary support bars on my switch points. The point rails are soldered to 3/32 brass bar stock on the work bench, then after in place on the switch the bar stock is soldered to the z scale pcb ties. The throw bar assembly is made at the bench, then soldered to the points on the layout.”

See Mike’s thread for more great insights being shared!

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



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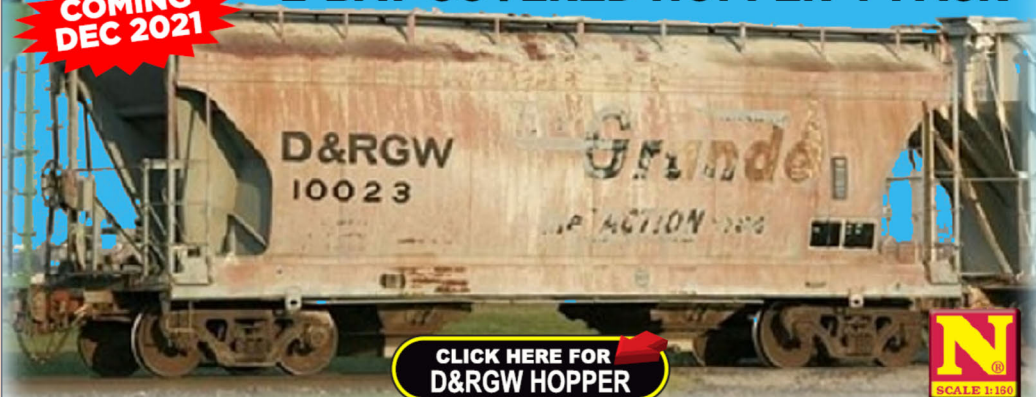
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2. Chris Monje built this nice-looking rock cut using a Woodland Scenics facet rock mold in different orientations to hide the repetition.

Modeling a nice corner rock cut

Forum member **steamhog** (Chris Monje) details how he built this nice rock cut:

“This rock cut uses the Woodland Scenics facet rock mold multiple times. Although this might make a geologist cringe, changing orientations of the same mold conceals the repetition. I used three iterations of the facet mold and then filled in the gaps with casting plaster.

In this case, the “rock cut” suggests a reason for the track to curve. It’s also at the edge of the layout, preventing a derailment from sending something over the edge. I’ve added some grey chalk to some rock, and I also sprinkled a light coat of graphite to give the rocks some sparkle.”

Check out this thread and ask Chris for more details!

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



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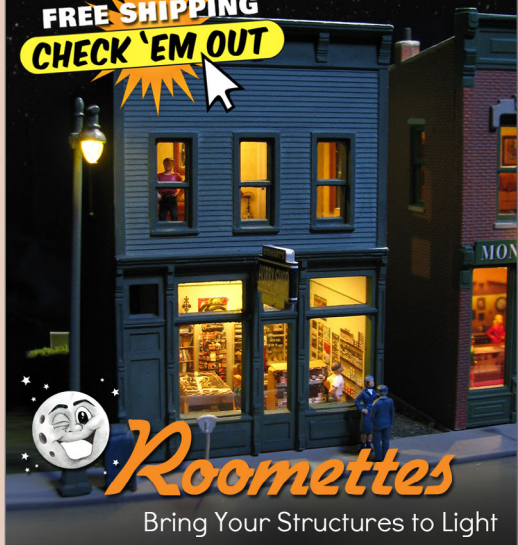
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3. Jeff Johnston posted some of his DCC tricks on a recent thread. One clever trick uses foam blocks to see if things will fit.

DCC decoders and stay alive – will it all fit?

MRH forum member **Jeff Johnston** posted a recent thread outlining some of his home made tools to make DCC installs easier.

"I'm in the midst of upgrading several brass steam locomotives from straight DCC to full sound DCC with Keep Alive/Current-Keeper devices. I cut out styrofoam sample pieces sized to match the Soundtraxx and TCS keep alive offerings. I use these when making my initial assessment of what can fit inside my often-compact logging steam locos."

Visit Jeff's thread and follow his DCC tool tips!

[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 from kevin's Arcata & Mad River showing his new MP15 AC to replace the aging GE 44 toners. The bottom photo catches Penn Central GP38 and two F7s pulling a freight on Tom Haag's railroad. That's some great scenery in an area that's only 10" wide! Make sure to visit the weekly photo fun threads on the MRH forum to get more inspiring photos such as these.



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WHAT'S NEAT

column



Model Railroad Hobbyist | February 2021

KEN PATTERSON'S COLUMN THIS MONTH ...



VIEW READER
COMMENTS

- Visiting Austin and Steve Allard
- Modeling ideas from above: Chasing the 4014
- Building a 4-LED Stratolite beacon



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PHOTOS AND VIDEO OF SUPERB MODELS

ON THIS MONTH'S WHAT'S NEAT VIDEO, Ken visits the double-decker father-and-son layouts of Steve and Austin Allard, What's Neat's new drone pilot Dan Scheidell takes us on a chase of UP 4014, and James Rigier shows us how to make our own HO scale (or larger) four-LED Stratolite beacons, including writing the code to make it work.

Austin and Steve Allard's Father and Son layouts



1. Ken visits father-and-son model railroaders Steve and Austin Allard, who have spent the past six months building separate layouts on double-decker around-the-wall benchwork.



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2. The two levels are not connected, with Austin's DCC-equipped layout on the top level and Steve's DC layout on the bottom level.

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3. Steve's lower level can be upgraded to DCC, once Austin helps him add decoders to his locomotives, and a few more track feeders are added.

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4. Both levels are built for long trains, with mainline curve radii starting at 48" and going up to 72". Austin's layout depicts the Union Pacific Jefferson City Sub in 2013.



5. Austin's layout, which is at 53½" above the floor, features a two-track mainline and lots of yard space for his rolling stock and locomotives.



6. Steve's layout, at around 37" above the floor, features storage drawers for his trains instead of a yard.



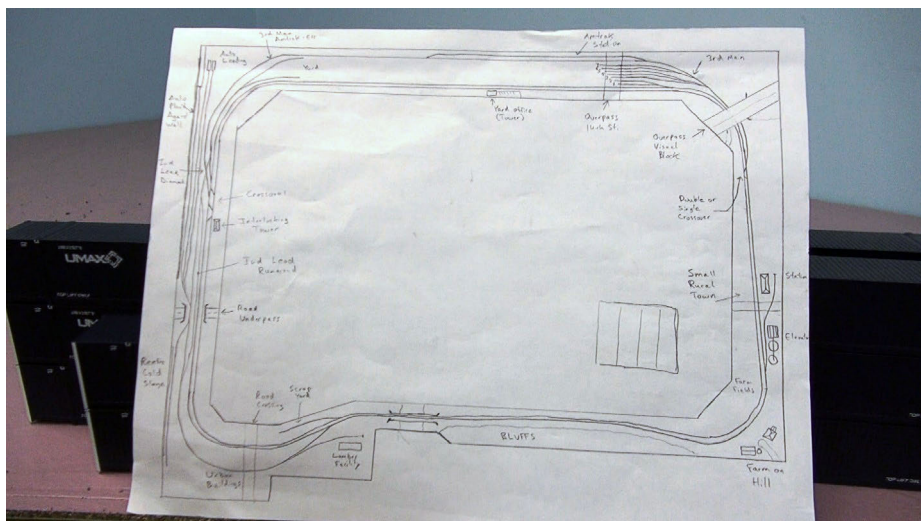
7. This river section was included on the original layout plans, and hints at the scenery and structures that will be added to Austin's level, now that the layout is operational.



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8. Jeff Meyer drew the original layout plan for Austin's layout.

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Modeling ideas from above – chasing the UP 4014



9. Dan Scheidell, also known as Railfan Dan (Instagram: www.instagram.com/railfan_dan14, YouTube: www.youtube.com/channel/UCSLspsNY3KJstSs2NqaKQbA) chases trains with a drone. In this month's video he chases the UP 4014 on its trip between Salt Lake City and Las Vegas.



10. The Union Pacific special led by the 4014 adds a bright yellow note to the muted browns and greens of the desert terrain.



Making your own four-LED Stratolite beacons



11. Santa Fe 2233 is an Athearn Genesis model of a GP7u. Except for an upgrade to LEDs, this unit is as it came from the factory, with Tsunami sound. The rotary beacon has a flash pattern that mimics the brightness of a Stratolite, but without any real rotation.

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12. Santa Fe 7494 is a Rapido model of a B36-7. Rapido was the first manufacturer to deliver a production model with a four light Stratolite beacon. This model pushed James to attempt to create his own rotary beacons for other locomotives so that they would look good side by side.

To make the four-LED Stratolite work, James set up an Arduino with a bread board and four LEDs. Then he wrote an Arduino sketch to animate the lights in a Stratolite pattern. Please find two Arduino sketches – one for the Arduino itself and one for the AtTiny13a – and a readme file in the following download: [downgit.github.io/#/home?url=https://github.com/jpregier/ModelRailroadingProjects/tree/master/FourLedStratolite](https://github.com/jpregier/ModelRailroadingProjects/tree/master/FourLedStratolite).



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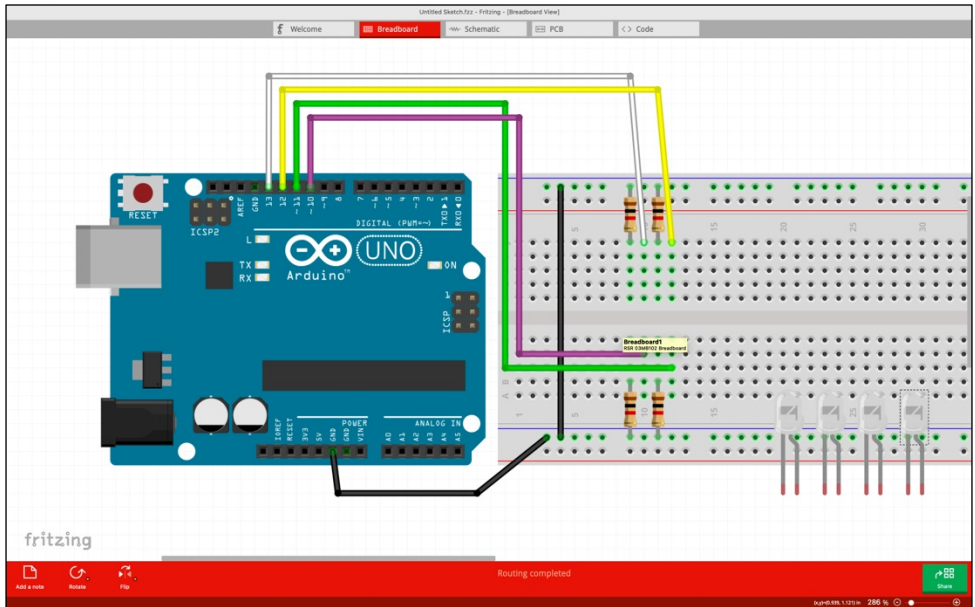
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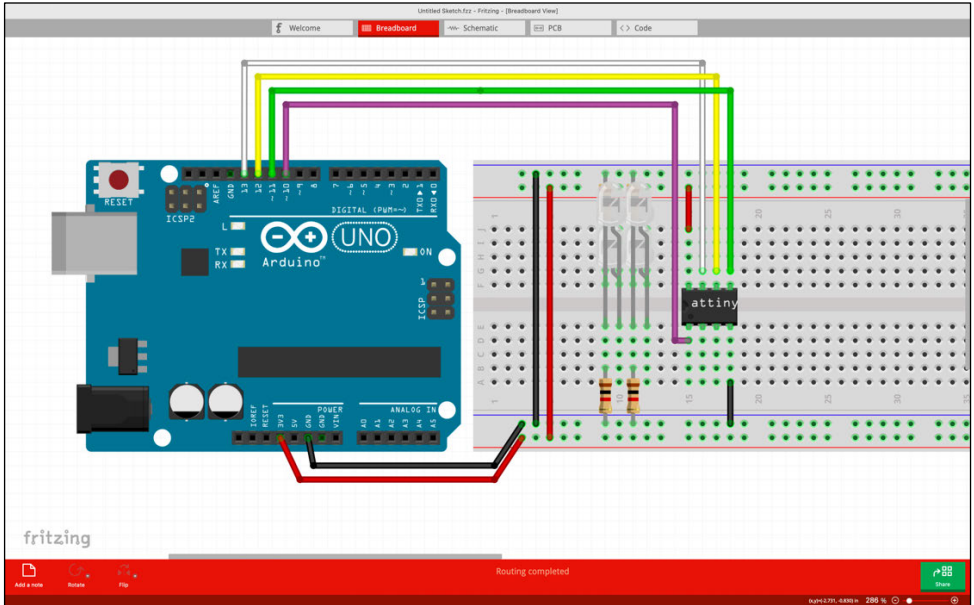


13. This is a Fritzing diagram of the circuit board setup. The LEDs are left off to the side because otherwise they would obscure the resistors in the illustration. Each LED should be installed with its cathodes (negative poles) connected to a resistor and its anodes (positive poles) connected to a colored wire that is in turn connected to an Arduino pin. The Arduino and AtTiny13a use a common cathode ground represented here by the black wire. Use the file [arduinoMillisStratolite.ino](#) from the download package to the left to program the Arduino to flash the LEDs in sequence. Feel free to tweak the variables to suit your needs.



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14. Once the sketch is satisfactory, it is ready for writing to the AtTiny13a chip. Wire the Arduino to the AtTiny13a chip as shown here.

The small half-moon indentation on the AtTiny13a chip is to the right, on the side of the controller facing the Arduino. Use the sequence and addons from the following website to prepare your Arduino to write to the AtTiny13a chip: create.arduino.cc/projecthub/taunoerik/programming-attiny13-with-arduino-uno-07beba.

Once the Arduino and AtTiny13a are prepared, flash the following sketch included in the download packet: [attiny13aStratoliteSequence.ino](#).



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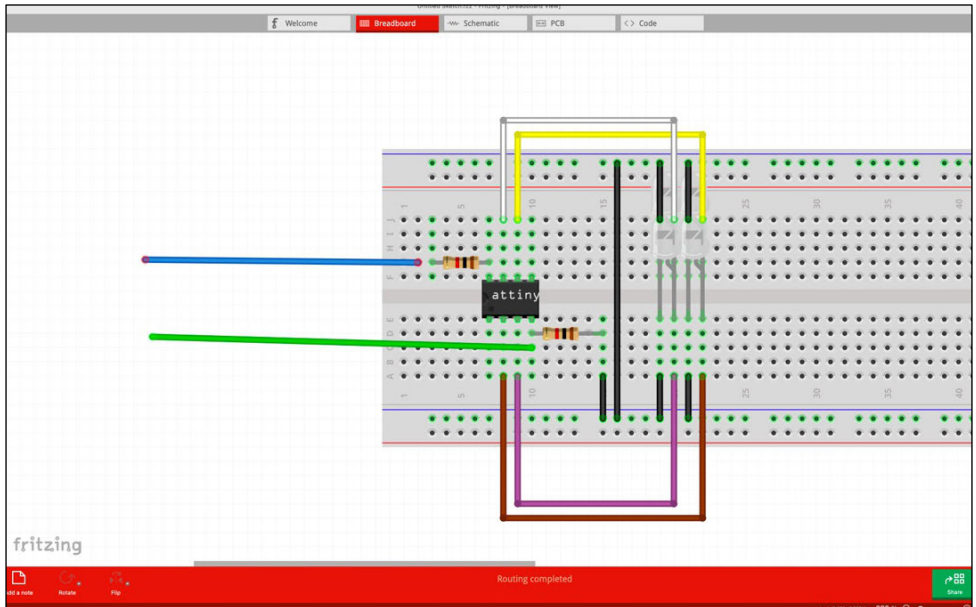
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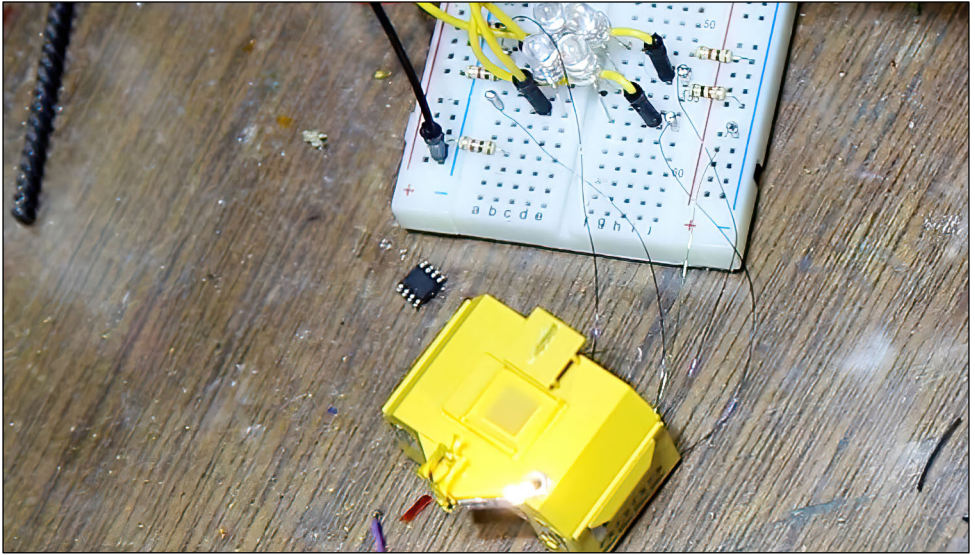
15. Here is the final wiring configuration for the AtTiny13a and LEDs as it will go into the locomotive. The blue wire is the positive, function common wire to the decoder, and the green wire connects to a decoder lighting function set to “constant bright”.

Note the 1k Ω resistor on the function common. The AtTiny13a operates on 3V and will burn at higher voltage. If your decoder already has built in resistors for LEDs, then the additional 1k Ω on the function common is unnecessary. The 1K resistor between the AtTiny13a ground and the LEDs, by contrast, is required for proper function.



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16. For the actual installation, James switched from the 3mm LEDs and axial resistors of the breadboard to 0402 SMD LEDs and SMD resistors. Here, he is testing the 0402 LEDs with the breadboard to determine which LED corresponds to each pin for proper sequence. He will mark each wire before soldering them to the pins of the AtTiny13a chip, which is just above and to the left of the locomotive cab in the photo.



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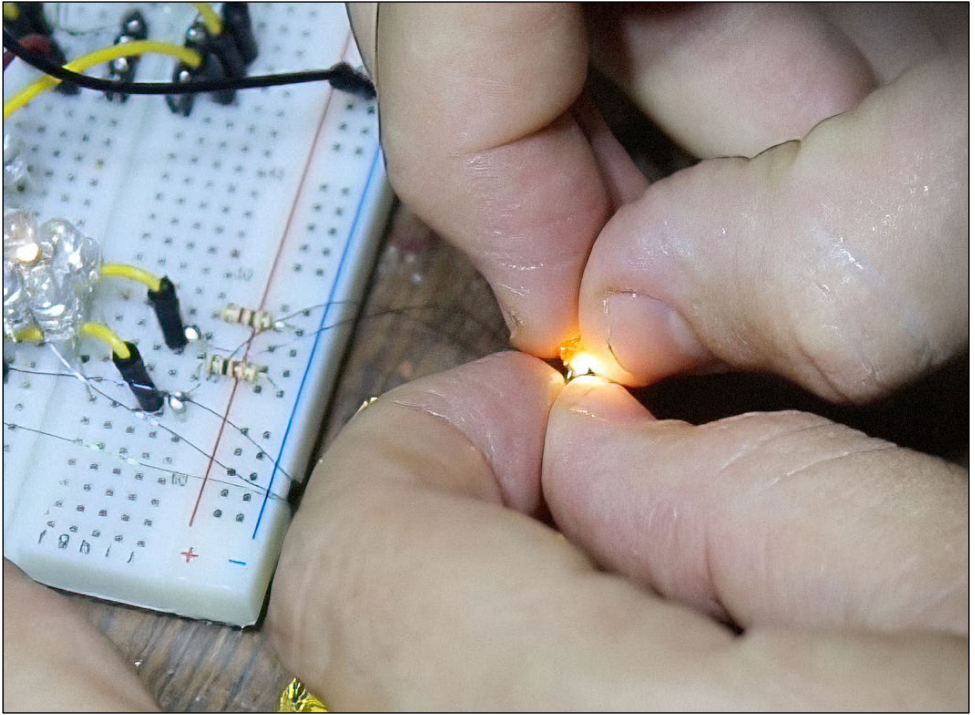
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17. James is fitting the beacon globe to the four-LED cluster. He began with an Athearn globe and used a 1/16" and a 5/64" drill bit to increase its cavity size to accommodate four 0402 LEDs. He used a no. 64 bit to drill a small dimple into the top of the cavity to accommodate the wire ends.



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18. Here we see another Athearn GP7u, now with its four-LED rotary beacon completed. A close look reveals that the rear quadrant is illuminated in this photo. For full effect, be sure to watch the What's Neat video on YouTube.



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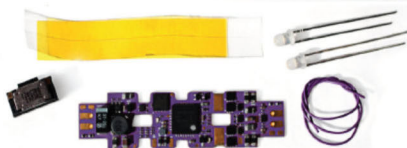
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Lights, sound, action!



Electrical
Impulses

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NELSON BEAUDRY UPGRADES AN ATHEARN
DIESEL WITH DCC, SOUND, AND LED
LIGHTING ...



I'VE HAD THIS ATHEARN READY-TO-RUN CF7 LOCOMOTIVE ON the shelf for some time now. I purchased it at a swap meet, intending to paint it for my fictitious regional short line, the Kennebec Penobscot & Northern, based in Central Maine. Follow along as I show you how to add lights, sound, and improve the overall drive train of these models.

Because I model the modern era, I want to make sure all my motive power comes up to modern safety standards. This means all motive power must have ditch lights and warning lights where appropriate. Let's get started.

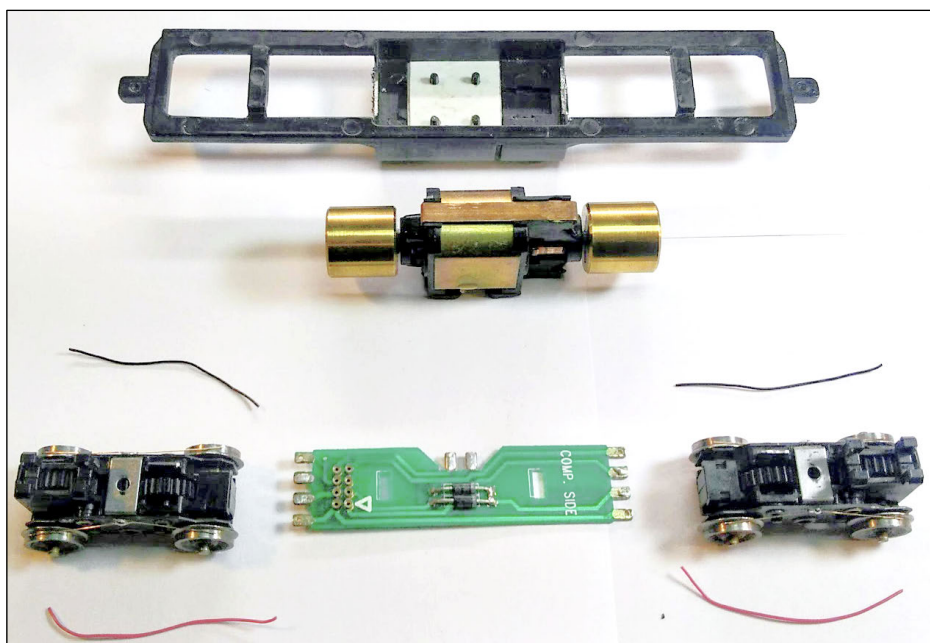
DISASSEMBLY

I begin with the basic frame of the model. I assume you already know how to take apart the model (generally just remove the coupler screws, pull out the coupler pockets, and remove the shell).

Ready-to-run Athearn units come DCC-ready with the frame already isolated from the motor – but I modified it a little – let me show you how I did it and why.

REMOUNTING THE MOTOR

This model uses the original Athearn rubber motor mounts. I found them to be stuck fast in the frame and I had to pry the motor out to remove it for DCC upgrades. Unfortunately, I pulled the original motor mount apart in the process.



1. The locomotive has been dismantled to its components, with the motor, trucks, and circuit board removed.





2. I drilled no. 43 holes through the rubber mounting lugs to accommodate screws.

I cut the remnants of the rubber pad mounts out of the frame, but decided to leave the rubber mounting lugs in the fuel tank holes. I drilled them out with a #43 drill bit to accommodate screws later on. This works well to provide some vibration and motor noise dampening [2].

Without the rubber mount, the motor would sit lower in the frame, which would take the motor shaft out of alignment with the gear towers. To compensate, I added 0.060" styrene shims to the bottom of the frame. This brought the motor mounting height back to that of the original rubber mounts [3].

I drilled through the shims with my no. 43 bit and test-fit four 1/4" #2-56 screws [4]. To attach the motor, we will need to tap the four holes on the bottom of the motor cradle[5]. The screws will provide a secure mount for the motor but provide easier access for service than the Athearn motor mounts.

We have a little more work to do on the motor before mounting it to the frame. Remove the copper clips on the top and bottom of the motor and solder an orange wire to one clip for the positive terminal, and a gray wire to the other for negative [6].



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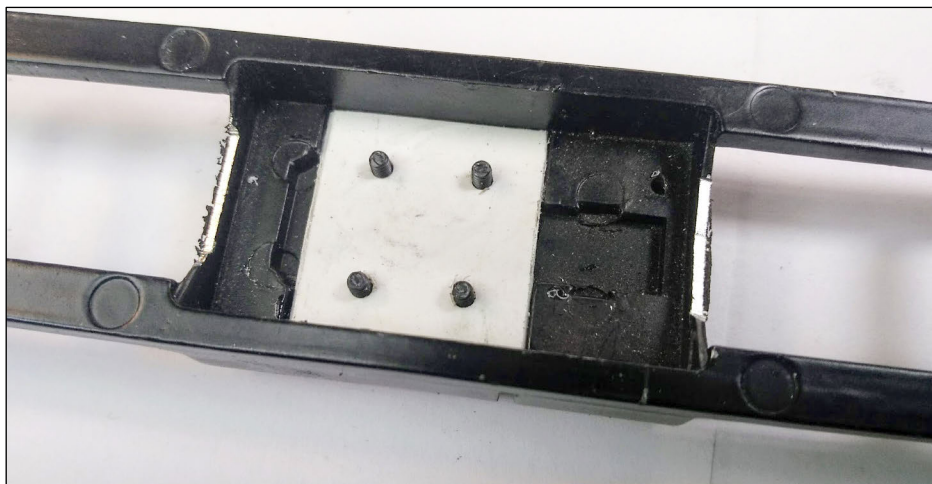
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LIGHT, SOUND, ACTION! | 4

With the wires added to the clips, we can add them back to the motor. The clip with the orange wire will go on top, and the clip with the gray wire will go on the bottom. With the clips wired and installed, the motor is ready for remounting to the frame [7].



3. I used two shims of 0.030" sheet styrene to bring the motor shaft into alignment with the gear towers.



4. Test fitting the screws to the frame.

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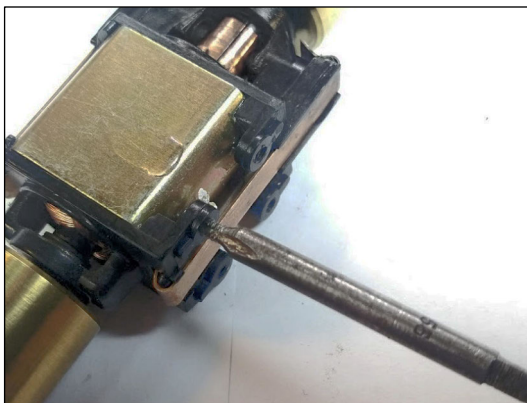
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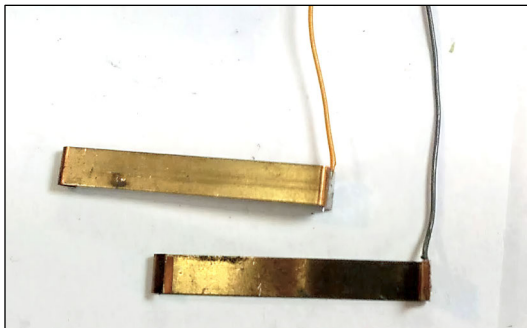
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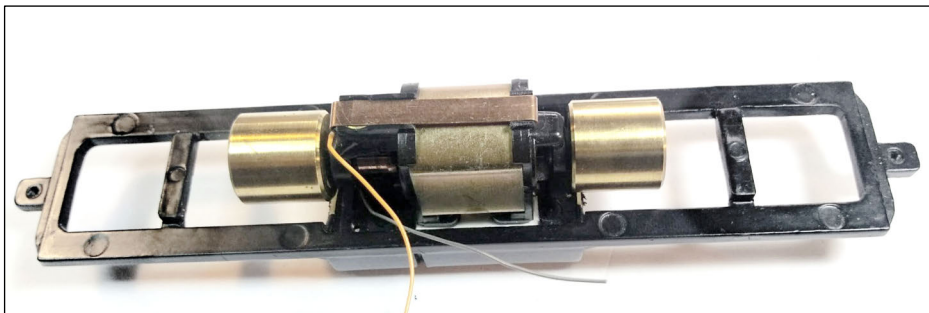
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5. I tapped holes in the motor cradle to accommodate mounting screws.



6. Orange and gray wires soldered to the motor.



7. The motor is installed on the frame with the clips and wire colors in proper orientation.

INSTALLING THE DECODER

With the motor secured to the frame, we can mount an OEM Athearn Genesis Tsunami II sound decoder to it. The Tsunami II decoder has two slots on the top for mounting pads on a Genesis motor, but the ready-to-run motor in the CF7 has none. The solution is to attach the decoder to the motor using tape.

I've gotten good results using masking tape to secure the decoder to the motor [8]. Using Kapton tape would normally be desirable, but we do not want the tape to cover up the solder pads. Masking tape can be cut into narrow strips easier than Kapton tape and has better adhesion.

The board is properly secured and all the solder pads are accessible. Now solder the orange wire to the M+ pad and the gray wire to the M-pad.



J. Fugate

ON MASKING TAPE FOR INSTALLS

I've used masking tape myself in the past for the very same reason and it turned out to be a bad idea. Masking tape ages quickly on warm electronics and gets brittle in short order. Aged

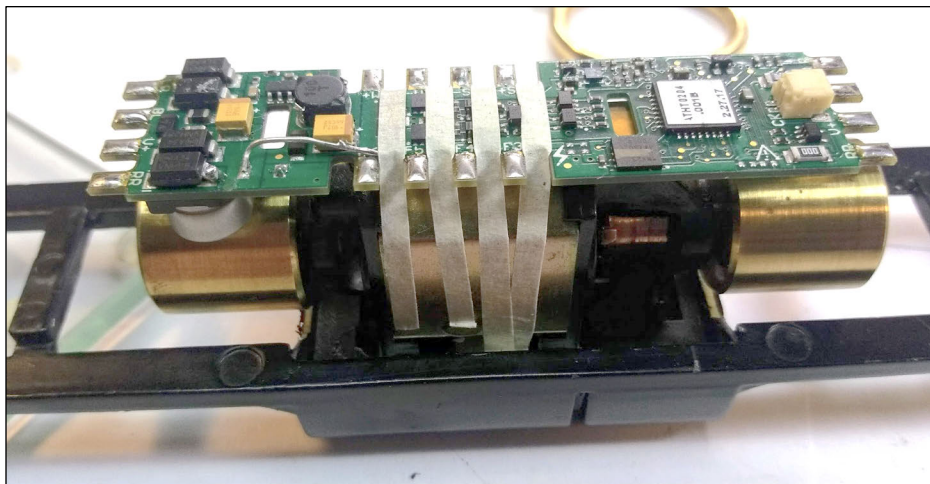
masking tape leaves a sticky gummy mess behind on the decoder and motor that's almost impossible to remove. Using double sided foam tape between the motor and the decoder board also works quite well.

Kapton tape is made for electronics, and it only costs a few dollars a roll. I now keep several rolls of various widths on hand. See the shopping list link at the end of this article for how to get Kapton tape. We're even sending the author a free roll so he can replace the masking tape in this model before it's too late!

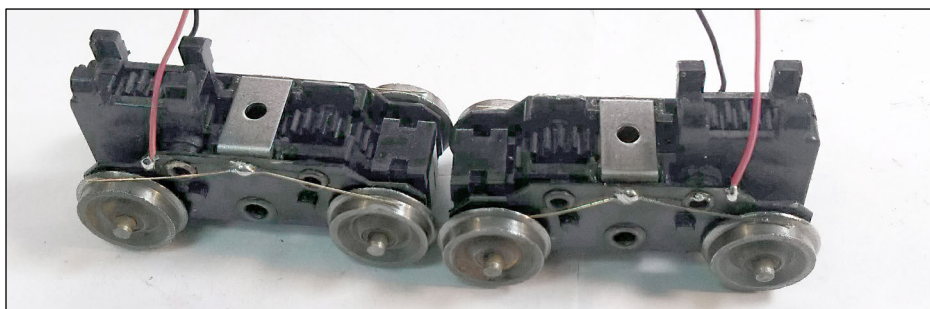


I made some significant modifications to the trucks to help ensure better power connectivity [9]. I cut the power feed towers off of the engineer's side and soldered wires to either side of the trucks' metal frame.

To further enhance power pickup, I made extra wheel wipers using .010" phosphor bronze wire. These should also act as a sort of suspension and help the wheels follow the track better.



8. The decoder is mounted to the motor with masking tape.



9. I added phosphor bronze wires to serve as wheel wipers to help provide more reliable power pickup and soldered feed wires to the truck frames.



J. Regier

BETTER WHEEL CONDUCTIVITY

Athearn Ready-to-run trucks are throwbacks to the old, reliable Blue Box standard. Power from the engineer's side rail passed through the truck bolster to the frame and the motor. Power from the rail on the conductor's side passed through a metal hook-like structure to an overhead metal bar that clipped to the motor.

Ready to Run units use the same truck design, but with the motor isolated from the frame. All power goes through a DCC-ready board mounted to the motor, typically with rivets, with engineer's-side power transferred from the frame to the decoder via a screw and a wire. A wire also replaces the metal bar.

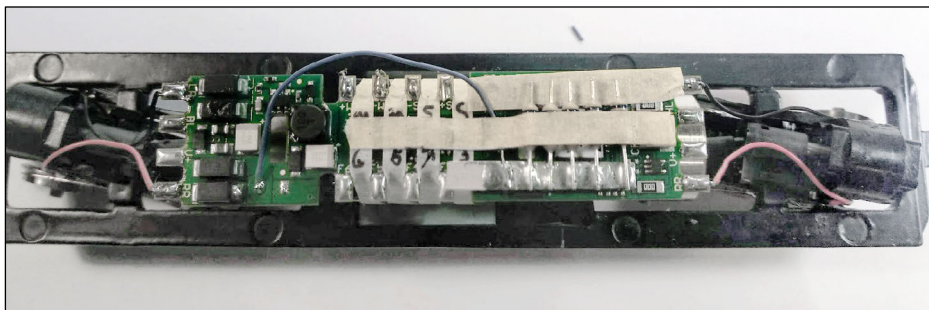
The wheels and the sides of the truck make a solid connection, with the power from each wheel transferred via a brass lug in constant contact with the wheels and the truck side. The point where power from the fireman's side transfers from the truck to the frame, by contrast, can be weak and problematic at times.

The author has addressed this issue by soldering wire leads to the sides of the truck tower frames, which bypasses the weakest link in the system. I have done this in many upgrades myself, and with noticeable improvement. This also permits you to remove the old metal hook portion of the truck tower, which can free-up interior space for speakers, cab interiors, and other opportunities without loss of conductivity.

I prefer not to add phosphor bronze wire wheel wipers to my locos. Wheel wipers may add drag to the wheels, making them harder to turn. I also worry they will cause wear and grooving in the nickel silver wheel plating over time.

Joe F note: I've added wipers to the loco wheels and have not noticed the issues James brings up, so best-practice opinions do vary here. ■

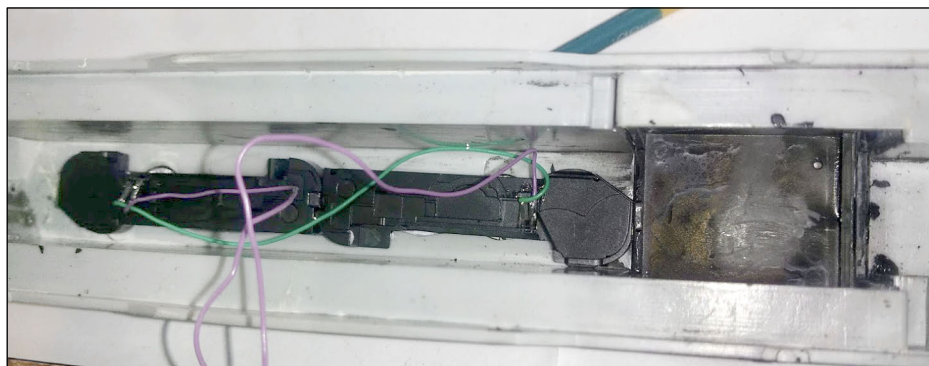




10. The trucks have been installed and their wires soldered to the decoder board.



11. I used two iPhone 4 speakers for this project.



12. The speakers are wired in series and glued into the shell.

With the truck modifications complete, mount the trucks back into the frame and solder wires to the appropriate pads [9].

Now we can move on to speaker installation. I chose two iPhone 4 speakers. Wiring them in series gives us a total of 16 ohms and approximately two watts of power capacity.

I installed the speakers in the shell using a general-purpose adhesive, and soldered the speaker wires to the appropriate pads on the decoder [12]. I fit the shell onto the chassis and



13. A CR2032 button cell battery puts out 3V, which makes it a good LED test power source.



14. I mounted the 3mm LED into the headlight opening in the cab.



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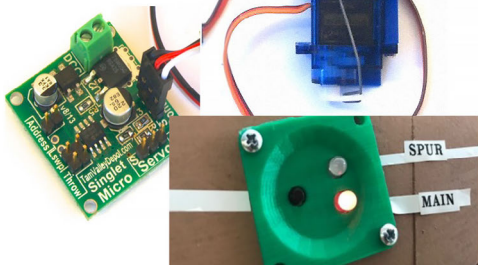
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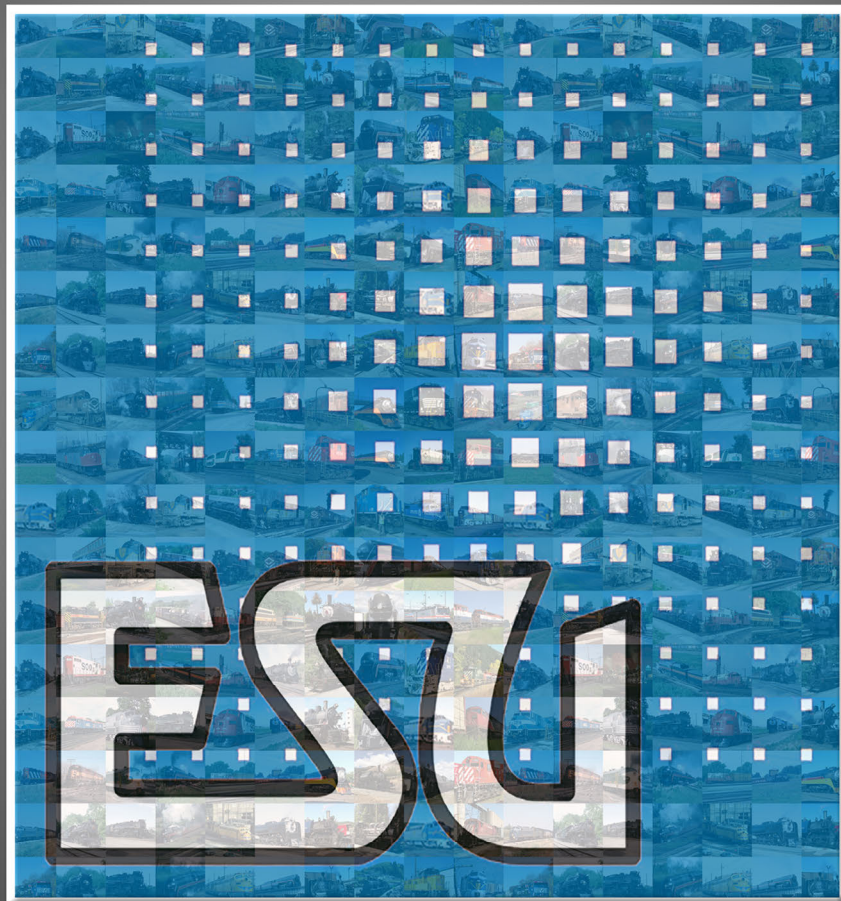


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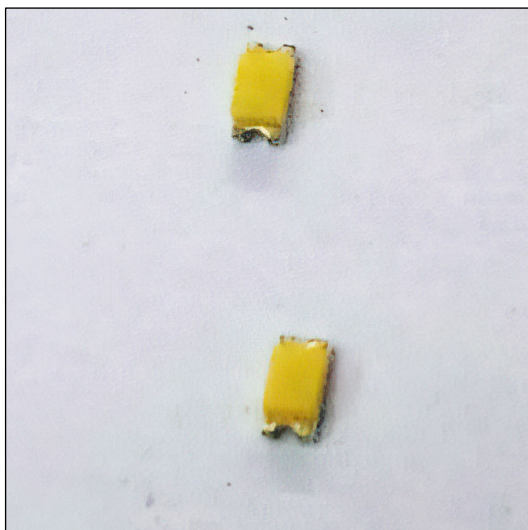
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performed a sound check. With a successful test, I de-soldered the speaker wires from the decoder and set the chassis aside for the light install.

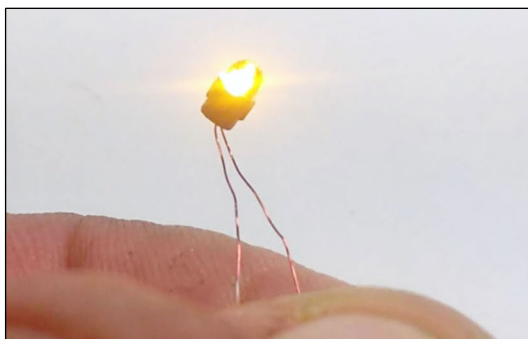
Until recently, Athearn Ready to Run models came with 1.5 V micro incandescent bulbs, which are notorious for burning out quickly. I converted my CF7 lights to LED soon after I purchased it.

For the headlight, I used a 3mm warm white LED. I tested the LED with a CR2032 button cell battery [13]. After confirming that it worked, I mounted the LED into the headlight opening in the cab [14].



For the rest of the project, I used 0603 SMD LEDs, which have the advantage of being able to fit just about anywhere [15]. You can purchase 0603 LEDs already wired, but I like to solder my own wires to them. I prepare the LED

15. 0603 SMD LEDs are my preferred size for most projects.



16. Testing the 0603 LED in the rotary beacon housing.

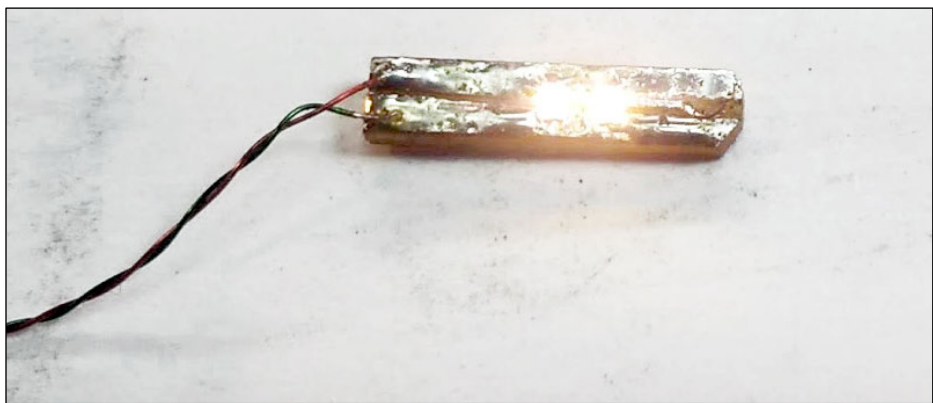


and wire sets in batches of four so that I have them as needed: enough to complete the step I'm on and to compensate for a goof.

Many short line switchers used beacons as warning lights for added visibility, so I thought my locomotive could use one, too. I happened to have a rotary beacon in my scrap pile, so I have no idea what brand it is. There are good ones available from Athearn and Details West, though.



17. The LED is mounted to the cab roof of the locomotive, on the engineer's side.



18. Test-firing the PCB LED assembly for the rear headlights. Note the groove I have etched down the middle of the PCB tie. I soldered the LED anodes to the top half and the cathodes to the bottom half.



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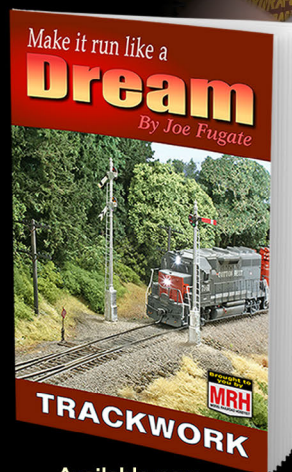
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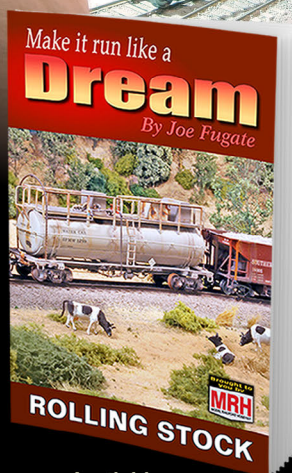


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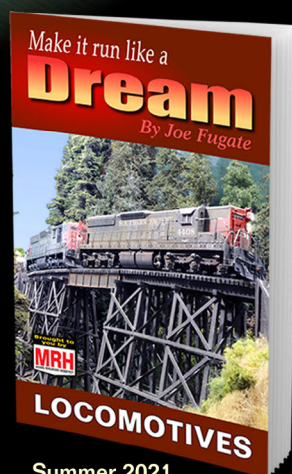
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I wired an 0603 LED, placed it in the beacon dome, and gave it a test [16]. The beacon lit right up as expected, so I mounted it to the cab on the engineer's side [17].

One trick I have found for soldering LED headlight assemblies where you need two in close proximity for one function is to use a scrap piece of PCB tie [18] I cut a groove through the copper along the length of the tie scrap and soldered two LEDs in parallel, spaced to line up with the rear headlight lenses, with their electrodes to either side of the groove [19].

I want to put ditch lights on the front and rear of the locomotive, on the front and rear pilots, just beneath the anti-climbers. Drill 1/16" holes in the front and rear pilot where you want to place your ditch lights [20]. For housing, I used 3/32" brass tubing, cut to 1/8" segments, and secured to the locomotive with CA adhesive in alignment with the ditch light holes [21].

An important part of any locomotive lighting project is making the lenses. I scavenged an old Christmas tree for fiber optics and I used them to make the lenses [22].

To create the lenses, I cut the fiber optic to manageable length, mounted it into a pin vise, and held it close to my hot solder iron while rotating [23]. The nicely convex lenses were a nearly perfect fit for the ditch light housings. I secured them into place



19. I spaced the LEDs on the PCB tie so they lined-up perfectly with the locomotive's headlight lenses. The PCB tie made for easy mounting to the locomotive shell.

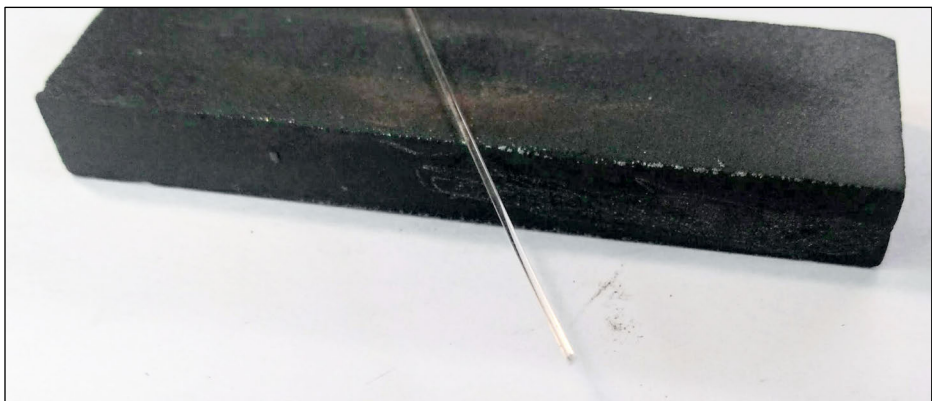




20. I drilled holes for the ditch lights in the pilots.



21. I used 3/32" brass tubing for the ditch light housings. Here they are shown secured with CA adhesive in the front pilot holes.



22. Fiber optics from an old Christmas tree can be recycled into locomotive lenses.



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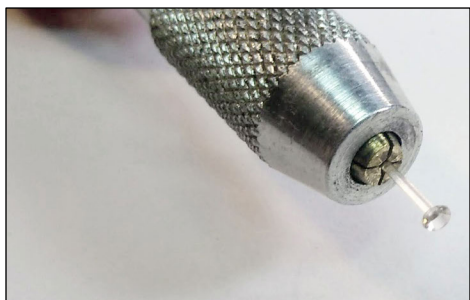
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with Aleene's Clear Gel Tacky Glue and allowed the adhesive to dry completely before proceeding [24].

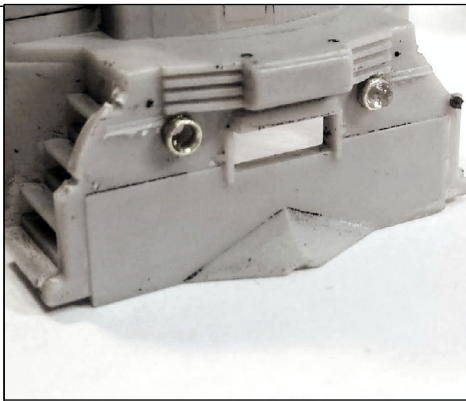
Once the adhesive has dried for the lenses, you can proceed to install your LEDs behind them, using the same adhesive [25]. Once all LEDs are installed, set the shell aside to dry completely before proceeding.

After the glue has dried, you can separate all your wiring. Collating wires by function will make it easier to keep track of which wire goes where for the final installation to the board.

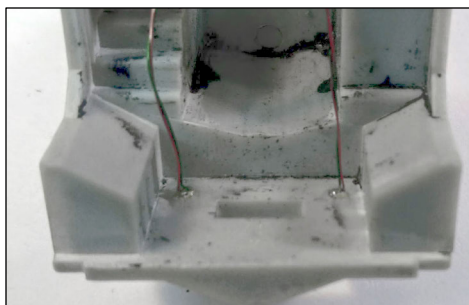
Decoders have one solder pad for each function output, but usually only one – maybe two – pads for the function common, or blue wire. Trying to attach several wires to one small pad is a recipe for a mess, especially since each function will also need an appropriate resistor to limit the current. I developed a method to organize this confusion using a PCB tie.



23. Holding fiber optics to a heat source while rotating them in a pin vise creates very convincing lenses.



24. Aleene's Clear Gel Tacky Glue is a good adhesive for mounting the ditch light lenses into their housings.



25. I pushed the LEDs into the ditchlight holes behind the lenses and secured them with Tacky Glue.

I pushed the LEDs into the ditchlight holes behind the lenses and secured them with Tacky Glue. I soldered the anode wires from the LEDs to the other side of the 680-ohm resistors, with one function per resistor.

Normally, the blue wire would attach to the function common pad on the decoder, but in this case, I am using an OEM Athearn Genesis decoder. The function common pads are limited to 1.5V on these OEM boards to accommodate the micro bulbs that Athearn used

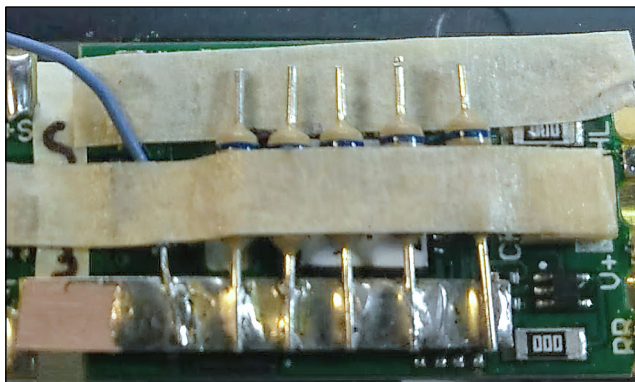
I clean the copper cladding on one side and remove the copper cladding completely from the other. The padding comes off easily with a buffer wheel or benchtop grinder. Removing the copper cladding on one side is important, because we do not want any loose conductors in the locomotive shell causing short circuits [26].

I solder five 680-ohm resistors and a blue wire to the copper



26. One side of the PCB board has been completely stripped of its copper to avoid conductivity on that side.





27. The PCB board with the resistors and blue function common wire attached. The anode wires from each LED function will attach to the other ends of the resistors. Note that the resistor leads are trimmed flush to the PC board on the one side and to about 1/8" on the other.



J. Regier

LED WIRING

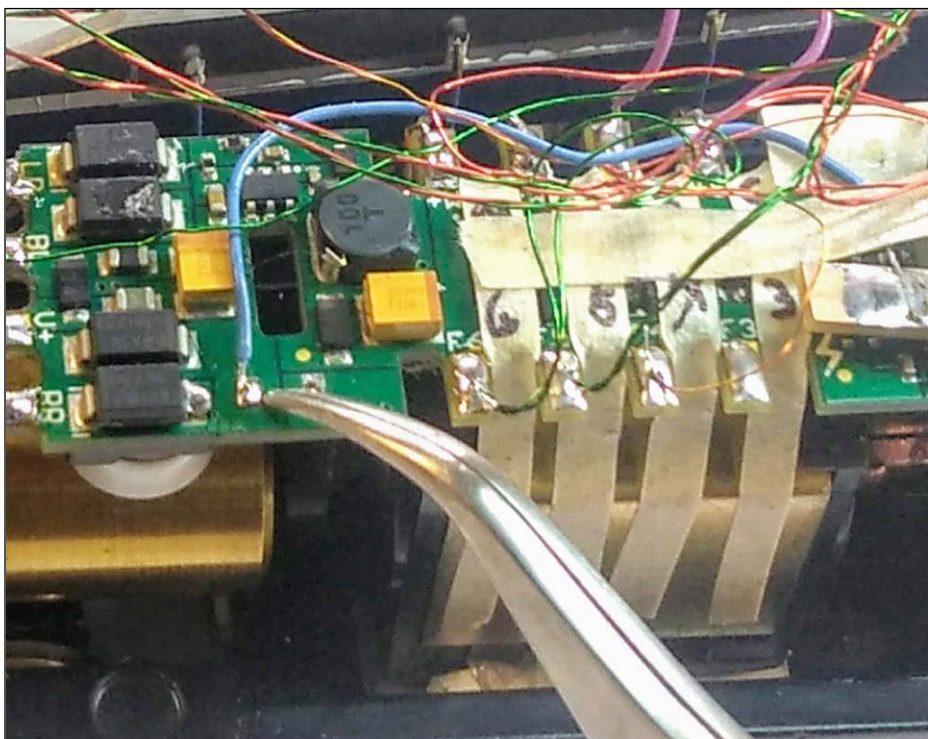
There is nothing magic about having your resistor wired to the Anode (+) or Cathode (-) of your LEDs or about having the resistors in one place on your locomotive. In my installs, I solder a resistor into the function common (+) line, an inch or two away from the LEDs of a given function – just enough wire between the LED and resistor to allow some play in installing the resistor. I splice the function common lines about the same distance away from the resistor.

Absolutely crucial to me: using shrink tubing or silicone conformal coating to isolate each and every solder joint, with the exception being the solder pads of the mother board, given they're fixed in place. Even brief accidental contact between an exposed function common wire or board, as the author uses, and another lighting function, speaker wire, motor, or track power terminal can fry a decoder. Whatever method you use, make sure to insulate all splices and in-line solder points.

until recently, but 1.5V is insufficient to power an LED. Fortunately, the board also has a 14V function common point, though it is only large enough to accommodate one wire [28].

All other function wires can go to their usual solder pads.

With the wiring all installed, we can put the shell back on the locomotive to test the light and sound functions. If everything is functioning normally, then the light and sound install is complete. In my case, I notice some undesirable light bleed around the ditch lights, which will be corrected in the paint shop [29, 30].



28. Make sure the blue function common goes to the 14V pad, not to the standard function common. All other function wires go to their respective function pads.



I hope you enjoyed reading this article and found it useful in your next installation of lights, sound, action! ☒

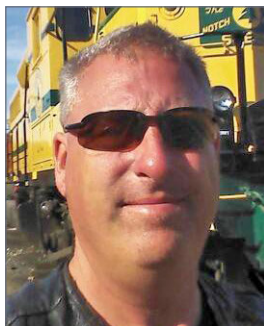


29. Looks like everything is working correctly. The bleed-through on the ditch lights will be corrected once the shell painted. Black paint on the inside of the front and rear pilots will also help eliminate bleed-through.



30. 2612 is complete and ready to take the road. Check out the full light and sound effect as 2612 switches out a paper mill here: www.youtube.com/watch?v=-GHMwWSchak&feature=youtu.be.

NELSON BEAUDRY



Nelson has been a modeler most of his life building everything from airplanes, model rockets, and plastic models you name it! He is a marine mechanic by trade, but also had a long stint in hospital food service. He started as a utility person, and left with 17 years experience as a cook, to join Clark Marine as a fulltime parts manager. He has always had a background in the mechanical

field, and was the top graduate of his senior VOTEC class in small engine repair. He has always enjoyed model trains because of the mechanical nature of the hobby, from fixing broken engines and cars to wiring layouts for other modelers. With the advances in DCC, it has been a natural progression to adopt this technology. In the same token, this also transfers to the electronic nature of today's modern marine engines. He is currently certified with Mercury Marine as a top level technician with 20 years experience in the marine field. Modeling helps keep his mind sharp in the off-season (winter), because when spring arrives, it's all hands-on-deck at the shop. In his off-time he enjoys motorcycling with his wife Tammy, and touring the coast of Maine. ■



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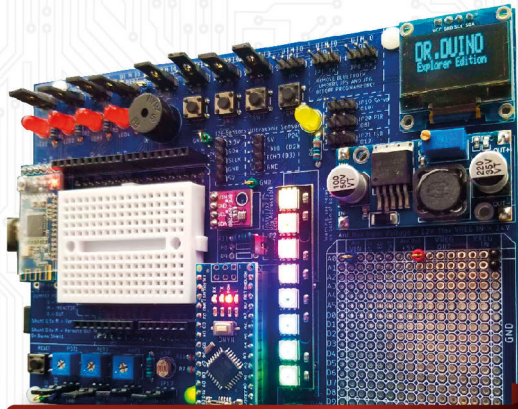
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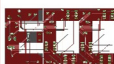
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Pinkish Gray		MRH 4763	VMA 710.50	16-02	
Engine Black		MRH 4888	ML 2000H VMA 710.35	16-01	
Storm Power Black		MRH 4795	VMA 710.57	16-48H	
Oil Black		MRH 4797	VMA 710.51	16-44*	
Weathered (Weathered Black)		MRH 4750	ML 2002H VMA 710.69	16-05	
Reflex Gray		MRH 4887* MRH 4801	VMA 710.45	16-04	
Reflex White		MRH 4851	ML 2000H VMA 710.55	16-02	
Gring Black		MRH 4287	ML 2000H VMA 710.55	16-03	
Colours Red		MRH 4889* MRH 4820H	ML 2000H VMA 710.52	16-05	MRH 4820H is 20% MRH 4889H is 20% MRH 4820H is 20%

* Indicates a close but not exact match. All ModelMaster paint is a semigloss finish. Valley Model Air Game Air, ModelMaster, and ModelMaster paints for finish unless marked: † Gloss finish, ‡ Semigloss finish. 1 Model Master's new ReelR Gray is a shade darker than the old PolyScale ReelR Gray. Color 4361 Dark Gray is a closer match to the old PolyScale color. 2 Model Master's new Cobalt Red is a shade lighter than the old PolyScale Cobalt Red. Color 4633 Stop Light Red (also finish) is a closer match to the old PolyScale color. Add 20% fat medium to get semi-gloss.

Paint	Color (approx.)	Model Number	Yale/Model Number	MOORE's	Notes
Tuscan		MIR 4352*	YMSA 71.026	16-15	
Reifer Orange		MIR 4353*	YMSA 71.083	16-69	
Reifer Yellow		MIR 4359	YMSA 71.028	16-10	
Rust Brown		MIR 4384	HL 29029 YMSA 71.249	16-176	
Railroad Tie Brown		MIR 4385	HL 29093 YMSA 71.499	16-48** Clear match - for 16-48	
Rail Brown		MIR 4709*	HL 29091 YMSA 71.120	16-175	
Rust		MIR 4375	HL 29055 YMSA 71.027	16-172	
Concrete		MIR 4376	YMSA 71.045* Clear match - for YMSA 71.021 YMSA 71.032	16-11*	
April Concrete		MIR 4375	HL 29057 YMSA 71.041	16-98* Clear match - for 16-98	

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Modeling Water with plexiglass



NEIL R. SCHOFIELD BUILDS THE LAKE
MEMPHREMAGOG TRESTLE ON A PLEXIGLASS BASE

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IT SEEMS LIKE ONLY A YEAR AGO THAT I WAS

frantically soldering feeder wires on the Orleans section of my layout in anticipation of getting that first train running. Alas, it's already been five-and-a-half years. Thankfully, I'm happy to say construction of the benchwork is 95 percent complete, yet I still feel overwhelmed at times with so much bare benchwork following completion of the central layout peninsula in 2017.

Despite my delusions of having a layout completed in 10 years, I can honestly say I'm making progress. While it doesn't seem steady, the periodic spurts of scenery and structure building have finally made a dent around the perimeter of the layout, with at least some form of basic scenery around the 28x32 foot room.

It is also satisfying that some of the more challenging scenes on my compressed version of CP Rail's Lyndonville and Newport Subdivisions in Vermont are starting to come together. Even better, my second attempt at recreating the inner bay crossing of Lake Memphremagog trestle is about complete. Now I can head down to my basement time machine and witness three or four RS-18s easing across the bay as they enter and exit Newport Yard, certainly one of the signature scenes from circa 1980 I wanted to recreate on the layout.

I mention the second attempt because my first attempt was more than 15 years ago. It had far too many compromises and not enough prototype fidelity. This time around, I spent more time designing the scene to be a better photo opportunity, and closer to the prototype.





1. A pair of geeps leads a northbound freight across the trestle.

But my first attempt was not for naught. The lessons learned were incorporated into the new trestle crossing and what I would call a successful, if uncommon, method for water crossings. Armed with my trestle and lakebed construction experience, I set out to redo that signature scene.

Hopefully the experience described here will inspire you to create your own lake scene, and the techniques will be helpful in scratchbuilding a wood pile trestle with plexiglass as a base, rather than a plywood surface. I built first trestle scene more than 15 years ago using these same techniques, but this time around I spent more time designing the area to get a prototypical height and a linear trestle, rather than compromising with an elevated curved trestle.

I have seen plexiglass used as a trestle base in magazine articles and a few museums, but it's not a common method. My experience with the first scene was that plexiglass provided a natural reflective surface. With the addition of minimal ripples on the surface, it was perfect for creating that summer day reflection for railfanning.

This approach presents some challenges, but you'll be able to follow the steps and photos in this article to create your own scene. The most challenging aspect overall was blending the water backdrop into the surface of the plexiglass. I'd like to say my results were flawless, but they are good enough, at least for now.

PROTOTYPICAL INSPIRATION

Having photos of the prototype is a must to replicate any prototypical scene. With the intention of modeling at least some portion of CP Rail's operations in Vermont, I took a trip to Newport in 2004 to get as many photos of the trestle and infrastructure around Newport as I could.

Amazingly, much of what I wanted to model was still around, except most of the rail traffic and trains. Thankfully, traffic around Newport was still predictable, and friend and photographer Richard Deuso captured a beautiful photo of Central Maine and Quebec (CMQ) heading northbound out of Newport Yard and across the trestle [1]. It almost makes me wish I modeled the fall.

Beautiful photos aside, up-close detail shots are necessary to recreate the prototype. Photos I took back in 2004 show the general construction of the trestle. They illustrate how the steel beams are supported by the deck supports, and the bridge decking is laid upon the steel beams [2].

DESIGN AND CONSTRUCTION OF THE LAKE

CP Rail's yard at Newport is located about 1/4-mile south of downtown, and it crosses the inner bay of Lake Memphremagog to reach downtown. I had to selectively compress the yard, the inner bay scene, and a small portion of downtown Newport on a wall that was only 28' long. I certainly could have used another four or five feet to give the yard approach better realism, but I separated





2. (Clockwise from top right) View from the deck reveals that this line was once double-track; now unburdened bridge piers stand in the lake; detailing of the deck's railing and stanchions; closeup of the trestle structure supporting the active line reveals the bolts of the angle bracing.

the trestle from the yard with some low-lying trees and bushes to create a transition from the yard to the trestle scene.

When I built the benchwork extending north out of Newport Yard, I narrowed the plywood roadbed to the approximate width of the single track and roughed-out the edge of the lake. This gave me a clear starting point to cut the single-track roadbed out and insert the trestle once it was built.

I also had to know the dimensions of the plexiglass so I could cut the appropriate-size sheet. Since the plexiglass is transparent, it's easy to trace the edges of the lake and benchwork onto the sheet and set it aside for cutting. The sheets come with a clear protective film that can be pulled off once they are in place.

TRESTLE CONSTRUCTION

With the plexiglass sheet cut out, it was time to work on the trestle. I started with a piece of Micro Engineering bridge track measured to the correct length, typically at least a half inch longer than the water crossing on each end. This helps anchor the trestle and rail into the base on either end of the bridge.

Construction began by cutting out every fifth tie to add longer bridge timbers – 0.80" x 0.100" scale styrene strips scribed with 60-grit sandpaper – that would support the rest of the styrene deck and walkway [3]. After removing those ties, I went back and cut extra ties at three locations along the bridge to add decking for the water barrels.

Once I had replaced the ties with bridge timbers, I used Testors Model Master Cement to glue the 3/8" styrene I-beam girders to the bottom side of the ties [4]. I chose this based on the prototype photos I took in 2004, after the bridge had been rebuilt with steel beams. In reality, the prototype would have had comparable-size wooden beams in the 1980s, but I felt the steel beams didn't detract from the overall look of the bridge once it was painted.

I also wanted to make the trestle supports wide enough to represent that the bridge had been double-track many years prior. When I constructed the bridge piling supports, I made them wide enough for this [5].

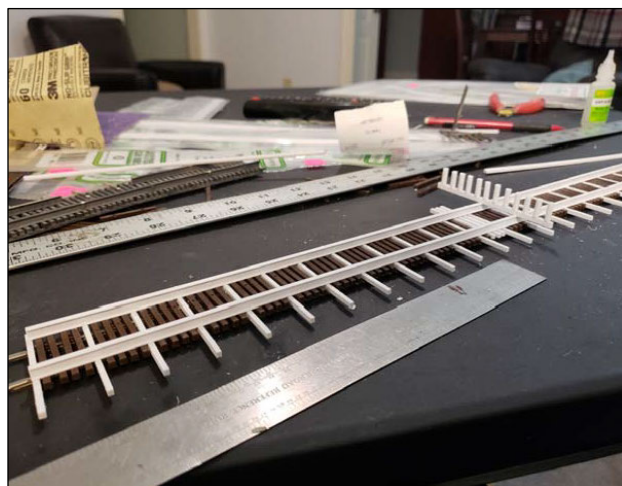
MATERIAL OF CHOICE – MAKING STYRENE LOOK LIKE WOOD

My construction material of choice has always been styrene, even when building structures that should represent wood. This may seem counter-intuitive, but for me it's a level of comfort and familiarity with cutting and bonding, as well as the speed of assembly.





3. With every fifth tie removed, I added longer bridge timbers to support the deck and walkway.



4. I used 3/8" styrene I-beams for the bridge's girders.





5. The width of the girders suggests that the bridge once supported double track.

The drawback of using styrene compared to wood is, it's not as easy to stain and weather as wood. To overcome this challenge, I devised a method of pulling the strip styrene over a piece of 60-grit sandpaper several times before I cut it to give it wood grain streaks. Once painted and weathered to bring out the details, the technique is pretty effective [6].

LAKEBED PREPARATION

Preparing of the lakebed is a four-step process. The first step after completion of the trestle was to establish the exact height of the plexiglass so the trestle would sit flat and level. If there's one critical aspect of the project, it's this step.



I spent extra time and care to get the height of the plexiglass correct by carefully measuring the banks around the lake. I made sure they were the same height as the trestle supports. Once I was sure it was close, I test-fitted the plexiglass and added some wood shims along the bank to level it where necessary [7].

Once I was satisfied that things were level, I measured the height from the lake bottom to the top of the bank. I then cut wood platforms and placed them strategically around the lakebed and in the center to support the plexiglass. The supports were placed so they would not be visible from normal viewing angles.

I spaced the supports such that they would prevent the plexiglass sagging but would not support any other weight. Once I was sure everything was measured, cut, and spaced properly, and that the plexiglass was sufficiently supported, I went ahead with painting everything gloss black, with dark blue highlights in the center of the lake [8].

The final step was to reinstall the plexiglass and place the bridge on top of it. I used groundcover and plaster to bury the edges of the plexiglass and transform the rough banks into



6. 60-grit sandpaper creates a nice wood-grain effect on styrene.

finished scenes [9]. With the bridge in place, I just had to make a first revenue run [10].

MAKING THINGS GREEN

After completing the lakebed and installing the plexiglass, I let the banks and scenery set up before jumping into scenery. Only a day or two was necessary, but life often gets in the way of the hobby, so it was a few weeks before I had time to start finishing the scene.

The first thing to do was get a good covering of static grass everywhere to cover any imperfections around the banks. It



7. Test-fitting the plexiglass to make sure the lake is level.



was important to add the static grass before I removed the protective film from the plexiglass. I also added blue painter's tape around the edges to prevent paint from building-up on the film and making removal a challenge later [11].

After the base covering of static grass was applied, I removed the blue tape, and added shrubs and trees. I wanted to finish the banks as much as possible before removing the film [12].

INSTALLING THE BACKDROP

The final and perhaps most challenging step was installing the backdrop. Not only did the backdrop photo have to sit completely level on the surface of the plexiglass, I also needed to blend the plexiglass into the Masonite backdrop, and the



8. With supports in place, I painted the lake bottom gloss black with dark blue highlights.



backdrop photo into the lakebed. I'll be the first to admit that the results aren't perfect, but from three feet away, I'm happy enough to leave it as-is, and offer some advice on how to overcome the shortcomings.

I started by using clear silicone caulk to fill the 1/8" gap between the plexiglass and Masonite [13]. Once it had dried overnight, I carefully placed and then cut out the backdrop photo.



9. The plexiglass is down and the bridge is being positioned.



10. Once the plexiglass was in place, I had to connect the bridge and make a first revenue run. Here we see an Alco S2 trundling across the bridge with two boxcars.



The backdrop itself is a series of photos I took in the summer of 2019 from the bridge while standing with some fishermen. I was sure to include the houses, the hills, and the water. My friend Mike Confalone stitched the series of photos together in Adobe Photoshop to make an eight-foot-long backdrop [14].

Studying the prototype photos and printed backdrop, I noted the houses along the lake appear to be a few inches above the



11. I masked the edges of the lake in preparation for static grass application.



12. Instant satisfaction! I removed the protective film from the plexiglass to reveal this stunning result. Although some of the supports can be seen through the glass, they will be hidden underneath the bridge.

surface of the lake (visually on the backdrop photo), so that's how I approached cutting the bottom of the backdrop. Once I was satisfied, I carefully slid the backdrop into place. I intentionally left a 1/8" gap between scenery around the lake and the Masonite backdrop to allow the photo to slide into place, level with the plexiglass surface.

When I was satisfied with the backdrop, I set it in place with blue tape folded-over on the back side. I've found this method provides the most forgiving and fixable backdrop adhesion.

The last step in the backdrop process was something I hadn't tried before – blending the backdrop photo into the surface of the plexiglass with a custom mix of bluish-gray paint. It took several tries to get the color right, but once I was satisfied, I hand-brushed a few test areas. I used an airbrush to carefully match the photo colors to the surface of the plexiglass and blend things, a little paint at a time.

Once done, I let things dry for an hour. I think the result is satisfactory but definitely could be done better applying the caulking between the photo and the plexiglass [15].



13. The back of this scene is sealed with silicone caulk, ready for the backdrop photo.



My advice to anyone trying a similar scene is, don't rush the airbrushing. Be sure to keep at least a half-inch of exposed lake on the backdrop, making the transition between lake and plexiglass a little easier. The important part is matching the paint right at the joint so that the reflection is crisp.

After reinstalling the trestle one last time, I prepared the scene for a coat of Envirotex resin sealer by placing blue painter's tape along the fascia edge to prevent a dam for the poured



14. I shot the backdrop photos from the bridge, making sure I included elements of water, houses, and hill in each frame.



15. Despite its imperfections, the blend between backdrop and water surface looks pretty at 3 feet.



Envirotex. Once the Envirotex had poured, there would be no removing the trestle without a lot of damage, so I tested the conductivity of the rail joiners at either end of the trestle to prevent future dead spots.

My intention was to apply just enough resin to cause some waves, but not enough ripples to distort the water and reflective surface. Nothing is better than a calm sunny day for railfanning. I gave the resin a few days to dry, and then over the next few weeks I continued scenery beyond the ends of the trestle.



I finally could get out the camera for some photos of a CP Rail train #917 easing out of the yard [17]. Some advice for those trying to recreate a signature scene would be to set the track a little farther back, or you could extend the lake out a bit farther to make photographing easier without the fascia showing. In my case, space limitations didn't allow that. Still, the experience of trains easing across the trestle is still pretty neat, and it takes me back to the early 1980's on CP's Newport Subdivision. ☑



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16. CP 8778 leads a trio of RS11s northbound out of the Newport Yard with train #917.

**When
talking to
hobby
vendors,
please
remember to
mention
MRH.**

NEIL R. SCHOFIELD



Neil Schofield lives in Charlton, MA with his wife, three children, and the family dog. He works in Holyoke, MA as a Senior Project Manager for an environmental consulting firm.

This is Neil's third feature in *MRH*. Thanks to his father, Neil has been interested in trains since he was 6 or 7. His childhood memories include many railfan trips throughout the Northeast, along with fond memories of operating modern piggy-back cars on his father's steam-era layout.

Growing up, he was a self-proclaimed rivet-counter when it came to rolling stock and locomotives. Since layout building commenced, the rivet counting has diminished in favor of getting trains running, building scenery, and structures. He's now about two years into his third layout that is based on CP Rail operations in Vermont. He has already installed his Agway Feed Mill featured in the September 2014 *MRH* magazine, and he is hoping to present the layout in a future *MRH* article.

While he enjoys modeling CP's operations in Vermont, he also occasionally strays toward other prototype modeling, generally railroads found throughout the northeast.

When he's not working, attending one of his children's sporting events, or modeling, he enjoys exercising and watching Boston's sports teams. ■



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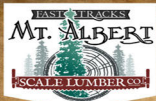
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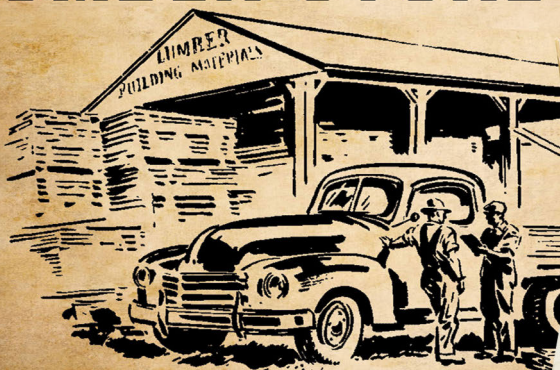
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Conveying your layout story

Ops for the rest of us, Part 3



Model Railroad Hobbyist | February 2021

DOUG MATHESON DISCUSSES
HOW TO CONVEY A LAYOUT'S
STORY TO OPERATORS ...



FOR THE OPERATIONS LIGHT APPROACH, there will usually be a small crew – often only one train with either one person playing the combined role of an engineer/conductor or a two-person crew splitting these roles. There may be a second operator or pair of operators running a second train. To guide this role-playing in your world, you will need to provide an outline of what your railroad does.



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Most modelers have, through the very act of laying track and building models, established a background in terms of era and geography. A few have even gone so far as to create a fictional history for their roads. Even the most generic circle of track with a few sidings must have some story to tell if the “purposeful movement of goods/people” is to be simulated. This story should be simple enough that the visiting operator can grasp immediately what your railroad empire does.

This backstory provides the context for the role-playing – the operator knows from this if he is an engineer on a backwoods line in upstate NY in the 1920s or on a modern mainline unit coal train in the Powder River basin. In Part 2, we saw that Mike Hamer could describe his backstory in a few sentences – the 1950s in the fictional town of North Dover, New Hampshire on the Boston and Maine. Bruce Chandler took us to the rural countryside of Virginia/North Carolina pre-World War II on his imaginary Jackson and Burke narrow gauge.

EVERY TRAIN HAS A STORY

More important than the backstory, every train introduced into the role-play has a story. These stories should be kept as simple and straightforward as possible to make them easily understood by even the most casual of visiting operators enjoying your brand of model railroading. Bruce Chandler runs a pair of way freights daily and we journeyed with the westbound in Part 2. Mike Hamer operates a variety of trains but in Part 2, we looked in on the run of the Newsboy – a Boston-bound manifest carrying paper from the mills in Maine.

THE TRANSPORTATION PLAN

The amalgam of the story lines for all the trains is in essence the transportation plan of the railroad. It defines what trains run, when they run, and how they work together. The

transportation plan sets out the backdrop against which the role players in your simulation will interact with each other in a partly scripted but somewhat impromptu way. The normal approach is to develop the transportation plan globally first, and then define the role of each individual train.

Building a reasonable transportation plan is not easy. In fact, for larger layouts and the large crews that operate them in the heavyweight ops world, it is exceedingly difficult to develop a plan that balances car movements, track availability, and crew availability within the physical constraints of an ops session and most importantly, the abstract constraints of the owner's vision of his world. It is, fortunately, much less difficult in the ops light environment.

HOW IS IT DONE? – A PAIR OF EXAMPLES

Every model railroad reflects the unique desires and skills of its creator. For that reason, there is not a strict algorithm that will give you the final product. Let's look at two examples of a successful plan to see how a modeler can create one.

Example I – Mike Hamer's Boston & Maine

Continuing with Mike Hamer's H0 version of the Boston & Maine, the singular focus of the layout is the activity in the town of North Dover, NH where the MEC met the B&M.

The B&M ran about 55 trains a day through the real town of Dover in the mid 1950s. Clearly, that is far more than anyone could model on a small layout, but it gave Mike the variety from which he could pick and choose the trains that most interested him.

Mike had a keen interest in operating several different kinds of trains, including:

1. A long manifest freight such as B&M N2, an inbound (headed toward Boston) freight known as The Newsboy because it carried significant newsprint paper.



2. Trains moving oil tank cars into Maine to supply the mills, and the reverse movement of empties out – an example would be the MEC train 390 dropping empty tanks for pickup by B&M (normally by an extra).

3. Passenger service including milk cars for the creamery in North Dover served by both MEC and by B&M.

4. Some local switching of industries in North Dover by a switcher stationed there.

On the layout, there is space for seven trains to be staged [2]. Trains leave staging and their crews are stars of their own show as their trains pass through North Dover, and do the work required there. Once work is complete, the train departs and returns to staging. A switcher located in North Dover performs local switching and interchange with through trains.

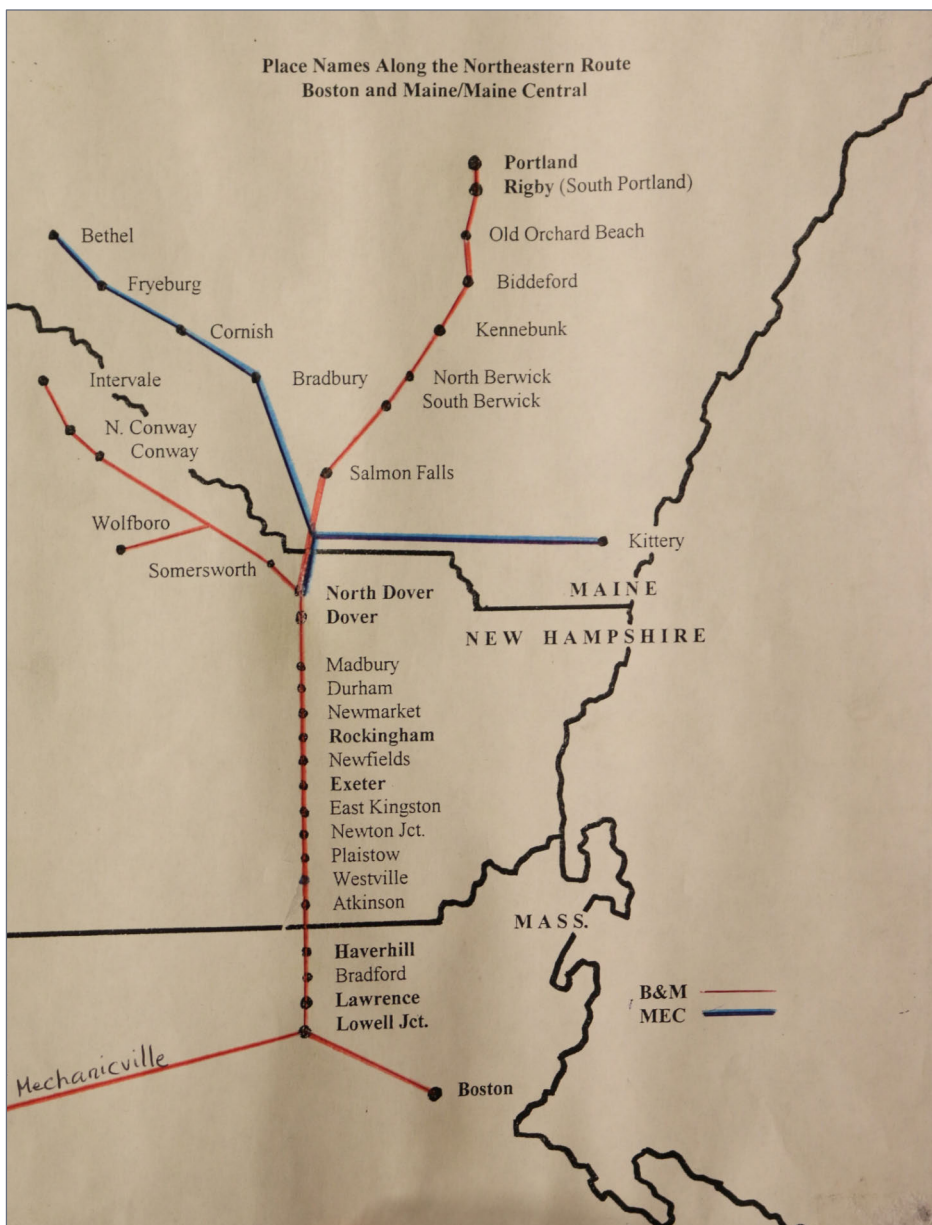
A judicious choice of staged trains guides the operation.

Experience has shown that a two-person crew takes roughly 20-30 minutes to operate any particular train. A three-hour operating session could handle six to ten trains, and if Mike wanted a longer session, he could simply include additional movements. The transportation plan for a typical three-hour ops session is communicated on a single sheet of paper.

Mike prepares the sequence of trains he desires for any particular session, freely interspersing local switching in North Dover with the parade of through trains. A typical sequence is shown in [3].

As befits a modest layout, Mike keeps his transportation plan simple. He does not use a fast clock, and he runs trains

1. (Top right) Mike created a map to show how his version of the B&M fits into New England. The town of North Dover is shown as an important junction of the B&M in red and MEC in blue. Note how Mike used artistic license to “imagineer” his own MEC line which dips slightly south of the border into New Hampshire where it meets the B&M at North Dover.



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2. Mike has room for seven staged trains in his uniquely designed staging area around the outside of his layout but concealed by scenery. Here is a portion of the staging with the concealing scenery visible on the left.

sequentially. The run of the next train in his plan does not occur until the preceding train has completed its run. Each train movement allows a two-person crew to play the role of engineer and conductor on a through train, and also play the role of engineer and conductor/brakeman on the switcher assigned to North Dover.

This scheme is flexible enough to accommodate a larger crew. If there are four operators, Mike has two crews of two – one crew relaxes in the crew lounge or kibitzes with the ops while the other crew operates before they alternate positions. The central operating area is just too tight – if Mike had additional space, the two crews could work simultaneously, one

Event	Action
1	First Rochester (B&M)
2	B&M manifest N2 (the Newsboy)
3	Local switching in North Dover
4	Conley Coal Local
5	MEC #11 The Kennebunk passenger train
6	MEC #390 (The Oilcan) Meets with B&M X6209 (RDC)
7	Local switching in North Dover
8	B&M North Turn
9	B&M manifest MP7 (outbound)
10	Return of First Rochester

3. Mike prepares for each operating session a brief outline of the trains he wishes to see run in a sequence such as the this one.

operating the North Dover switcher while the other crew handled the B&M and MEC trains on the main.

Example II – The author’s Ontario Midland

My own HO railroad, the Ontario Midland, contains only one town on a double-track loop. One end of this loop is staging out of sight behind a wall. Two areas in the single town of Crown Point are visible to operators:

1. The depot with four through tracks in front of it (reflecting my interest in passenger ops), plus two sidings.
2. An industrial area with several industry sidings that can be worked without blocking the main.



Crown point lineup

Arrivals

Departures

Train	Track	Time	Train	Track
ONR 48	4	12:00	CN 634	3
CN 57	2	12:10		
		12:15	ONR 48	4
OMR 31	1	12:20		
OMR 21	3	12:30		
CN 7	1	12:45		
CP 2	4	13:05	CN 7	1
CN 101	2	13:15	CP 2	4
OMR 72	1	13:20		
		13:30	CN 101	2
		13:40	OMR 32	3
		13:50	OMR 22	1
		14:00	OMR 73	4

4. A schedule of trains arriving and departing Crown Point gives the transportation plan of the author's Ontario Midland.

Chris Lyon created a video of the first ops session a few years ago, and that video can be seen at www.youtube.com/watch?v=BfhfK6Hd1MM. The video gives a clear indication of the modest amount of trackage in this passenger-oriented model.

The small fictitious town of Crown Point, situated imaginatively on the Canadian Shield on Georgian Bay ca. 1960, has a simple backstory – it has a Union Station served by CN, CP, ONR and its subsidiary, the Ontario Midland, for

passenger service. The OMR switches the industrial area, declining after the construction of the St Lawrence Seaway, once per day. Through freight traffic bypasses Crown Point otherwise.

The transportation plan follows readily. There is one train per day that arrives and switches the industries before retreating back to staging. There is a steady parade of passenger trains from four railroads at the depot, with a significant amount of passenger car switching. Each individual passenger train has its own story where a depot switch crew interacts with the crew running each passenger train in turn.

Again, the transportation plan is expressed on a single sheet of paper [4].

Although the lineup shows times, the layout has been run only twice according to the clock, and this is real time. No fast clock has been used. For all the other ops sessions, the trains were actually run sequentially, with the station switch crew indicating when they were ready for the next train to arrive.

A three-person ops group – one for industrial switching, one manning the depot switcher, and a third operating passenger trains – can enjoyably work a two-plus-hour session on this modest layout. However, I most often operate the layout by myself, either switching the industrial area or running the passenger trains sequentially.

MOVEMENT OF TRAINS - DISPATCHING

In an ops light environment, an oft-raised issue is the need for a dispatcher, and what form dispatching should take.

On the one hand, it is unlikely that a dispatcher is essential with a small crew. If there are only a few trains operating at any given time, establishing meets is straightforward. On the other hand, there are some who might prefer the role of dispatcher to taking the throttle.



The decision of whether to include of a dispatcher in the role-play is really up to YOU the layout owner. If you think it is important to portray that character, and your line is somewhat busy, by all means include the role.

We will return to dispatching possibilities with a more thorough discussion in Part 5.

SCHEDULES & FAST CLOCKS – ARE THEY REALLY NECESSARY?

Prototype railroads ran on a schedule. The stereotypical view of an engineer and conductor comparing their timepieces emphasizes this point. Heavyweight ops has always included the notion of a timetable and the creative use of a “fast clock” to show the passage of time and symbolically lengthen runs.

In the operations light environment, there are a limited number of trains moving at any one time. Hence, the modeler can dispense with the use of both a timetable/schedule and a fast clock. The simplification is based on running trains in a specified sequence where the time taken to complete one train’s run is irrelevant to the starting time of the next train.

In short, the transportation plan can be expressed as a sequence of trains, and neither a timetable/schedule nor a fast clock is essential, although may still be used if you desire the “typographical scenery.”

EACH TRAIN HAS A STORY

Once the overall transportation plan has defined what trains will run and when, the layout owner must communicate the story for each train to the crews in a simple manner.

Bruce Chandler does it verbally, simply telling the crew they have the westbound way freight. I provide the crew with a one-page document containing the story and the work to be done. Computerized switch lists generally provide a very

limited space for crew instructions, while car card/waybill operators often include a “train card” for this story.

THE TRAIN PROCEDURE SHEET

In the operations light environment, it helps to provide the crew with the story of their train, even if via a single page you reuse whenever the train is run. This document has its roots in the prototype’s merchandise and manifest train schedules (note that different railroads called these by different names) that give a description of the work each train did, and the schedule the train ran. Customers, shippers, sales staff, and operating departments used these prototype documents.

For the modeler, the document should include any information the crew will need to operate the train successfully. Here is an example from my own Ontario Midland:

OMR 31: OMR 31 originates in Belleville and connects at Crown Point with CN Train 7 *The National* en route to Winnipeg. OMR 31 carries a sleeper to be added to CN 7. It also carries express traffic for the west destined to depart Crown Point on CN 101.

This could be provided on a laminated card similar to what the car card/waybill folks do. If printed on regular paper, the back could contain other information an operator might need to reference. This could include a schematic or map of the layout, space for an operator-prepared switch list, or a listing of hand and whistle signals. ☒



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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.

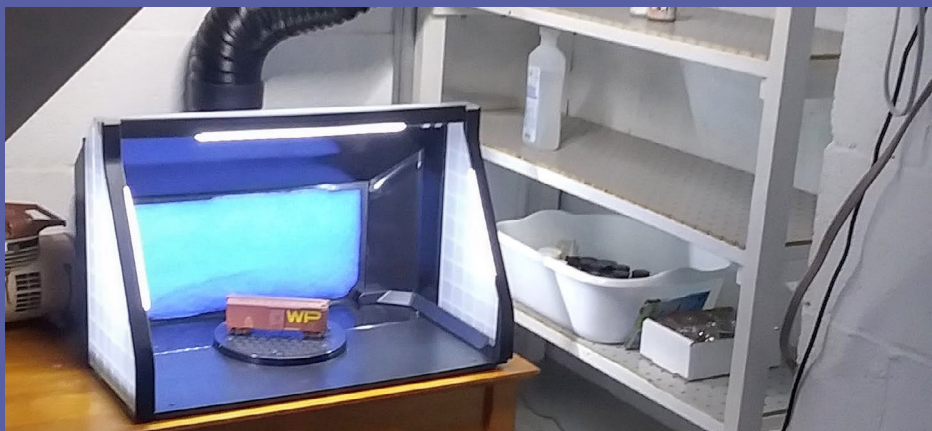
At the same time, Doug has built and operates a very modest HO scale layout. He has also long modeled in Fn3 in the garden, including running live steam.

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. ■

Developing a safe painting and weathering area



Model Railroad Hobbyist | February 2021

J.W. SNYDER CREATES A VENTILATED PAINTING STATION ON A BUDGET ...



FIGURING OUT A PLACE TO SAFELY DO PAINTING AND WEATHERING has been one of the challenges in working on the Tionesta and Kinzua Valley Railroad. My layout is a small HO timber and granite quarry operation set in the mid 1960s, so everything has to be severely weathered. That requires many techniques, mostly airbrushing, so finding a safe place I can ventilate well is a must.

As I was converting our split-level cottage's one-car garage into the layout room (now called "the lab"), I purposely set aside an area across the back for a workbench, toolboxes, and a parts inventory. At first, I thought I would do the painting and weathering in that area, but even with two strong fans and the sliding glass door open on a cool, low-humidity day, the fumes were too strong in the garage.



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I tried setting up under the carport, but that proved to be limited to good weather. Correct humidity, temperature, and air flow are all necessary for good, safe painting, and I needed to be able to paint year-round, despite the weather. I delayed the paint station idea, and continued on the layout and construction until I could come up with a better solution.

Viewing *MRH's* Trainmasters TV "Notch 8" video airbrushing series with Alan Houtz, several YouTube videos, and other resources convinced me I needed a good paint booth with proper external ventilation. I already had the airbrush and equipment, I just needed to find a space.

I remembered that our house's original owner had installed a gas dryer underneath the staircase in the utility room. I had removed the old dryer vent, plugged it, and intended to fill it in. Now it seemed like the perfect place and vent for a painting station.

I set about cleaning up and repairing the area. I sanded the underside of the stairs, caulked the brick wall as needed, and gave the whole area a coat of paint. A clean, dust-free area is a must for any paint booth.

A friend had saved for me some gray pegboard from a defunct convenience store. I put that to use with some re-purposed hardwood and some ½" plywood to build a shelving unit which I painted and installed in an indented area of the wall. This gave me a place to store my paints and stains.

A neighbor left a single-drawer homework table and chair at the curb for trash pickup. Its dimensions looked perfect to fit the space and provide a workbench for my painting booth and compressor, and its drawer would be excellent storage for my airbrushes' various heads, cups, and other parts. The table had a few scratches on the surface, but that didn't matter to me since the paint booth would be on top of it anyway.

A good painting booth requires ample light. I installed a bright LED light strip on the underside of the highest step. Combined with the LED strips on the paint booth itself, this would provide more than sufficient light.

“I wanted to make sure the paint fumes would get out, but I also wanted to prevent any unlawful varmints from getting in. I installed a caged, louvered hood on the exterior end of the vent.”

When the paint booth arrived, I assembled it. I connected the exhaust hose to the old dryer vent and tested it with rubbing alcohol fumes. It had an excellent draft.

I masked-off the interior of the booth by taping white cardstock to the sides. The white cardstock created an even brighter painting area and protected the walls of the paint booth. Even better, cleanup could be as simple as replacing the card stock.

I wanted to make sure the paint fumes would get out, but I also wanted to prevent any unlawful varmints from getting in. I installed a caged, louvered hood on the exterior end of the vent.

I hooked up my old, dependable Thomas piston air compressor with the rig, hose, single action gun, and holder. I set it on some thick felt pads to reduce vibration and noise. I connected the air compressor power with an on/off foot switch from a sewing machine another neighbor had tossed.

To complete the new space, I needed a wheeled office chair to sit in while doing my work. Unfortunately, no neighbors were disposing of office chairs, but I did obtain a slightly-used one from a thrift store.

With everything in place, it was time to try my new painting station. I sat down in the chair, bellied up to the booth, grabbed my paint-loaded gun, stepped on the switch, and sprayed some test strips. Aaaaah! Virtually no smell, bright work light, smooth flow, and I am safely painting again. The whole setup cost me only \$203.70, \$170 of which was the portable paint booth! ☒



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J.W. SNYDER



Coming from a family of railroad heritage (his grandpa was a B&O engineer, his mom was a clerk for the AC&Y, and “Granpaps” had a large basement Lionel layout) J.W. was constantly exposed to both prototype and model railroading in his childhood. As life went on with various involvement in rail museums, restoration projects, writing, photography, and the opportunity to railfan both the big

stuff and train shows, he missed modeling.

Some years later, after receiving a beginner N scale train set for Christmas, he grabbed the throttle and went full-steam. With three layouts completed and lost in relocation, he finally settled on an HO short line, and the Tionesta & Kinzua Valley RR was born.

He continues working on his pike. Having a very small budget to work with, he invested in second-hand top-notch locomotives, rolling stock, electronics, and hardware, only buying new when he could not find it used. To convert the garage, and to build the benchwork he opted to repurpose construction wood and extruded foam, commercial track lighting, display material, and hardware from closed stores. During this time of pandemic and swings in the economy, he practices what most small prototype short lines do: home-shop, knock it together, repair in place, recycle, and repurpose. ■



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SAVVY MODELER *Online*



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Model Railroad Hobbyist | February 2021



Easily make realistic foam rocks

Youtube modeler *johns miniatures* shows the steps he takes to easily make realistic rocks from foam! John does not appear to be a model railroader, but his clever methods work perfectly well for model railroad scenery made from foam!

Don't just confine yourself to model railroaders when it comes to how-to videos. Cross-pollination with other model-making hobbyists can yield great new methods. ☑



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FEBRUARY NEWS

column



Model Railroad Hobbyist | February 2021

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



INDUSTRY NEWS

NMRA Cancels 2021 National Convention

The host committee of the 2021 national convention of National Model Railroad Association 2021, Rails By The Bay, has canceled the event that had been scheduled for the Santa Clara Marriott Hotel & Conference Center on July 4-11, 2021. The National Train Show, which is separately planned and operated, has also been canceled. Pursuant to current government orders in California and Santa Clara County, the convention committee has been unable to obtain commitments from bus companies, tour sites, private layout owners, and other key convention support services. A multi-day video virtual event—which will retain the name NMRA 2021 Rails By The Bay—is under development. More detailed information is expected to be released by April 2021. Information regarding registration refunds is available at registrar@nmra2021.com.

THE LATEST MODEL RAILROAD PRODUCTS, NEWS & EVENTS

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ScaleTrains.com has purchased MTH's HO and S scale tooling, including engineering drawings and products that were in development prior to MTH's owner deciding to retire. Tooling is already moving to the ScaleTrains.com factory and test shots are being made to certify that the tooling is complete. MTH products will have LokSound 5 DCC decoders and the same motors found in ScaleTrains.com products in the future. MTH dealers can contact ScaleTrains.com at retailers@scaletrains.com. MTH Service Centers will continue to service MTH products. For more information see the video at www.youtube.com/watch?v=moYQb1tCIVM.

Caboose Hobbies Ends 83 Year Run

Caboose Hobbies, the one-time model railroad retail giant in Denver, Colorado, has permanently shut its doors. Caboose Hobbies was established in Denver in 1938 by Glen Brazelton. His son Duane Miller took over in 1969 and built the family business into a world famous model railroad hobby store. After efforts to renew their lease at 500 S. Broadway failed, family members decided in 2016 that it was time to sell the business and retire. Kevin Ruble purchased Caboose Hobbies and reopened at 10800 W. Alameda Avenue in nearby Lakewood in February 2017 as Caboose. The new operation in Lakewood struggled to regain the service level and sales momentum of the original. Long-time Caboose customers complained about the lack of selection and poor service. Several said the store was the same in name only.

Walk-in trade slowed measurably due to COVID-19, prompting the store to temporarily close effective March 18, 2020. Although the real purpose was unclear, Ruble restructured the business as a 100 percent employee-owned public benefit corporation effective June 1, 2020. The announcement noted that among the expected changes was an increased emphasis on e-commerce. In conjunction with the change, Ruble announced that Chris Palomarez, former



brand manager at Athearn Trains, had joined the Caboose team as general manager.

In a recent announcement employee-owned Caboose stated that the retail storefront in Lakewood was permanently closed. Individuals with consignment items at Caboose were asked to contact the company at info@MyCaboose.com. The landmark Caboose Hobbies that Guinness Book of Records recognized as the world's largest model train store is now history.

US Address for Rapido

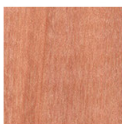
Canadian-based Rapido Trains has established a service center in the United States. In making the announcement, Rapido cautioned that customers must follow the instructions on the warranty page (rapidotrains.com/warranty) before sending anything to the service center. The address of the new US service center is: Rapido Trains Inc., P.O. Box 4142, Windsor Locks, CT 06096. Telephone (855) 572-6917.

Walthers has announced that the 2021 Walthers National Model Railroad Build Off (NMRBO) will begin on February 1st. A competition open to all ages, individuals and teams, the goal is to see who can create the most unique layout. There are multiple classes and categories with a top prize of \$3,000. More information can be found at trains.walthers.com/national-model-railroader-build-off-2021.

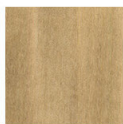
NEW PRODUCTS FOR ALL SCALES



Aged Barn Wood



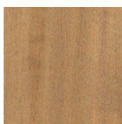
Burnt Sienna



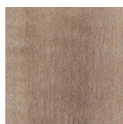
Raw Umber



Light Amber



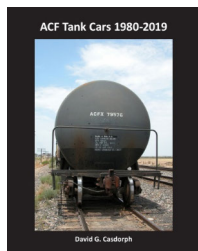
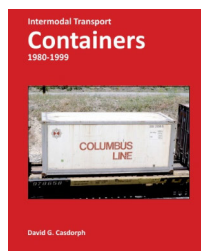
Medium Cherry Brown



Murky Brown

Bollinger Edgerly Scale Trains has released a new product line, Vetro Solutions. Each 200ml bottle of weathering solution can be used on wood, cardstock, paper, plastic, plaster, hydrocal and other surfaces. Alcohol based, six different colors have

been released: Aged Barn Wood, Burnt Sienna, Raw Umber, Light Amber, Medium Cherry Brown, and Murky Brown. There is also an option to buy all six for the price of five. For more information visit veterosolutions.com.



New titles authored by **David Casdorph** include *Intermodal Transport Containers 1980-1999*, and *ACF Tank Cars 1980-2019*. The intermodal book covers early ZIM containers, ISO Size-Type 2040s, Santa Fe's Containers, Han

Jin Containers, Container Transport International, and United States Lines containers in 12 tables and 221 photos with detailed captions. Casdorph's tank car book presents photos and historical details on both private and railroad owned tank cars in North America in 260 captioned in-service photos. The books are 8.5" x 11" format printed on 80 lb. coated paper. For additional information visit www.lulu.com/spotlight/glaciersurfer.



Iowa Scaled Engineering has introduced the Motorman, an automatic reversing train shuttle controller for both DC and DCC locomotives. Using TrainSpotter infrared proximity detectors at each end, the Motorman will continuously drive the train back and forth, automatically

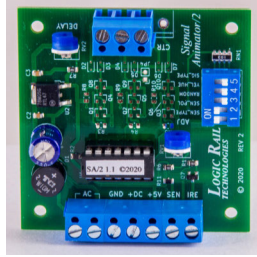
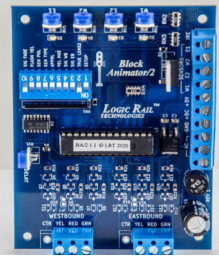
stopping and reversing at the end of track. With control of the speed, locomotive address, delay time, and many other settings, a fully customized experience can be created. For additional information including instructional videos visit www.iascaled.com/Motorman.



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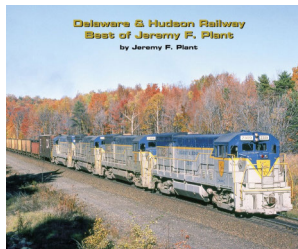
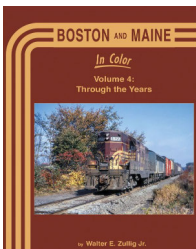
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Logic Rail Technologies has released the second generation of its Signal Animator (far left) that features a random mode (simulate phantom train traffic) and improved

infrared detection. The device animates a block signal using a single sensor (photocell or infrared components). When the sensor is covered the signal turns red. After the train clears the sensor the signal will change to yellow using a user-adjustable time delay on the circuit board. After another delay the signal returns to green.

Also new from Logic Rail Technologies is the second generation of Block Animator (above right). This circuit recreates near-prototypical signal behavior and controls two, 3-aspect independent signal heads with bi-directional detection. The new Block Animator/2 has a user-adjustable time delay, improved infrared detection, a flashing yellow aspect, and signal aspect fading to represent older prototype signals. For complete details visit www.logicrailtech.com.



New railroad books from **Morning Sun** include volume four of Walter E. Zullig's *Boston & Maine in Color*. Assembled from over 150 small lines, B&M traces its roots to the early

1830s. The book features the B&M's history and discusses the many improvements such as Hoosac Tunnel, Boston North Station terminal complex, East Deerfield Yard, and early dieselization. The principal routes are featured in striking color spanning the 1930s through the present.

Delaware & Hudson Railway Best of Jeremy F. Plant, is a new softcover book in which author/photographer Plant documents the New York's Capital District where he grew up. The book contains his favorite shots with all types of D&H diesel locomotives. Special attention is given to Alco PAs and Baldwin Sharks. For additional information contact a dealer or visit www.morningsunbooks.com.



Available for pre-order from **Train Control Systems (TCS)** is the UWT-50 Mini-Throttle. Featuring a knob controller (either potentiometer or encoder), 1.42" x 0.92" backlit LCD screen, two reprogrammable buttons on the face of the throttle, and two three-position pushbutton toggle switches on the sides of the unit, the UWT-50 is smaller but retains all the functions of the UWT-100 throttle. It

can be used over a WiFi connection to a JMRI server, Digitrax LNWI, or DCC command station with a built-in JMRI-compatible WiFi access point. Like the UWT-100, the UWT-50 will feature LCC compatibility and in-throttle consisting. Power comes from two AA-size batteries and it can use rechargables. For more information visit tcsdcc.com.

MULTIPLE SCALE PRODUCT NEWS



Woodland Scenics has announced that a new Built & Ready building is coming soon. Named Records & Recruiting, the building features printed interiors of a record shop, an Army Recruiting office, and upstairs



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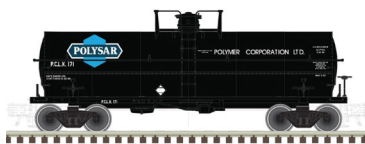
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apartments. Additional details such as crates, barrels and signage are included. Hand painted and weathered, the structure features pre-installed LED lighting made for use with the Just Plug® Lighting System. The structure will be offered in N, HO and O scales. For more information visit woodlandscenics.com.

O SCALE PRODUCT NEWS



Foundry primarily for transporting liquefied petroleum gas.



Atlas O has scheduled a 4th quarter 2021 release for an 11,000 gallon tank car. The O scale model is based on cars built by American Car & Foundry primarily for transporting liquefied petroleum gas.

Decorating schemes will include UTLX-Atlantic, WRNX-Warren, NDX-Allied Chemical, UTLX-Atlantic Refining, CGTX-Dow Canada, UTLX-Smith Douglass, TBOX-Tidewater Associated, and PCLX-Polysar.



Decorating schemes will include ADM, Peavey Company, Tabor & Company, Indiana Farm Bureau CO-OP, Scoular, Valley Mills, CMA, and Gold Kist.

Also coming from Atlas O late this year is a PS 4427 cu. ft. covered hopper car. The model is based on a car with low-sides introduced by Pullman-Standard in the mid-1960s.



The O scale model features opening hatches with full working latch assembly, separately-applied wire grab irons, a see-through roofwalk, and sprung diecast 100-ton roller-bearing trucks with rotating bearing caps. For additional information contact a dealer or visit www.atlaso.com.

Berkshire Valley Models has added several new items to its line of O detail parts. The 1:48 scale items include pillow



blocks with 1/32" and 1/16" holes. Additional new items include hose bibs, gears, and sprockets. For more

information visit www.berkshirevalleymodels.com.

S SCALE PRODUCT NEWS



Centerline Products has announced a new S gauge rail cleaner chassis machined out of brass. Designed to accept an American Models 40' boxcar

body, the body is not included. The rail cleaner includes either scale trucks and couplers; HiRail trucks and couplers; or neither if the modeler prefers to install their own. Also included are a brass roller and 10 roller covers. For more information visit centerline-products.com.



Crescent Creek Models has released their first Signature Line kit in S scale, Last Chance Gas. Based on a Conoco station that stood in Peñasco, NM, the kit includes numerous white metal, laser cut and 3D printed details. The parts of the kit are laser cut, with the finished kit measuring

3.45" x 4.95", not including the pump island. Sign sheets are included with vintage advertising and signage for Conoco, Texaco, and Frijolene. For more information visit



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thundermesa.studio/crescent-creek-models.



Ohio, Western Maryland, and Akron Canton & Youngstown.



MTH has released an S scale version of a PS-1 coal hopper in eight road names including Norfolk & Western, Chesapeake & Ohio, Jersey Central, Reading, Lehigh Valley, Baltimore & Ohio, Western Maryland, and Akron Canton & Youngstown. The model features an ABS body, metal wheels and separate metal grab irons. For additional information contact a dealer or visit mthtrains.com.



Pre-size Model Specialties has released coil cover kits in S scale for use with

their Greenville Gondola kit #PS576. The prototype coil covers were built in 1987 and are still in use today. Made of high-quality resin, the kit includes separate parts and decals. For more information visit pre-size.com.

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**RUNNING
EXTRA**



FOWLER BOXCARS



R. Bale

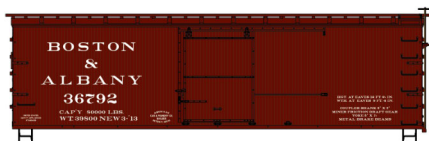
Canadian Pacific master car builder, W.E. Fowler, patented his single-sheathed boxcar in 1911. The Fowler design featured a steel underframe with single-sheathed wood sides and ends. There were three panels on each side of the door with diagonal steel braces applied only on the two inner side panels. Between 1912 and the early 1920s nearly 80,000 cars of Fowler design were manufactured by various North American car builders. Canadian versions of Fowler cars were sometimes called Dominion cars.

HO SCALE PRODUCT NEWS



for Chicago & North Western and shows a built date of November 1914.

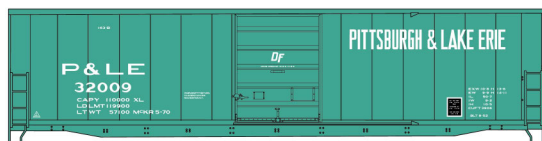
Accurail has released several new HO scale freight car kits including one for a 36' Fowler boxcar. The model is decorated



This 36' Boston & Albany double sheathed wood boxcar is based on a prototype built in 1913 by ACF. It has wood ends, a steel roof, and steel fishbelly underframe.



A Delaware & Hudson car is similar except it has steel ends. It was built in 1907 and displays a D&H Bridge Line herald.



This 50' Pittsburgh & Lake Erie welded steel boxcar has Superior sliding doors.

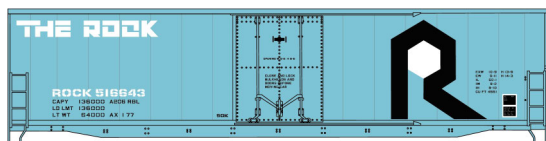


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Accurail's HO scale model is based on a prototype built in August 1952.



This Rock Island version of a 50' welded steel boxcar has plug doors.

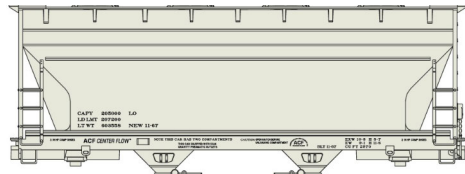


Accurail's HO scale kit for this 40' AAR steel boxcar is based on a prototype built in March 1942.



Among the newest HO scale kits from Accurail is a Pullman-Standard 4750 cu. ft. covered hopper decorated for Burlington Northern.

The model is available singly and in a 3-car set with different road numbers.



For modelers wanting to apply lessee or road name decals of their own choosing, Accurail is offering an ACF 2970 cu. ft. Center-Flow twin-bay covered hopper

painted and decorated with data only.



Accurail's HO scale kit for this 40' rib side automobile boxcar with offset double doors is based on a prototype built in December 1943.

Sometime later it was repainted in Milwaukee Road's post-1959 billboard lettering scheme. 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 FP45 LOCOMOTIVE

The EMD FP45 is a cowl version of an SDP45. It was produced beginning in 1967 at the request of ATSF which did not want its prestigious Super Chief, El Capitan and other name passenger trains pulled by freight hood-style locomotives. EMD designed a lightweight cowl body to cover the locomotive. The cowl provided sleeker looks, better aerodynamics at speed, and allowed the crew to enter the engine compartment for diagnostics and maintenance while underway. Santa Fe purchased nine of the locomotives, the Milwaukee Road bought five. Santa Fe's SDFP45 No. 96 was wrecked in 1994 on Cajon Pass. While ATSF No. 91 was sold to the Wisconsin Central in January 1995, the rest stayed in service until the BNSF merger in 1996. Milwaukee Road's FP45s were all sold for scrap.



Athearn has announced a December 2021 delivery date for

another production run of EMD FP45 diesel locomotives. The HO scale Genesis series model will be available in seven decorating schemes with numerous road-specific details. Santa Fe FP45s will have a Leslie horn, a combination clear and red nose-mounted Gyrallight and dynamic brakes.



Unique details on FP45s decorated in the premature SF

and SPSF Kodachrome schemes include an operating roof-mounted Stratolight, cab air conditioning unit and Sinclair ground plane antennas.



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BNSF road numbers 93 and 97 in Heritage II livery are

included in this release. Details include a K3LA horn, large and small antenna platforms, and a cab air conditioner. The safety lights between the number plates have been removed and plated over.



Completing this release are FP45 locomotives decorated for

Milwaukee Road, Western Pacific, Burlington Northern and Wisconsin Central.



Features on all Athearn's Genesis FP45s include full cab interior with see-through windows, flush mounted port

hole window glass, individual windshield wipers, walkway tread, lift rings, wire grab irons and LED lighting.



Chassis details include uncoupling levers, flexible

rubber MU and trainline hoses, detailed fuel tank with fuel fillers, fuel gauges, and breather pipes; and six-wheel Flexicoil-C sideframes with brake cylinders and sander lines.



Athearn has included an EMD SD70M-2

in its December 2021 production schedule. The HO scale Genesis 2.0 model will be available with road specific details for five railroads including Norfolk Southern. The NS model represents prototypes delivered in 2005-06 with ditch lights at the front and rear. An alternate PTC roof will be included with the model.



Three Florida East Coast road numbers will be available

painted in the red, white and blue RailAmerica scheme.



Athearn's late 2021 production run will include

SD70M-2 Genesis 2.0 models decorated for Providence & Worcester, Canadian National, and CN No. 8952 in the Grand Trunk Heritage scheme.



In addition to Athearn's usual attention to detail, special

features on the Genesis 2.0 model include see-through pilot steps, operating marker lights, number boards and ground lights.



Athearn's FP45 and SD70M locomotive models will both

be available for DCC operation with an onboard SoundTraxx Tsunami2 sound decoder. DC models will feature Quick Plug technology with a 21-pin NEM connector for installation of an aftermarket DCC decoder.

Athearn has included a group of Santa Fe waycars in its December 2021 production schedule. The HO scale Genesis





Company. The run includes ATSF No. 999700, the only Santa Fe waycar to get the short-lived Kodachrome paint scheme.



The models will be available with DCC and lights, and with DCC, sound, and lights. Sounds include air horn or trainline air whistle as appropriate, clickety-clack with optional wheel flat spot sounds, brake set/release sounds including retainers and brake squeal, big hole emergency brake application sound, handbrake tie-down/release, adjustable flange squeal. Air, horn, and bell sounds are compatible with Soundtraxx locomotive sound decoders.

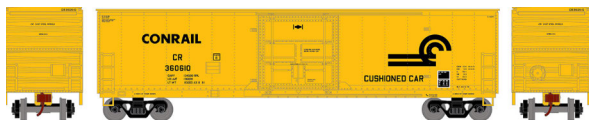


Santa Fe waycars stenciled TP&W represent eight cars the Toledo, Peoria & Western Railway leased from ATSF in the early 1980s. All versions of Athearn's ICC caboose/waycar models feature interior seating, see-through end platforms and steps, flush window glazing, wire grab irons, axle generator details, uncoupling bars, trainline hoses, brake hoses, and full underframe brake detail.



26' ore cars with removable loads are scheduled for release by Athearn in December 2021. Cars with low sides will be available for Canadian Pacific, Conrail, Ferromex, and Rio Tinto Group of Australia. A Union Pacific MOW car will come with a simulated ballast load; all other loads will simulate ore.

A Southern Pacific car based on an SP class G-100-1 with high sides will be included in this release. It will be the only model in this run with heavy-duty outside-clasp trucks. All versions of the HO scale model will be available singly and in 4-packs with different numbers.



Athearn's December 2021 schedule includes this 50' steel boxcar with a

Superior plug door. In addition to Conrail, road names will be Southern Pacific, Penn Central, FGE/Clinchfield, Norfolk & Western, and Canadian National.



New 40' high-cube containers decorated for MSC, MSC/Florens, Ocean Network Express, Cosco Shipping, Touax/MOL, NYK, and Maersk are due from Athearn next December. The containers will come in 3-packs with a mix of

different schemes.



R. Bale

FORD MODEL A

The Model A was the successor to Henry Ford's popular, but primitive, Model T. In a four-year production run from late 1927 to early 1931 more than 4.8 million Model A Fords were built. Starting at \$335 for a roadster, a total of 13 body styles were offered including a pickup truck that was adapted into countless specialized uses including a telephone service truck.



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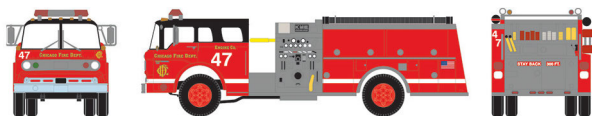
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Athearn has included a Ford Model A telephone truck in its December production. The 1:87 scale model will be available decorated for Bell

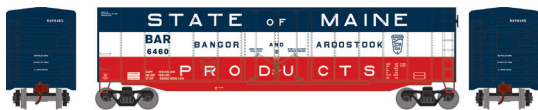
Telephone, New England Telephone, New Jersey Bell, Pacific Bell, Bell of Pennsylvania, Wisconsin Bell, Southwestern Bell, Bell Telephone of Canada, and Illinois Bell Telephone.



A Ford C canopy cab pumper fire truck with rubber tires and molded cab

interior will be available from Athearn in December.

Community identification for the 1:87 scale vehicles will be Napa, Highspire, Perryville, City of Los Angeles, Washington DC, and Chicago.



Roundhouse products coming from Athearn next December include a 50' PS-1 boxcar fitted

with a plug door. Road names for the HO scale ready-to-run model will be Canadian Pacific, Denver & Rio Grande Western, Southern Railway, Pennsylvania Railroad, Delaware & Hudson, and the iconic red, white and blue State of Maine scheme of the Bangor & Aroostook Railway.



On Athearn's January 2022 production schedule is a new

run of the Genesis HO scale F89-F Bi-level auto rack. Featuring a die-cast underframe, Whitehead and Kales auto rack, customer installed bridge plates, and separately applied grab irons, the models also include coupler lift bars, trainline hoses, brake hoses and hardware. RP25 machined metal wheels and McHenry knuckle couplers are standard. Roadnames included

in this run are Southern, New York Central, Chicago, Burlington & Quincy; Frisco, Illinois Central, and Northern Pacific.

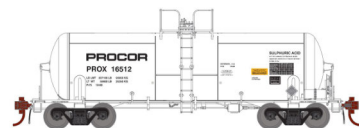


For the January 2022 production schedule, Athearn's SD70ACe model has received an upgrade to the Genesis 2.0 level. Genesis 2.0 features include etched, see-through walkway steps, illuminated number boards, illuminated ground lights on the front trucks, illuminated marker lights (where applicable), and a redesigned underframe with more weight, dual cube speakers, and LED lighting that uses contacts between the frame and body to eliminate wires connecting the two.



The SD70ACe models also include a full cab interior, wire grab irons, coupler cut levers, flexible MU and trainline hoses, and many other details. The DC

model is equipped with a 21-pin NEM connector and the DCC/Sound equipped models include a SoundTraxx Tsunami2 decoder. Roadnames and numbers in this release include Union Pacific Heritage units 1982 (Missouri Pacific), 1983 (Western Pacific), and 1988 (Katy); BNSF 8401, 8438, and 8597; Montana Rail Link 4400, 4401, 4403, and 4404, the locomotive decorated to honor essential workers; and Tacoma Rail 7001 and 7002.



Also on the January 2022 production schedule is the Genesis 13,000-gallon Acid Tank Car. Featuring both early and late body phases, the models include etched metal walkways, prototype specific end

sills and brake systems, and full underframe detail. RP25 machined metal wheels and McHenry scale double-shelf couplers are standard. Roadnames in this run include UTLX – White, UTLX – White/Green, Grupo Mexico – White, Grupo Mexico – Black (Primed for Grime), MDCX – Black, Procor, Kennecott Copper, and Chevron.



In the RTR line for January 2022, Athearn is producing another run of SD40T-2 locomotives in



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several different road names and with roadnumber specific details. All of the models include photo-etched windshield wipers, welded ECAFB, separately applied air tanks, see-through dynamic brake fans, rubber MU and trainline hoses, and see-through radiator grilles with a new rear truck gearbox specific to the tunnel motor. Roadnames for this run are Southern Pacific – 1990s era, Southern Pacific – “Roseville Repaints,” Southern Pacific – Daylight, Southern Pacific – As delivered 8489 class, Rio Grande, Wheeling & Lake Erie (both Rio Grande and UP patches), and Ohio Central. Also available is the upgraded SD40T-2 mechanism with the reversed rear truck.



Sound Equipped models feature SoundTraxx Econami DCC/ Sound decoders and DC models are DCC ready with 21-pin NEM Quick Plug sockets. RP25

contour wheels, 5-pole motor with flywheels and McHenry scale knuckle couplers are standard on all models.



Also in RTR, Athearn will be producing a PS-2 2600 cu. ft. Covered Hopper in HO scale. The models feature a flush or overhanging roof per the prototype, RP25 contour machined metal wheels and McHenry scale double-

shelf knuckle couplers.



In the Roundhouse line, Athearn is offering Bay Window Caboose in nine different roadnames with 10 different paint schemes. Featuring machined metal wheels in all-new Barber-Bettendorf

Swing Motion caboose trucks, the model will be produced for Pennsylvania, New York Central, Erie, Illinois Terminal, Nickel Plate Road, Northern Alberta Railway, Milwaukee Road, Frisco, and RJ Corman (two schemes).



The final announcement for the HO scale January 2022 production run is a Roundhouse 36' Old Time Boxcar.

Equipped with 50-ton Archbar trucks with 33" wheels and McHenry couplers,

the models are representative of prototype paint schemes. Roadnames in this release include Cotton Belt, Santa Fe, New York Ontario & Western, Chesapeake & Ohio, Nickel Plate Road, and Missouri-Kansas-Texas.

Preorders for Athearn products on the January 2022 production schedule are due February 26, 2021. For additional information on Athearn and Roundhouse products contact a dealer or visit www.athearn.com.



the slightly shorter SW1500. The longer frame of the MP15DC provided room for increased fuel capacity and the use of Blomberg road trucks.

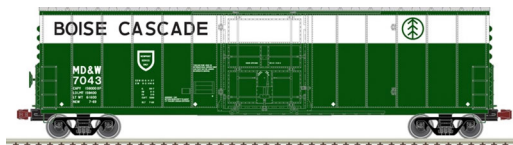
Atlas has announced plans to release a new run of its EMD MP15DC late this year. The HO scale switch engine is based on a 1,500hp switcher EMD introduced in 1974 as a replacement



hood with square air filter box, and hood with angled air filter box immediately ahead of the cab), exhaust stacks with or without muffler, sand box variations, and snow plow or standard pilot.

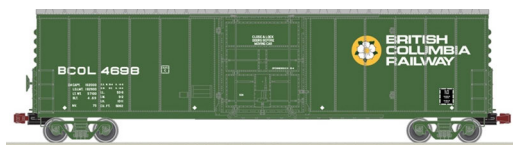
Road names will be FURX-First Union Rail, LTEX, Prairie Line, Missouri Pacific, Reading, Southern, Southern Pacific, and Norfolk Southern. Options on Atlas's HO version include three different styles of hood (standard,

Details on the ready-to-run models include individual windshield wipers, metal grab irons, uncoupling levers, MU and train line hoses, snow plow pilot, etched metal radiator grilles, and see-through sill detail. Gold Series models include LokSound Select Sound decoders, Silver Series models include an NMRA 8-pin plug for a customer provided DCC decoder. Both Series locomotives will operate under DC power.



New HO scale freight cars coming from Atlas include a National Steel Car newsprint boxcar.

Features of the Master series ready-to-run model include realistic plug door replication, separately applied details, and Symington roller-bearing trucks.



Road names will be two Canadian National schemes, Canadian Pacific (Pine tree



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scheme), two Central Vermont schemes, MD&W-Boise Cascade, and BOCL-British Columbia Railway.



An HO scale version of a three compartment ACF 3560 cu. ft.



R. Bale

NEWSPRINT BOXCAR

In 1967, the National Steel Car Corporation of Hamilton, Ontario, created the first purpose-built cars for transporting newsprint between Canada and the US. To protect the large rolls of paper, which weighed up to 2,000 pounds each, the cars featured completely smooth interior surfaces including the doors. The newsprint rolls were normally stacked two high, requiring an internal height of more than 9' for clearance. The large door openings were fitted with either Youngstown lever-type flush plug doors or lever-less exterior post plug doors.

Center-Flow covered hopper is coming from Atlas during the 4th quarter of 2021.



Decorating schemes for the Trainman series model will be ACFX CanCarb, Georgia Pacific, Chessie System C&O, CSX, Duluth Missabe & Iron Range, ACFX-Kerr-McGee, and Potash Corporation.



Several new paint schemes will be available for Atlas's next production run of the unique 73' center partition car. The Atlas HO scale Master series model is based on the 1986 version of the popular prototype. Road names will be Iowa Northern Railway, Northern Southern, First

Union Rail, Willamette & Pacific Railroad, BNSF, Canadian Pacific, TTX, and Union Pacific.



Noteworthy details include simulated ratchets, cable hooks, and tie-loops; see-through top chord holes, cable slots, wire grab irons, etched cross-over walks, detailed jack pads, and newly tooled 286k heavy axle load trucks. Atlas recommends a 22' minimum track radius for the 73'

cars. For additional information contact a dealer or visit <https://atlasrr.com>.

Bachmann has introduced a Trackside Turnout Decoder that upgrades electrically operated HO scale turnouts to function in a DCC system. The circuit for each turnout is hidden inside a common trackside structure. Experienced modelers can solder hidden leads to their control circuit board. For plug-and-play applications, connecting wires with appropriate terminals are provided that can be connected directly between E-Z Track turnouts and the circuit in the structure. A video explaining how the Bachmann Trackside Turnout Decoder works is available for viewing at www.youtube.com/watch?v=VJu631IXVHE&feature=youtu.be.



Also new from Bachmann is an HO scale Amtrak Acela in a packaged Spectrum Series train set. The five unit set includes two locomotives (one is unpowered), a first class coach, a café car, a business class car, a 45" x 81" oval of nickel silver E-Z Track, a power pack, and an analog speed controller. The passenger cars feature flush windows,

illuminated interiors, and tilting chassis to travel smoothly around curves at high speed. The powered locomotive features a Digital Command Control motor and light decoder. An E-Z Command or other National



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Model Railroad Association-compliant digital control system is required for DCC operation.



Bachmann has announced two new roadnames for its very successful Siemens SC-44 Charger passenger locomotive.

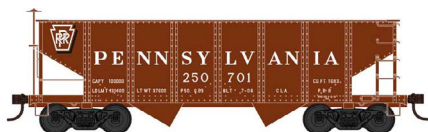
The roadnames are Altamont Corridor Express (ACE) and North County Transit District Coaster. The SC-44 includes a TCS WOWSound DCC/Sound decoder with voice assist, separately applied windshield wipers, grab irons, and detail parts; marker lights, roof-mounted white and emergency red strobe lights; interior corridor lights, and directional headlights.

New for 2021 are fully assembled girder bridges, designed for use with Bachmann's *E-Z Track* system. 2.5" W x 9" L, they are available in four paint schemes: Pennsylvania RR, Union Pacific, Santa Fe, and a generic cartoon "Traffic? Next time take the train!" scheme. For additional information contact a dealer or visit www.bachmanntrains.com.



Bowser plans to release four new HO scale models in February

including an all-Canadian GMD SD40-2 locomotive. For detailed information on this production run go to online.fliphtml5.com/buups/kxes/index.html#p=147.



Also coming from Bowser this month is a group of class GLa twin-bay coal hoppers. Details including all road names are available at

online.fliphtml5.com/buups/hevq/index.html#p=127.



Information on Bowser's HO scale all-steel class N5, N5C, and N8 way cars is available at s3-us-west-2.amazonaws.com/mrhpublish.com/2019-06-jun/online/index.html.

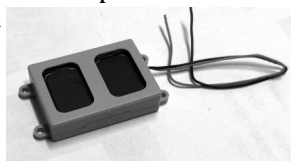




HO scale versions of Alco Century C628, C630, and C630M diesel locomotives are scheduled to be available from Bowser this month. For complete details on this

release go to mrhpub.com/2017-06-jun/online/html5.

Bowser has also announced that a new low-height sugar cube speaker is now in stock. Measuring 17.5mm x 25.5mm x 6.7mm in size, it is significantly smaller than the standard 16.5 mm x 35.6 mm x 9.5 mm sugar cube speaker available from Bowser. This speaker will be used in Bowser's upcoming RS-3 model. For more information visit www.bowser-trains.com.



Broadway Limited has released an HO scale model of a Norfolk & Western Y6b 2-8-8-2 steam locomotive. The superstructure and chassis of the HO scale model are both diecast metal.



The HO scale model is available

decorated in N&W's standard in-service scheme and in a blue fantasy scheme. Painted but unlettered versions are also available. The model comes with Paragon3 Sound & Operation System with Rolling Thunder that functions in both DC and DCC environments. BLI's Y6b will negotiate 18" radius track. For additional information contact a dealer or visit www.broadway-limited.com.



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New 1:87 scale vehicles from **Classic Metal Works** include this 1950 Plymouth four-door sedan in Shore Green.



R. Bale

N&W Y6B Steam Locomotive

The 2-8-8-2 steam locomotive was known as the workhorse of the Norfolk & Western. It was a powerful beast that readily handled heavy tonnage on the grades and curves of N&W's mountainous line.

Beginning with a USRA design, N&W built several versions of the 2-8-8-2 in its shops in Roanoke, Virginia. The final version, the Y6b, was completed in 1952. It had 58" drivers and roller bearings on each of its 12 axles. It developed nearly 170,000 lbs of tractive effort. By comparison, the Union Pacific's highly-regarded 4-8-8-4 Big Boy developed 135,375 pounds of TE. When the N&W ceased their mainline steam operations in the summer of 1959, 50 of the Y6bs were still in service in the coal fields.



Also new is a green 1941-46 Chevrolet flatbed truck decorated for Railway Express

Agency. For additional information contact a dealer or visit www.walthers.com.



InterMountain is selling a 4750 cu. ft. triple-bay rib side covered hopper in seven new road names,

including one with nine variations for the same road. The GNBC-Farmers "I Care" series car, shown above, is available in nine road numbers with each number displaying the name of a different Farmrail employee. Cars with a choice of six road numbers are available for PLMX-Grain Handling Corp, and PTLX-Pomeroy CO-OP Grain.



Additional road names in this run include PTLX-Farmers Elevator, NAHX-Goodseed Grain, USLX-

Evergreen Fish Hatchery, and Union Pacific with a three-color UP shield.



Features of the HO scale ready-to-run model include appropriate trucks with machined metal

wheelsets and etched metal roofwalks. For additional information contact a dealer or visit www.intermountain-railway.com.



In addition to being known for its popular couplers that have become a de facto industry standard,

Kadee continues to release prototypically accurate freight car

models. The latest HO scale ready-to-run model is based on a



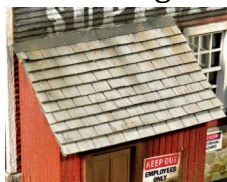
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50-ton AAR twin-bay coal hopper with offset sides acquired by Reading in 1957. Features include scale grab irons, ladders, and brake rigging; Kadee metal knuckle couplers, and Kadee self-centering equalized trucks. For additional information contact a dealer or visit www.kadee.com.

Mine Mount Models has released a new product line of roofing materials. Currently available are four styles of shingles: 3-Tab Asphalt, Random & Straight Edge Shakes, and Curved edge shingles. Plans for the future include Rolled



Roofing, Standing Seam, and Corrugated, among others. All shingles are laser-cut from .011" brown

laserboard and need to be painted. PDFs with painting instructions and tips are available on the company website at minemountmodels.com.



Moloco has a new group of prototypically accurate HO scale PC&F 50' RBL insulated boxcars. Features shared on all road names

include 10' offset plug doors and shelf-style uncoupling levers. Spotting features on a car decorated for NIRX (Erie Lease) include a Miner brake wheel mounted high on the B end, no running board, and low mounted tack board. All of the other road names have the tack board mounted high on the end.



Two versions of a Western Pacific car are in this release with the principal difference being the

running boards. Cars numbered 60502 and 60513 have an Apex running board while cars numbered 60509 and 60514 have had the running board removed.



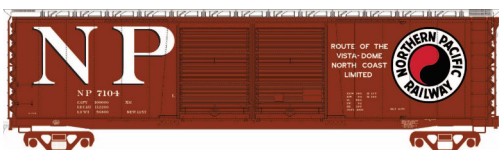
Metal running boards are also the noticeable difference in two Southern Pacific cars with car No. 697805 (left) being fitted with Apex brand running boards, crossover step and a

hand brake platform. SP No. 697864 and an SSW car (below right) have US Gypsum running boards.



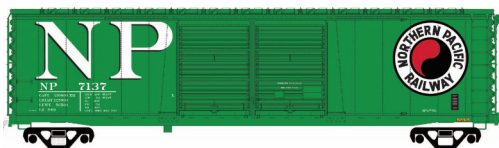
Moloco is booking reservations for Northern Pacific 50' class XM boxcars with a 15' opening filled by a pair of Youngstown sliding doors. The well-researched HO scale

models replicate plate B cars built in NP's Brainerd Shops beginning in 1956. Brainerd used numerous commercial components including Youngstown sides with their distinctive diagonal stiffening panels on either side of the door opening.

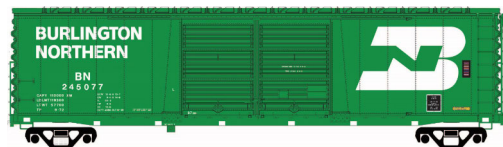


Decorating schemes for Moloco's new model include this 1957 as-delivered version in NP metallic brown with an 8'

NPR Monad herald.



Each design, including this 1969 repaint in Cascade Green, will be available in six numbers.



A 1972 Burlington Northern version with cut



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down end ladders will be available along with an undecorated kit.

Features included on Moloco's new model are an etched metal replica of Brainerd's unique running board design, rubber air hoses, metal corner stirrups, 50-ton trucks with metal wheelsets, and Kadee Whisker couplers. Variations in detail include either Ajax, Ellcon-National, Equipco, Klasing or Universal hand brakes depending on the prototype car number being modeled. Delivery is planned for late in the 3rd quarter of this year. For additional details visit contact a dealer or visit www.molocotrains.com.



Monster Modelworks has announced the availability of a new kit in HO scale, The Brick Freight House.

Measuring 6.875" x 12.25" x

4.5", the kit includes turnbuckles and downspouts, laser-cut overhangs, concrete overlays, rooftop drains, brick corners, peel & stick windows and doors with glazing; and 3D engraved roll-up doors. For more information visit

www.larkspurlaserart.com.



Piko has announced that they will be releasing a two-unit model of a Siemens Diesel Railcar decorated for the San Diego-area North County Transit District Sprinter service. Expected to be available

in August 2021, the trainset will be available in both 2-rail DC and DCC with sound versions, as well as HO scale 3-rail.



Also expected this summer is a US Army Transportation Corps Whitcomb 65 Ton (65-DE-19A) diesel locomotive. Produced during WWII, hundreds were shipped to Europe, where many

stayed to power European railroads over the next several decades. Some returned to the US and were sold to railroads and companies in North America. The first run will only be the USATC European version and the Netherlands Rh 2000 NS III, which were purchased by the Dutch State Railways from the US Army. While this release will not have knuckle couplers and no buffers, Piko America has noted that it would be easy to modify the tooling for a US railroad compatible unit and they expect to see them in the future. For more information visit www.piko-america.com.

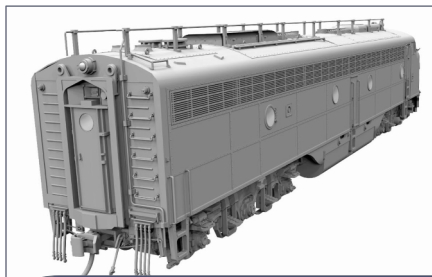


Development of an all-new HO scale EMD E8 is moving forward quickly at **Rapido**. The project includes numerous road-specific versions of both E8A and E8B diesel units. An Erie-Lackawanna version is shown in the 3D rendering. To ensure the elusive EMD nose was accurately replicated,

Rapido commissioned a 3D laser scan of a Union Pacific E8 at the Southern California Railway Museum, in Perris, CA. In addition to accurate nose and roof contours, Rapido reports that it is tooling four different porthole and side grille arrangements, and three different back ends. Variations in road-specific details include fan sizes, options in dynamic



brakes and skirting, and seven different arrangements of lights, lift rings, and grab irons on the nose.



Road names on the initial production run will include Pennsylvania as shown in the 3D rendering of the end detail and train phone antenna. Additional road names will be

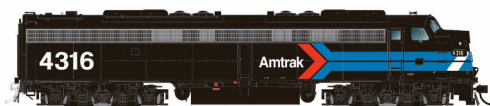


R. Bale

EMD E8 LOCOMOTIVE

The E8 was a 2,250hp diesel locomotive built for passenger service by General Motors Electro-Motive Division. A total of 450 E8A and 48 E8B units were built. Power came from two 12-cylinder 567 diesel engines each driving generators that supplied power to two traction motors on each six-wheel truck. In profile the front of the nose of E8 is less slanted than earlier EMD units. After passenger trains were canceled in 1970 on the Erie Lackawanna, the E8s were re-gearred and proved reliable in freight service until the early years of Conrail. Amtrak used E8's until the late 1970s. At 70'3" in length, an E8 is an impressive sight.

Amtrak (Phase 1), Burlington, Illinois Central, New York Central (Cigar Band), Southern (Crescent), Union Pacific, VIA Rail Canada, and three Canadian Pacific schemes. Both DC (DCC ready) and DCC sound units will be available. A video showing the introduction of Rapido's E8/E9 project is available at www.youtube.com/watch?v=jFyD4LRrjls&feature=youtu.be.



To mark the 50th anniversary of

Amtrak, Rapido will offer a special Limited-Edition model of Amtrak No. 4316, the first E8 that Amtrak painted in what would become a one-off paint scheme. The HO scale locomotive will be packaged in an engraved wood presentation box and include a unique enamel pin as well as a numbered certificate of authenticity signed by Rapido president Jason Shron and Amtrak's Matt Donnelly.

Rapido is booking advanced reservations for an HO scale Pennsylvania Railroad GLa class coal hopper. Introduced in 1904, PRR eventually owned nearly 30,000 of the GLa coal hoppers with more than 7,000 still in interchange service in 1960. Thousands more were owned by railroads other than PRR.



Rapido's newly-tooled HO scale version features full interior rivet and bracing details, wire grab irons, narrow semi-scale draft gear box, Kadee couplers, and PRR 12D-F8 trucks with machined metal wheelsets. In addition to

two PRR paint schemes (Circle and Shadow Keystone), road names on the initial production run will be New York, Ontario & Western; Berwind, Cambria & Indiana, Canadian National, Lehigh Valley, and Westmoreland Coal. An undecorated car will also be available.



Rapido shared photos of pre-production models nearing final development. They include an Alco PA and a Canadian Pacific D1-4-6-0 steam locomotive.





The models shown are both early samples and details are subject to change. For additional information on all Rapido products contact a dealer

or visit www.rapidotrains.com.



Resin Car Works has released a limited edition kit for an HO scale Illinois Central modified AAR 40' steel boxcar with a 10' 4" interior height. During a two year period beginning

in 1939, the Illinois Central acquired 5,000 of the AAR boxcars. The first 3,000 of these cars had square corner-post ends and are the focus of RCW's latest kit.

The kit consists of a one-piece car body and assorted wire sizes and grabs irons. Commercial parts include Plano Models etched ladders, Yarmouth Model Works etched roof walk and supports, A-Line stirrups, a Tichy AB brake set and Ajax hand brake hardware, and Precision Design Company decals. Tahoe Model Works trucks that are very close to those on the prototype are included. Couplers are not included in the kit. For additional information on this limited edition kit visit resincarworks.com/kits.htm.



ScaleTrains.com plans to make the first release of GE ES44 diesel locomotives in early March. Both Operator and

upscale Rivet Counter versions of the HO scale locomotive are in this initial release. Leading the Rivet Counter group is BNSF locomotive No. 6078, uniquely decorated to mark the 25th Anniversary of the merger of Burlington Northern and the Santa Fe Railway.



and Canadian National.



The CN model also has ditch lights on the rear deck and red DPU marker lights.

The ES44 will also be available decorated for Norfolk Southern (Horsehead scheme), BNSF (Heritage III scheme with C4 A-1-A trucks), and four CSX



liveries with GE steerable trucks. In addition to YN3, the CSX units will be available decorated in a 2019-era First Responder scheme (above) honoring the Pride in Service initiative. Additional CSX schemes in this project honor Law Enforcement and Armed Forces.



liveries with GE steerable trucks. In addition to YN3, the CSX units will be available decorated in a 2019-era First Responder scheme (above) honoring the Pride in Service initiative. Additional CSX schemes in this project honor Law Enforcement and Armed Forces.

The economy priced Operator series GE ES44 utilizes the same motor and drivetrain as the Rivet

Counter series, however, all units will have the same cab and long hood configuration and the body will be predrilled for the



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R. Bale

GE ES44 LOCOMOTIVE

General Electric introduced its GEVo series of modern diesel locomotives in 2002. The first two units were the ES44DC and ES44AC. The ES44C4 followed a few years later. The GEVo series was designed to replace earlier AC4400CW and Dash 9-44CW units, while complying with new emission standards imposed by the Environmental Protection Agency (EPA). The EPA established allowable emission levels, or tiers, based on a locomotive's date of manufacture. Tier 2 took effect in 2005 followed by Tier 3 in 2010. Although EPA Tier 4 standards went into effect in 2015, ES44s continue to be built. This is due to a complicated government formula that allows sharing and redistribution of emission credits between GE and the operating railroad. The external appearance of ES44 locomotives is similar to the AC4400CW with the most significant visual difference being the larger radiator wing structure on the back end of the locomotive. The thicker radiators and related equipment work to cool the exhaust, which reduces emissions. The ES44 has become the best-selling diesel locomotive of all time.

modeler to install grab irons, uncoupling levers, and hoses. The needed parts may be purchased in a separate detail kit.



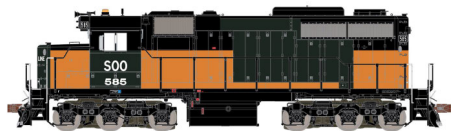
Road names will be BNSF Heritage III scheme, Canadian National, CSX YN3, Kansas City Southern, and Norfolk Southern Horsehead scheme. The Operator series ES44 will be available for DC/DCC operation with a 21-pin connector or with ESU LokSound 5 DCC and sound pre-installed at the factory.



ScaleTrains.com announced on the Amherst Virtual

Railway Hobby Show livestream that their second Museum Quality HO scale locomotive will be the EMD SDL39. Developed by EMD specifically for Milwaukee Road in 1969, only 10 SDL39s were built. Designed to serve on branchlines with light rail and bridges, they eventually ended up in Chile on the Fepasa.

Each road number will have details specific to that locomotive and numerous LEDs. Roadnames and paint schemes the model will be available in are Fepasa, Soo Line (Bandit), Wisconsin Central, and Milwaukee Road.



Also announced during the Amherst Virtual Railway Hobby Show, ScaleTrains.com's

second Kit Classics model will be the CB&Q Havelock Shops 52'6" Gondola. Appropriate for the late 1960s to late 1980s, the kit is easy to assemble with a small Phillips screwdriver, and features interior floor detail, cast stirrup steps, end ladders, grab irons, underbody, and brake systems. Roadnames in the first run are Soo Line, Norfolk & Western, Conrail, Chicago & North Western, Chicago, Burlington & Quincy; and Burlington Northern. The models will be equipped with 33" machined metal wheels in Barber S-2 trucks featuring raised lettering and foundry data. Body mounted semi-scale Type E knuckle couplers are included. For additional information visit www.scaletrains.com.



Southbound Modelworks & Decal Company is selling a craftsman style resin kit for an HO scale Seaboard Air Line class V-9 and V-10 ventilated boxcar.



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The HO scale craftsman kit accurately replicates a prototype built in 1923. In addition to a regular sliding door, the cars were built with alternate screen doors and end vents that allowed air to circulate, lessening the chance of spoilage in transit. Although it was not an official designation, rail fans and modelers nicknamed the unique cars 'watermelon cars' because they were designed specifically for transporting fresh fruit, including watermelons, that could be moved without refrigeration. The SM&D kit is an upgrade of a product originally developed by WrightTrak. The SM&D version includes resin castings for the car, wire for brake rigging, ladders, decals, and instructions. Couplers and trucks are not included. For additional information visit www.sbmwdco.com.



Patrick Harris is selling an HO scale kit for a 4400 cu. ft. wood chip car rebuilt from a 70-ton triple-bay coal hopper with offset sides. Produced by Bowser, the freelance car is decorated for Sun Belt System, a fictional railroad running from Alexandria, Louisiana, to the Atlantic Coast.



The model is available in four road numbers. For additional information, including ordering instructions, contact Patrick at seaboardcoast@hotmail.com.



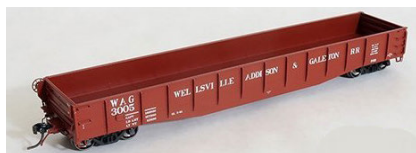
Tangent Scale Models has completed another release of its prototypically accurate HO scale model of a 52'6" 70-ton gondola. The model accurately replicates

cars produced by Bethlehem Steel from 1937 until 1957. Road names include two Baltimore & Ohio schemes; the 1940 Capitol Dome version (above) and a 1957 repaint displaying a large B&O.



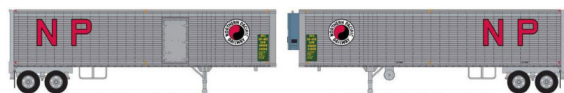
Additional schemes include Central of Pennsylvania, and Central Railroad of New Jersey with both schemes displaying the Lady Liberty herald.

Gondolas decorated for Lehigh Valley are available in the 1970 green scheme as well as in a 1973 repaint with a gray body and black lettering. Completing this release is a WAG car in a 1961 decorating scheme and a 1980-era Western Maryland gondola.



Variations in detail depending on the road name and number include steel or wood decks, Duryea or conventional end sill detail, and straight corrugated or

Dreadnaught drop ends. Handbrake variants include Universal, Ajax, or Equipco. All versions feature wire grab irons and uncoupling lift bars, separate air hoses, Kadee couplers, and 70-ton ASF A-3 Ride-Control trucks with 33" machined metal wheels. For additional information visit www.tangentscalemodels.com.



Trainworx has announced preorders for 40' corrugated dry and refrigerated

trailers in HO scale. Roadnames for this run are Rio Grande Motorway, Santa Fe, Chesapeake and Ohio; Southern Pacific, Northern Pacific, Kansas City Southern, and Fruit Growers Express. Preorders are due February 28, 2021 for delivery in



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4th quarter 2021. For more information visit intermountain-railway.com.

Walthers plans to release a new production run of GP9 road switchers next month. The Walthers Mainline series model is based on GP9 Phase II locomotives built by EMD in the late 1950s. The economy priced HO scale model uses the same



drive system as Walthers upscale Proto series. Road names include SP and SPSF pre-merger Kodachrome schemes, BNSF, and NdeM National Railways of Mexico.



Additional road names in this production run include New York Central, Grand Trunk Western, Union Pacific, Kansas City

Southern, and Soo Line. Drill starter points are molded into the body to assist hobbyists wishing to add grab irons from Walthers GP9 diesel detail kit (sold separately). The models will be available with ESU Sound for DCC and DC layouts. Standard DC versions will have a 21-pin plug to simplify installation of an aftermarket decoder.



A new HO scale International wide-vision steel caboose is available now from Walthers. The

Mainline model features a Stanray diagonal panel roof and Barber Swingmaster roller-bearing trucks with 33" machined metal wheelsets.



Road names are Great Northern, Maine Central, Northern Pacific, Boston & Maine, Norfolk & Western, and Norfolk Southern.

Walthers offers a caboose detail kit which is sold separately. To assist in installation of the detail kit, drill starter points for grab irons are molded into the caboose body.



Walthers is offering a 34' 100-ton twin-bay hopper in seven road names including Southern Pacific. The HO scale model represents prototypes built in the 1970s.



Additional road names include Golden West, Norfolk Southern, Western Pacific with a Union Pacific herald, Wisconsin Central, and two schemes for Southern Railway. The HO scale ready-to-run model comes with appropriate trucks with 36" machined metal wheelsets



Walthers has set an April release date for a group of HO scale metal buildings, including a pole barn. In addition to the big double-door barn, the kit includes a

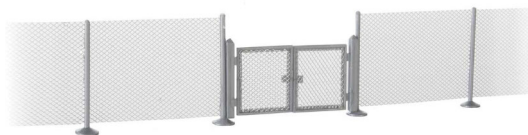


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large shed, a single-car garage, and a small shed. Details in the various buildings include separate doors and windows, nonworking lights, electric meter, a propane tank, and dry hydrants.



Walthers has released an HO scale chain link fence. The SceneMaster kit includes 24 fence posts,

six pieces of wire mesh that measure 1" x 2.375", and two gates and gate posts. For additional information contact a dealer or visit www.walthers.com.

N SCALE PRODUCT NEWS

Athearn plans to release an N scale model of an EMD FP45 in December 2021. The cowl-style version of an SDP45 (see the sidebar in HO report) will be available for Santa Fe, Milwaukee Road, Western Pacific, BNSF, and SF-SP Kodachrome scheme.



The ready-to-run N scale model features a painted cab

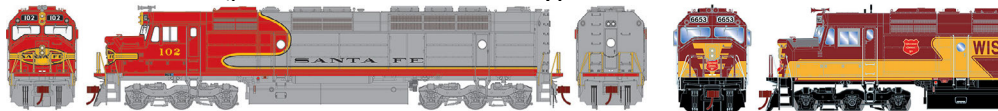
interior with control stand, see-through windows and flush mounted portal windows; non-skid end walkways, LED headlight, and Flexicoil-C truck sideframes with high brake cylinders.



Additional N scale motive power coming from Athearn

next December is an EMD F45 decorated for Burlington Northern and Wisconsin Central. The BN locomotive is based

on a group of 12 units ordered by GN prior to the BN merger but delivered by EMD in BN Cascade green.



Wisconsin Central purchased three F45s from Santa Fe in 1995. Both Burlington Northern and Wisconsin Central versions of the F45 are included in the December 2021 release. Athearn's N scale FP45 and F45 models will be available for DC and DCC with a SoundTraxx Tsunami2 sound decoder.

A Ford C canopy cab pumper fire truck with rubber tires and molded cab interior is coming from Athearn in December.

Community identification for the 1:160 scale vehicles will be

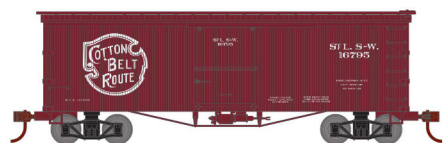


Napa, Highspire, Perryville, City of Los Angeles, Washington DC, and Chicago.



New N scale 40' high-cube containers are also due next

December. They will come in 3-packs decorated for Ocean Network Express, Cosco Shipping, MSC/Florens, Touax/MOL, MSC, NYK, and Maersk.



For the January 2022 production run, Athearn has announced an N scale 36' Old Time Boxcar. The models are equipped with molded truss rods with turnbuckles and a separately applied brake wheel. Roadnames in this release include Cotton Belt, Santa Fe, New York Ontario & Western, Chesapeake & Ohio, Nickel Plate Road, and Missouri-Kansas-Texas.



Also in the January 2022 production run are Bay Window Cabooses in nine



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roadnames and ten paint schemes. Roadnames available in this run are Pennsylvania, New York Central, Erie, Illinois Terminal, Nickel Plate Road, Milwaukee Road, Frisco, and two RJ Corman schemes. The models are equipped with details like an antenna, marker lights, smoke jack, and vent, as well as an axle-mounted generator where appropriate.



The final release in the January 2022 production run is an N scale PS-2 2600 cu ft covered hopper. Featuring etched metal roofwalks

and factory installed wire roofwalk grab irons, the model includes a flush or overhanging roof and round or trough hatches per the prototype. Roadnames in this release are Grand Trunk Western, Louisville & Nashville, Missouri-Kansas-Texas, Norfolk & Western, Northern Pacific, and Union Pacific.

Preorders for Athearn products on the January 2022 production schedule are due February 26, 2021. For additional information on Athearn and Roundhouse products contact a dealer or visit www.athearn.com.



Atlas and its dealers are booking advance reservations for a new production run of an N scale Alco RS-2 locomotive. Road names scheduled for the 4th quarter 2021 release include Chicago & North Western, Maine Central, Lehigh Valley, Canadian Pacific, Sothorn Railway, and Union Pacific.



Features of the DC locomotive include dual flywheels and directional LED lighting.



Atlas' 4th quarter 2021 production schedule includes an N scale 42' coil steel car with a removable hood and inside floor detail. The Master series model is based on a prototype with pronounced fishbelly side sills.



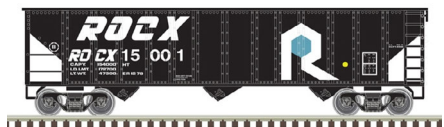
Road names will be DLRX GE Railcar, CSX, Indiana Harbor Belt, Norfolk Southern, and Inland Steel.



R. Bale

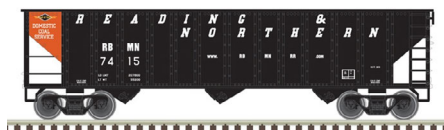
ALCO RS-2 LOCOMOTIVE

In 1946, while still producing its successful RS-1 switch engine, Alco introduced the RS-2 road switcher. The RS-2 featured a new diesel prime mover that increased the horsepower from 1,000 to 1,500, all housed in a stylized rounded body. Even the radiator fan was given a round housing. All considered cutting-edge styling for that immediate postwar period. Alco and Canadian counterpart, Montreal Locomotive Works, successfully built over 370 of these versatile locomotives for railroads large and small.



A Trainman series 90-ton triple-bay coal hopper completes the list of new N scale models coming from

Atlas during the 4th quarter of 2021. Road names on the affordable model will be Burlington Northern, Canadian National, Conrail, Pittsburgh & Shawmut, Rock Island, Union Pacific, Norfolk Southern, Chessie System C&O, Reading Blue Mountain & Northern, and Denver & Rio Grande Western.



For additional information contact a dealer or visit www.atlasrr.com.



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New N scale motive power from **Bachmann** includes an EMD GP40. Road names for GP40s with a dynamic brake blister in this release are Union Pacific, BNSF, CP Rail, Norfolk Southern, and CSX.



Bachmann N scale GP40 diesel locomotives without dynamic brakes are available decorated for Boston & Maine, Santa Fe, and Union Pacific.



R. Bale

GP38 AND GP40 ROAD SWITCHERS

EMD introduced a line of locomotives in 1966 powered by its new 16-cylinder 645-series prime mover. The four-axle locomotive with a rating of 3,000 hp was christened GP40. Between 1966 and 1971 EMD produced more than 1,100 GP40s. Concurrent with the introduction of the GP40, a non-turbocharged version built on the same chassis and using the same body was introduced as the 2,000 hp GP38. It also carried a considerably lower price. More than 700 GP38s were delivered during the seven years it was catalogued by EMD.

All versions are available for standard DC operation or DCC sound equipped with an Econami Sound Value package.



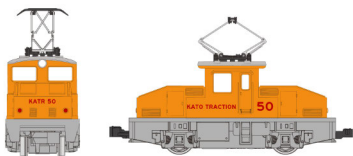
Bachmann has released an N scale version of a New York Central 4-6-4 Hudson

steam locomotive. Two road numbers each will be available in Gothic and Roman style lettering. The N scale DCC locomotive comes with a factory installed Econami sound value package dual-mode NMRA-compliant decoder. For additional information contact a dealer or visit www.bachmanntrains.com.



Eastern Seaboard Models has shared this photo of a pilot model of a Pennsylvania Railroad class G32b gondola

currently under development. The N scale model is based on a prototype car PRR rebuilt in the mid-1960s. Many the rugged cars continued in service into the Conrail era. Availability of the ESM model is planned for late March. For additional information visit www.esmc.com.



KatoUSA plans to introduce a line of small, affordable, N scale mini-trains later this year. Identified as Kato's Pocket Line, the initial product will be a four-wheel

electric locomotive of Japanese origin decorated in a North American style of bright orange. The model will have Kato



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knuckle couplers and an adjustable metal pantograph. The DC-only model will be powered by Kato's coreless motor.



Kato has released N scale versions of EMD SD70M diesel locomotives in four road names. The models feature flat, non-flared, radiators.



Two road numbers each are available for Norfolk Southern, Union Pacific, CSX, and Southern Pacific.



The N scale models come with a five-pole KATO motor with dual brass flywheels, directional headlights and illuminated number boards.



Kato has added individual Canadian National F7A and F7B locomotives to its previously announced run of the EMD F7 diesel units. Individual CN F7A diesels are available as well as

F7A-F7B two-unit sets. F7s decorated for Great Northern, Northern Pacific, Santa Fe (both Warbonnet and Yellow Bonnet schemes), continue to be available.



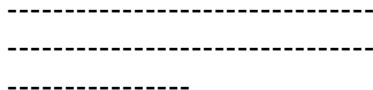
Kato has added Union Pacific and BNSF Swoosh models to the next production run of its N scale GE ES44 GEVO locomotives. The N scale models are based on a prototype with a 12-cylinder

prime mover with a redesigned dual-fan heat exchanger, which gives the locomotive its distinct flared radiator.



Features of the N scale model include directional headlights, illuminated number boards, and working ditch lights. Two road numbers will be available for each road name.

All of Kato's N scale SD70M, F7, and ES44 locomotives mentioned in this report will be available for DC and DCC operation. Standard DC models will accommodate a drop-in Digitrax DN163K1C or Train Control Systems K1D4-NC aftermarket decoders. DCC versions will be available with factory installed Digitrax DCC. Factory installed ESU LokSound DCC will be available on special order through participating dealers. For additional information contact a dealer or visit www.katousa.com.



New N scale models available now from **Micro-Trains** include a 78' heavyweight coach with paired windows. The ready-to-run model is available decorated for Chesapeake & Ohio with six-wheel trucks. A Denver & Rio Grande Western version of the coach is also available. It is painted Pullman green and rides on four-wheel trucks.



This Soo Line model represents a 50' RBL boxcar with an 8' plug door. The N



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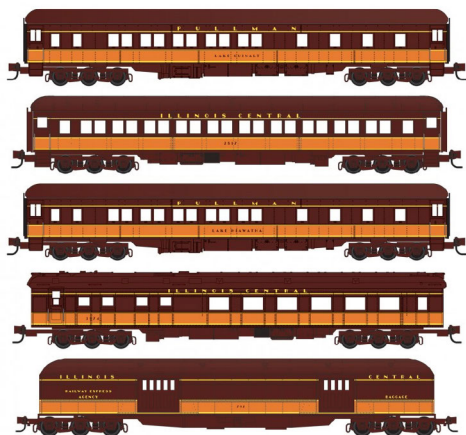
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scale model is updated with no running boards, short ladders and roller-bearing trucks.



Railway. The N scale model comes with a simulated coal load.

Micro-Trains version of a twin-bay coal hopper, with offset sides and Bettendorf-type solid-bearing trucks, is based on a 33' ACF prototype built in 1948 for Southern



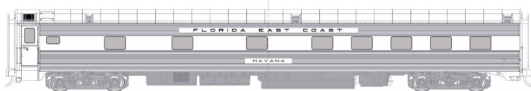
Micro-Trains dealers are booking reservations for a five-car set of Illinois Central heavyweight passenger cars. The set includes a baggage car, coach, two 10-1-2 sleepers, and a diner. Availability is planned for June 2021. Contact a dealer for additional information on all Micro-Trains models.



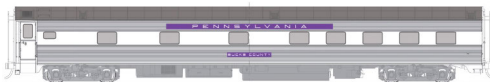
RailSmith has launched an N scale project to produce a 1947 version of Northern Pacific's elegant North Coast Limited. The long-range project begins with Pullman-Standard lightweight coaches and EMD F units decorated in NP's Streamliner colors. The handsome green design was also known as the Pine Tree paint scheme.



Broadway Limited, will consist of F5A, F5A-F3B, and F5A-F3B-F5A sets.



RailSmith's Florida Special, both cars wore an all-silver scheme.

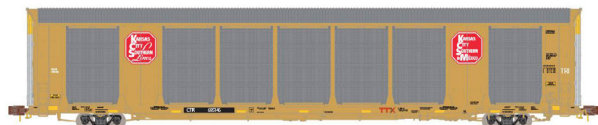


According to the Pennsylvania Technical & Historical Society the cars were delivered with Royal Purple lettering boards and were used on the ACL Florida Special and Champions trains. For additional information visit lowellsmith.net.

Motive power options, produced under commission by

RailSmith has also announced that the Florida East Coast sleeper cars Havana and Oriente are open for orders. Part of

Also announced open for orders as part of the Florida Special are the Pennsylvania sleeper cars Bucks County and Chester County.



ScaleTrains.com announced during

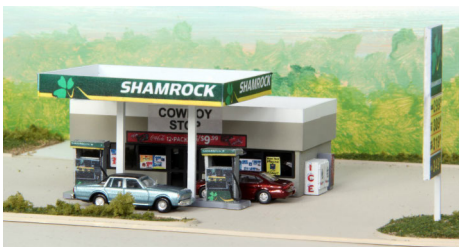


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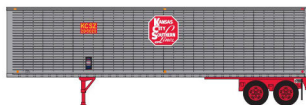
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the Amherst Virtual Railway Hobby Show that they would be producing an N scale Rivet Counter model of the Greenbrier/Gunderson Multi-Max Autorack. One of the most modern autoracks in prototype service, the Multi-Max began service in 2014 with several thousand produced. Since this is a Rivet Counter product models will feature roadname and number specific details, with ScaleTrains.com producing four body variations, three ladder styles, two types of end doors, three end sill configurations, two different upper and lower side panels mountings, and many other detail variations. Roadnames in the first run are KCS/yellow/CTTX, KCS/white/CTTX, Kansas City Southern/yellow/TTGX, Union Pacific/Building America/TTGX, Norfolk Southern/Horsehead/TTGX, Canadian Pacific/Soo, Canadian Pacific/Beaver logo/TTGX, CSX/Boxcar logo/TTGX, CSX/Boxcar logo/CTTX, Canadian National/red logo/TTGX, Canadian National/white logo/CTTX, BNSF/orange/TTGX, BNSF/orange/CTTX, and BNSF/white. More info at ScaleTrains.com.



Summit USA has released an N scale kit for a Rural Shamrock Gas Station & Convenience Store. Representing a modern gas station with convenience store, the kit includes all

building parts, vending machines, pumps and signs. Milled in white styrene plastic with clear acrylic window glazing, the kit comes with both self-adhesive and water slide decals. The finished size of the model is 3.625" x 3" x 1.5". For more information visit summit-customcuts.com.



Trainworx has announced preorders for

40' corrugated refrigerated and dry trailers in N scale. Names to be produced are Northern Pacific, Kansas City Southern, Fruit Growers Express, Ferrocarril del Pacifico, Sonora-Baja California, and unlettered. Preorders are due February 28, 2021 for delivery in 4th quarter 2021. For more information visit intermountain-railway.com.

NEW DECALS, SIGNS AND FINISHING PRODUCTS



Bill Mosteller of **Great Decals** has released several new water slide decals including S and HO scale sets for the New York Central Rail Diesel Cars. The distinctive red, black, and white safety end striping was added to the NYC Budd cars after 1960. Penn Central applied these same stripes to post-merger New Haven Budd cars.

A new HO scale lettering set is available for Washington and Old Dominion diesels. The dulux gold set is suitable for lettering Whitcomb 65- and 75-ton, and GE 44- and 70-ton diesels. Road names, revised heralds, and a full set of road numbers are included.

Decals with white lettering for The Virginian Railway's composite hoppers are again available in HO scale from Great Decals. The reissued set includes the herald, road name, road numbers sized for both the sides and ends, and dimensional and end data for the Virginian class H-8A hoppers.

Also new are N scale decals for lettering Ludington & Northern No. 16 and Michigan Southern/Kendallville Terminal No.16 SW8 diesel locomotives.

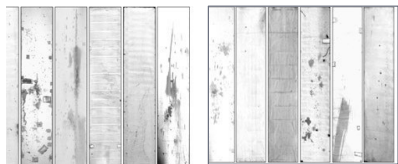


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Great Decals has reissued its H0 scale gold decal sheet for Virginian passenger cars. The sheet provides material to decorate up to six cars including road numbers, car names, special car designations, and stripes. Material for predecessor roads Tidewater, Deepwater, White Oak, and Piney River & Paint Creek is included. For additional information visit www.greatdecals.com.



ZYX Creative is selling water slide decals for trailer and container roofs that are based on actual photographs of weathered roofs. Hobbyists can apply

patches, stains, spots, grime, sealer, skin lines, scratches and other marks individually or as a full group. The decals work on all surfaces but the appearance is especially effective on silver or white roofs. Five different sets are available with eight unique roofs in each set.

For additional information visit www.zyxcreative.com/product-category/decals/trailer-roofs.

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BRIEFLY NOTED AT PRESS TIME ...

JL Innovative Design has purchased Durango Press, and Railway Express Miniatures. Relocating manufacturing equipment and consolidating operations in Carrolton, NY, is almost completed. Products are expected to be released under their original brand names soon. For additional information visit www.jlinnovative.com.

The **National Model Railroad Association** has announced corrected dates for the 2022 national convention. The confirmed dates are August 7 through 14, 2022, at St. Louis.

National Scale Car has released a mini kit to convert an HO scale Tichy war emergency gondola into a Grand Trunk Western version as built by Pressed Steel Car with three-rib fixed ends. Details are available at nationalscalecar.com.

Showcase Miniatures has released several structural details suitable for DPM and similar HO scale buildings. The items include a dormer extension, exterior stairs, a roof top stair access, and two sizes of roof water tanks. More information is available at www.showcaseminiatures.net.

Tangent Scale Models has released its highly-rated HO scale PS-2CD covered hopper modified to replicate Pullman-Standard production during 1973-1975. Modifications from earlier versions include open-hole side posts and changes to the brake system. Road names on the updated cars are Santa Fe, MNS, Ralston-Jefferson, Cooper Grain, PTLX-Far-Mar, KCS, and Michigan Elevator ... ■



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Model Railroad Hobbyist | February 2021

FEBRUARY

Due to COVID-19 restrictions, please check with any organization hosting an in-person event for the latest status of the event.

Ongoing

ONLINE, Zoom, dates vary, see website. Operation Special Interest Group Meetups – limited attendance available. For more information visit www.opsig.org/Virtual. Past meets are available online at www.opsig.org/Virtual/Past.

ONLINE, Zoom & YouTube, Wednesday & Saturday, see Facebook page. “New Tracks” Meetup, hosted by Jim Kellow, MMR. See www.facebook.com/newtracksmodeling 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/nmraxgroup 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.



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February-March 2021

ONLINE, Facebook & YouTube, February 27, NMRAX, organized by Gordy Robinson, Martyn Jenkins, Gert Muller, and Jordan Kramer. See www.facebook.com/groups/nmraxgroup for more information.

ONLINE, Facebook & YouTube, March 27, NMRAX, organized by Gordy Robinson, Martyn Jenkins, Gert Muller, and Jordan Kramer. See www.facebook.com/groups/nmraxgroup for more information.

ARIZONA, PHOENIX, February 20th, Winter Cactus Swap Meet, sponsored by the Grand Canyon Model Railroaders. North Phoenix Baptist Church, 5757 N. Central Ave. For more information visit www.arizonamodeltrains.com/cactus.shtml.

ARIZONA, PHOENIX, March 20, Adobe Mountain Desert Railroad Swap Meet, sponsored by Sahuaro Central. Adobe Mountain Desert Railroad Park, 22822 N 43rd Ave. For more information visit www.arizonamodeltrains.com/am.shtml.

FLORIDA, MELBOURNE, March 6, Original Melbourne Train and Toy Show, sponsored by Schultz Space Coast Trains, Azan Shrine Center, 1591 W Eau Gallie Blvd. For more information visit schultzspacecoasttrains.com.

FLORIDA, SARASOTA/BRADENTON, February 27-28, 43rd Annual Train Show, Bradenton Area Convention Center, 1 Haben Blvd, Palmetto, FL. Contact David Fontaine for more information at 941-685-2221 or david.f.34205@yahoo.com.

Future 2021-2022 by location

NEW ZEALAND, DUNEDIN, May 8-9, Dunedin Model Train Show. Taieri Bowling Club, 12 Wickliffe Street, Mosgiel. For more information email dunedinmodeltrainshow@gmail.com.

CALIFORNIA, IRVINE, September 8-11, Pacific Southwest Region/NMRA Convention.

CALIFORNIA, SANTA CLARA, Cancelled — July 4-11, 2021, Rails By the Bay, 2021 NMRA National Convention and National Train Show. Santa Clara Marriott Hotel. Efforts are underway to present the convention as a virtual convention online in. For more information visit www.nmra2021.com.

COLORADO, COLORADO SPRINGS, May 22, TECO Model Train Outdoor Swap Meet. Chapel Hills Mall, 1710 Briargate Blvd. For more information visit www.tecoshow.org.

FLORIDA, MELBOURNE, June 5, September 4, December 4, Original Melbourne Train and Toy Show, sponsored by Schultz Space Coast Trains, Azan Shrine Center, 1591 W Eau Gallie Blvd. For more information visit schultzspacecoastrains.com.

FLORIDA, TALLAHASSEE, June 26-27, 30th Annual Tallahassee Model Railroad Show and Sale, sponsored by Big Bend Model Railroad Association, 441 Paul Russell Rd. For more information visit www.facebook.com/events/745873359647741.

GEORGIA, CARTERSVILLE, October 2-3, 2021 Piedmont Division Model Train Show, Clarence Brown Conference Center, 5450 GA-20. For more information visit themodeltrainshow.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, IMPERIAL, May 15 10am - 3pm, After The Storm Train Show, Meramec Elks Hall, 1515 Miller Road, For more information contact Steve Mantia at 314-369-3949.

MISSOURI, St. LOUIS, August 7-14, 2022, NMRA National Convention and National Train Show.

NORTH CAROLINA, HICKORY, September 1-4, 41st National Narrow Gauge Convention, Hickory Metro Convention Center and Crowne Plaza Hotel. For more information visit 41nngc.com.



PENNSYLVANIA, KUTZTOWN, May 15, July 17, August 28, all 2021. Renningers Model Train Meet, 740 Noble Street. For more information see renningers.net/events/model-train-meet. ■



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