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JOE FUGATE



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JIM SIX



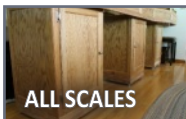
Getting Real: Detailing Kansas City Union Station

NICK MUFF



Experience with 3D filament printing

KEN WOLF



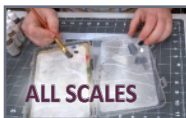
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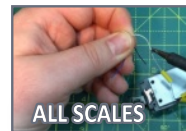
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MRH Website this month: Redoing an RS3 paint job, ...

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PUBLISHER'S WELCOME

introduction



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JOE FUGATE: GREAT UNCOUPLING
TOOL IDEA FROM JEFF JOHNSTON ...

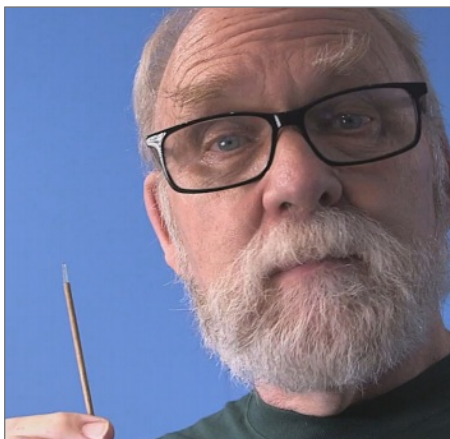
**MRH FORUM MEMBER JEFF
JOHNSTON RECENTLY POSTED A
BRILLIANT NEW** kind of coupler uncoupling pick [1, 2].

Jeff has adapted a dental toothpick brush and made it into an uncoupling tool. It works much better than the standard bamboo skewer.

In making one and testing it, I have to say it's extremely easy to use and gives 100% rapid uncoupling with just a slight twist. Far easier than a skewer.

I went looking for a simple and inexpensive way to make more of these uncoupling tools. After a bit of experimentation, I came up with a method that's only 30 cents each and very easy to do.

1, 2. On the MRH Forum, Jeff Johnston showed how to make this very effective uncoupling tool from a dental brush toothpick.



PUBLISHER'S WELCOME | 2



3, 4. I got a cheap stick ballpoint pen, removed the guts, and then put the dental brush toothpick into it. If the handle on the dental brush is too small, just wrap it with some masking tape as I did here until it's a snug fit. Voila – instant uncoupling tool for about 30 cents.

5. “El cheapo” ball point stick pens work best. Just make sure the guts can be easily removed, then you can trim the end to fit the dental brush toothpick.

I start with a super cheap plastic stick ball point pen [5]. The cheaper the better, the guts need to be easily removable (see this article's shopping list links for examples).

Then I ordered some dental brush toothpicks with a small plastic handle that fits up inside the ball point pen barrel [3,4]. In my case the handle was a bit too small, so I just wrapped it with layers of masking tape until it fit snugly into the pen tube.

If it won't fit into the barrel, it's also easy enough to trim the tapered pen shaft end off until the handle will fit up inside.

To read Jeff's original thread, see:

forum.mrhmag.com/post/maybe-the-best-kadee-uncoupling-tool-for-me-anyway-12298153

So make yourself a bunch of these great uncouplers for dirt cheap! ☑



To get a shopping list for this article, visit the MRH website at this link: mrhmag.com/magazine/running-extra/2022-04/publishers-welcome-shopping



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Limited Modeler

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GIVE IT A **LIKE**



JIM SIX SHOWS HIS UPGRADES TO A **TRIX USRA MIKADO ...**

NOW THAT YOU KNOW I AM BUILDING A NEW, SMALLER LAYOUT based on the Lake Shore & Michigan Southern at Monroeville Ohio, what do I do with my Pennsy equipment? I have four PRR steam locomotives, four PRR cabin cars (caboose), and dozens of PRR freight cars.



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THE LIMITED MODELER

column

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

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The easiest thing for me would be to sell or give away my Pennsy locomotives, cabooses, and most of the freight cars, retaining only a remnant to fit in with my freight car roster for the new LS&MS layout. The problem with that is I really love the Pennsy as much as I do the NYC Lines.



1. PRR 9943 shows the pre-WWII configuration. The Crawford Hood Tender is a nice touch that Broadway Limited captured perfectly with their model of the Pennsy H10.



DOING MORE WITH LESS



THE LIMITED MODELER | 2

Parting with this equipment would be a blow.

In an earlier "Limited Modeler" column, that I discussed the possibility of a second, Pennsy layout immediately below my LS&MS layout. If I do not build the second, lower layout, then I could still operate my Pennsy equipment on my LS&MS layout. I could pretend it represents Gibsonburg or some other small northwest Ohio town the Pennsy served.

I could swap out some building signs or even a few buildings to match Gibsonburg businesses. That could work for me, but I will always have in my mind that the layout was built to model Monroeville on the NYC Lines. Still, recognizing the limitations of age, swapping out a few signs and buildings to change from Monroeville to Gibsonburg or back appeals to me.

My PRR models are some of the most recent, and are among the nicest models I have. Parting with them would be difficult. I have four PRR steam locomotives – two BLI class H10 2-8-0s



2. PRR 8304 Is a Broadway Limited Imports model with some light weathering. I do not want it too dirty or rusted because it will represent the late-1910s and 1920 on my layout. This is a perfect locomotive for a small layout. The hopper displays the PRR scheme that was used from May 1926 until January 1930.



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[2], one BLI class L1 2-8-2, and one BLI class L2 2-8-2. These four great models would give me enough variety that I wouldn't need to use the same locomotive repeatedly.

RE-DETAILING A TRIX NEW YORK CENTRAL LINES USRA MIKADO

The New York Central Lines had a lot of USRA Mikados (if I remember, 190 of them), and with one exception, they were standard USRA configuration. During the early 1920s, NYC Lines modified H6 5153 to have an Elesco feedwater heater and a Commonwealth trailing truck fitted with a booster engine [4].

5153 was the only H6 NYC Lines modified in this way because the H10a and H10b class Mikados arrived about that time. The H10 locos were a lot beefier than the H6, and served well in regular freight service.



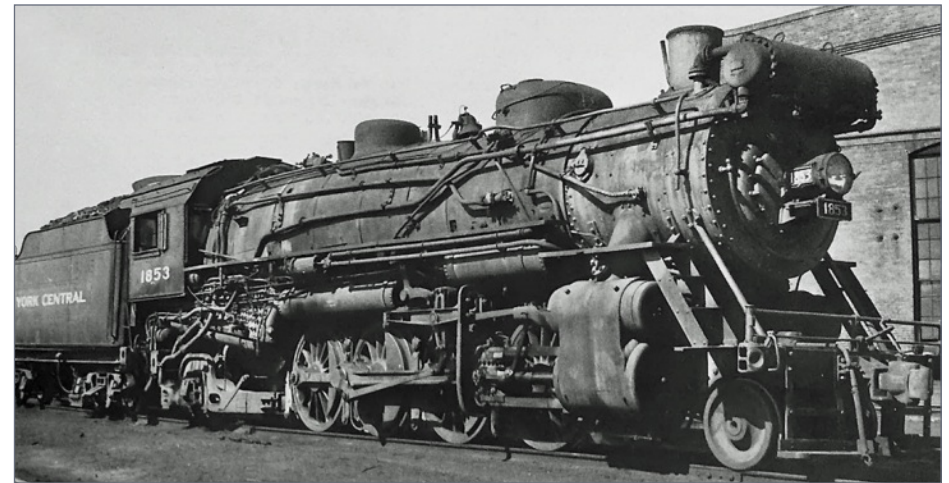
3. NYC 1890 is a factory-painted Trix Mikado with post-1936 lettering. I will have to re-letter it to the earlier Roman script for my pre-1930 setting. This scene from my old layout could easily represent Monroeville, Ohio in the 1920s.

The H6 locomotives primarily worked local freight trains until retirement in the early-to-mid-1950s.

Trix/Märklin made a fine model of the USRA lettered for the NYC System [3], and I bought two of them. I decided to modify one to represent the 5153 as it appeared after the 1936 reorganization of the NYC Lines into the NYC System, when it was renumbered to 1853 [4].

Unfortunately, I did not have a photo of the other side of the locomotive. Ray Breyer sent me a few photos of similar locomotives showing what the fireman's side of the locomotive "probably looked like." I used those photos as reference.

At the time I prepared this model, I was modeling the year 1943, and it still has the factory-applied post-1936 NYC System lettering style.



4. NYC H6 1853 was built as the 5153. It was the only NYC Lines H6 class locomotive to receive a Commonwealth trailing truck with a booster engine and Elesco feedwater heater. This 1949 Toledo, Ohio photo shows that the heater remains but the booster engine is gone.



THE LIMITED MODELER | 5

Since I am now modeling from 1900 to 1932, I will need to re-letter the model with the older Roman-style lettering the NYC Lines used in those years [5].

I have long been a proponent of the Trix/Märklin USRA Mikado. Märklin has long been a high-quality manufacturer of European model steam locomotives, and they produced the Trix line of North American-prototype steam locomotives a couple of decades back [6].

Märklin/Trix locomotives run extremely well. I dare say they run equal to or better than any other HO locomotives steam or diesel. They are that good.

Solid performers that they are, my two Trix NYC Mikes are the heart of my 1920s NYC Lines locomotive roster. I will re-letter both for my earlier modeling era and touch up the weathering.

I do not want them weathered to appear near end-of-life as most modelers do with their steam power. Both will appear as I think they did during in the prime of their locomotive lives back in the 1920s.



5. Here is the model as it appears today. I will need to re-letter the model with its 1920s number and Roman lettering. The lettering as shown here is post 1936 NYC System lettering.

THE LIMITED MODELER | 6



6. This is the Trix/Märklin model right out of the box. It is a well-detailed model that looks as good as it runs. The tender has a coal bunker extension that the NYC System added in the 1940s. I removed it from both of my models to allow me to accurately operate them in the 1920s. Compare this photo to [5].



7. First I replaced the trailing truck with a Commonwealth type. Cal-Scale offers a brass casting, but Frank Hodina made an accurately detailed resin casting for me. I tested it and found its looks, fit, and function perfect. I relocated the bell to its new position atop the boiler from its original location in front of the smokebox.

MODIFYING 1883

I will let the photos and captions explain the process of preparing New York Central 1883 for service on the layout. I believe that I have given this good coverage. Should you have any questions or comments please post them to the *MRH* Forum and I will do my best to reply to them.



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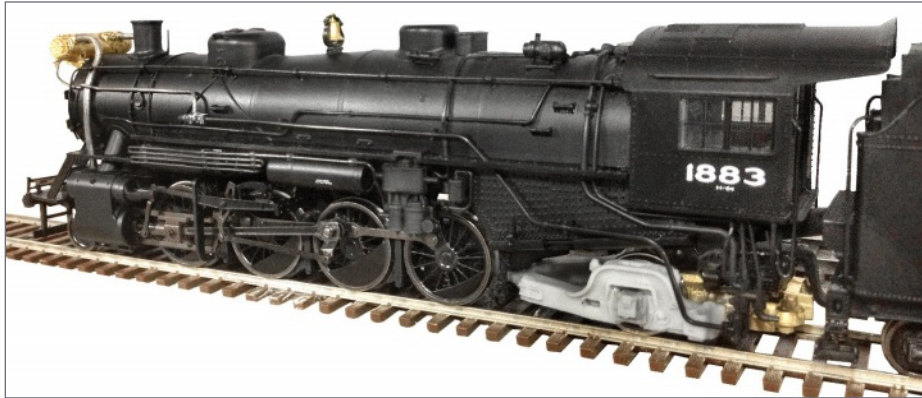
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8. The booster engine is a Cal-Scale brass casting. I used Gorilla Glue to secure it to the trailing truck. I also added the Elesco feedwater heater and plumbing. Gorilla Glue is my preferred adhesive, and I find it more reliable than super glue.



9. I added more plumbing to the smokebox area and additional appliances to the side of the firebox. I determined this additional detail from Ray Breyer's prototype photography, which was crucial to the process.

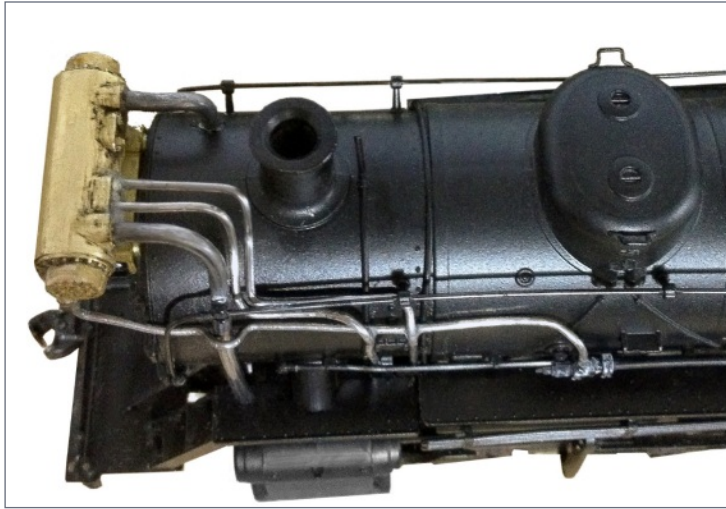


10. A closeup view of the engineer's side with Frank Hodina's Commonwealth trailing truck and the Cal-Scale (Bowser) cast brass booster engine. The piping in this photo is all part of the Trix model. One of the appealing aspects of steam locomotives is the complex of appliances and piping that was seemingly all over the locomotive.

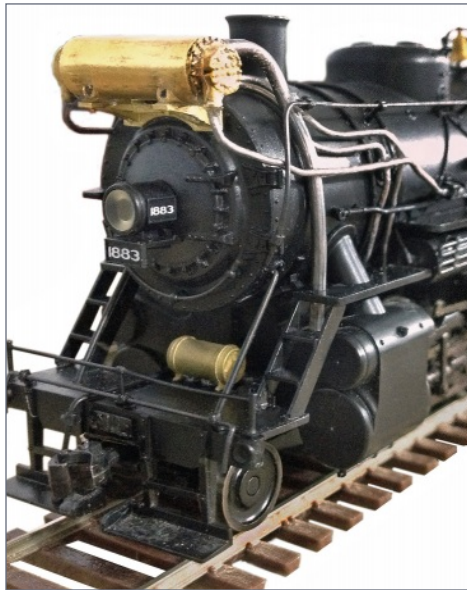


11. Next, I turned my attention to the Elesco feedwater heater on top of the smoke box. The Cal-Scale brass casting of the heater has a two-tabbed mount beneath it. I had to drill two holes into the front of the smokebox, one for each of the mounting tabs.

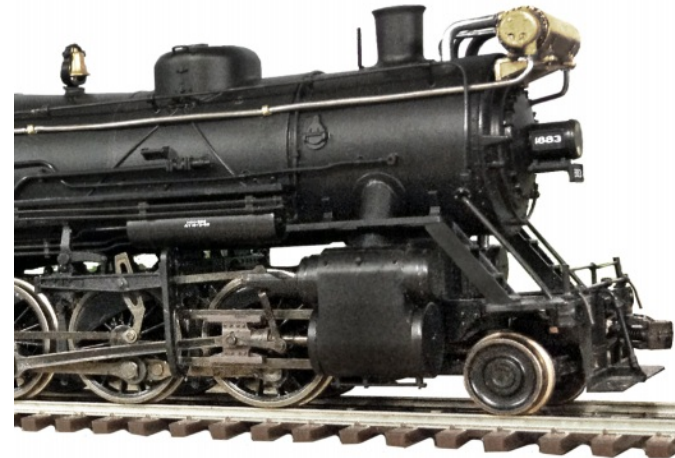




12. A top-down view of the plumbing running to and from the Elesco feedwater heater. Solder worked well for this application as it forms easily and holds its shape if you keep your hands off afterward! Since this model, I have started using copper electrical wire for plumbing, which forms almost as easily, but puts up with handling better.



13. The front of this Mike looks busy with all its plumbing and detail parts. The busy appearance of steam locomotives and the motion of the drive and connecting rods are big reasons I love steam locomotives more than what are relatively lifeless diesels. I fitted a Kadee scale coupler to the front pilot so the locomotive can work the local freight and do back-and-forth switching.



14. The engineer's side plumbing to the feedwater heater is simpler than that on the fireman's side. The two pipe clamps are brass rod I hammered flat, wrapped around the solder pipe, and glued into holes drilled into the cast metal boiler.



15. This view shows the model almost ready for paint touch-up, then weathering. It is a good-looking model that looks somewhat different from the standard USRA Mikado. The Elesco feedwater gives it a more business-like appearance. The Commonwealth trailing truck looks beefier than the standard USRA trailing truck.





16. This is the Trix tender. It models the USRA Mikado tender as it appeared on the New York Central from the mid-1940s until end-of-life in the mid-1950s. The coal bunker extension snaps out, leaving the tender as it appeared before the mid-1940s. Modelers of other railroads will need to remove the coal bunker extension, as it is a NYC-specific detail.



17. Once the coal bunker extension is removed, the top is wide open, exposing the inside of the tender. I cut sheet styrene to fill it in as shown here.



18. I added real coal to the tender's bunker. Cannot beat the appearance of real coal! I tried not to heap the coal too high, which would appear as though the tender had just been fueled. I would have put even less coal but could not lower the sheet styrene any more than this due to the electronics in the tender.



19. Per New York Central practice, I added two re-rail frogs to the fireman's side of the tender along the side sill. These are cast resin parts, though Details West offers these frogs. I also added a rear headlight of cast resin. I acquired it from Ray Beyer and don't know the original source.





20. Here is the engineer side of the tender. I hung a couple more re-rail frogs and a poling pole used for switching parallel tracks. Touch-up black paint awaits the model at this point, then the obligatory weathering.



21. This is the fireman's side of the model locomotive after paint retouch and weathering. Since this photo was taken, I have backdated from the 1940s to the 1920s, so I will need to re-letter it with NYC Lines Roman lettering. I will do the same with my other Trix Mikado.



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22. This view is meaningful to me. The USRA Mike featured this month rolls off into the morning sun on one of the last runs on this layout. I saved all the freight cars and the locomotive for use on my next layout. ☒



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GETTING REAL Part 2



column

MRH Running Extra | April 2022

NICK MUFF SHOWS THE MOLDING AND DETAILING IN HIS MODEL OF KANSAS CITY'S UNION STATION ...



WELCOME BACK TO THE SAGA OF THE UNION STATION. Let's begin with more castings.

As I discussed in the previous article, the concrete tiles of the Union Station's roof were aesthetically pleasing, but functionally they were a ticking time bomb. As the tiles deteriorated in the severe Midwest winters, they began to leak, and simply replacing them was not possible. By the time the station was restored, the roof had to be completely replaced with new lightweight cast concrete tiles.

I used styrene sheet and strip to create the master for these roof pieces [1]. Then I cast them in two-part resin.

The next challenge was the two towers flanking the arched windows on each side of the building. I could have cast them flat and mitered and glued the corners, but I had done enough woodworking to know that making exactly matching mitered corners is a real challenge. And they are so visible right on the front of the building!

I came up with a different solution which worked perfectly. I created the styrene master for the towers in a U-shape, including the front and both sides. I could create perfect corners with a sharp hobby knife, styrene sheet and strip, and an emery board.

GETTING REAL | 2

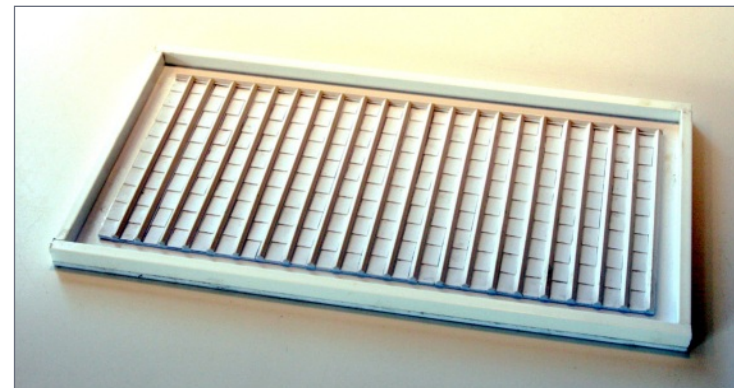
I learned from Joel Bragdon that casting resin would not attack high density blue or pink foam, so I cut a foam block to fit down inside the U-shaped master to create a solid block mold. When it was time to cast the reproduction pieces, I placed the same foam block down in the center of the mold to fill that area and create a U-shaped casting with open windows.

There was a learning curve involved. The first time I mixed and poured what I thought would be enough resin into the mold to fill it with the foam block was placed, plus a little left over.

When I inserted the foam block into the mold, the resin overflowed and made a mess. I also found it difficult to keep the foam block in place – it really wanted to float! The first tower casting was a success, but a mess to clean up.

The next time I made an initial pour with the resin filling the mold about 1/4 full, then inserted the foam block. There was no resin overflow, and the foam block was much less prone to floating. A weight on top held it in position.

When the first resin pour set, it held the foam block in place. The remainder of the mold could be filled with resin in a controlled manner, and a sheet of glass set on top to give a perfectly flat back [2].



1. Master for the Union Station cast roof tiles.



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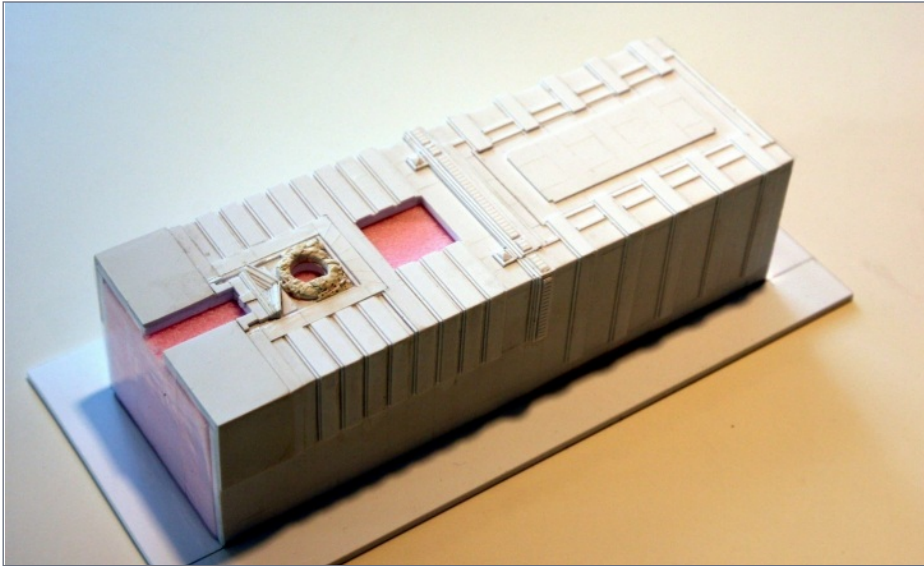
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2. The master for the towers flanking the front arches was cast U-shaped.



3. Furniture clamps hold the pieces together as the head house is assembled. Styrene masters for the entablature and pediment can be seen under construction in white.



4. Test-fitting the assembled head house on the model railroad.

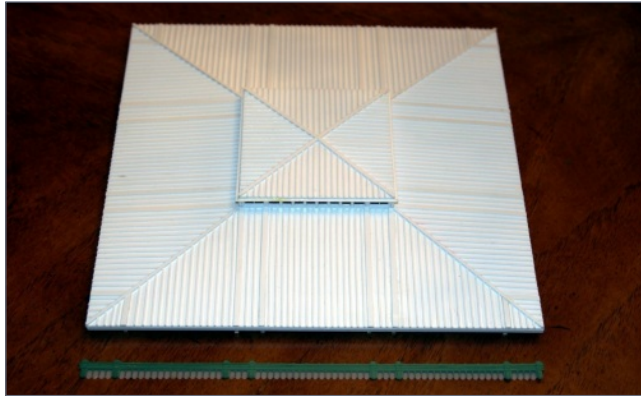
With the walls for the head house complete and the corner towers finished, I could begin assembly of the head house. I needed full-size furniture clamps to hold the pieces together for gluing, which is not usually necessary in construction of H0 scale buildings [3]!

To the west of the head house is a canopy covering the carriage concourse or driveway entrance. Since there is only one of these, I constructed it from sheet styrene and strip [5, 6].

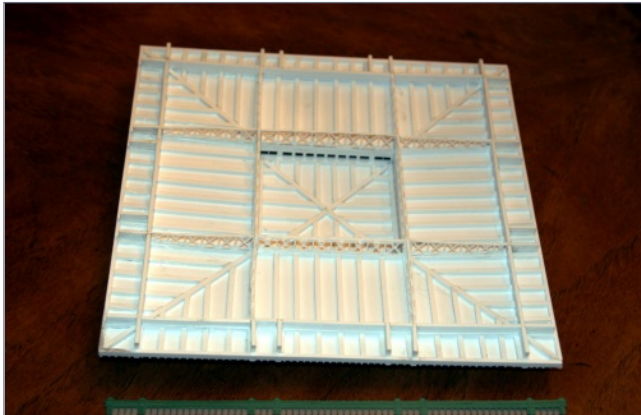
Next up was to create the master and molds for the four, four-sided towers that sit at the extreme right, left front and back corners of the head house. I decided to cast them in one piece. Again, I used a foam block to fill the middle of the master to create both the mold and the copies.

To get the master and the copies out of the mold, I had to carefully split the mold on one side with a sharp knife. I used rubber bands to hold the mold together for pouring resin [7, 8].

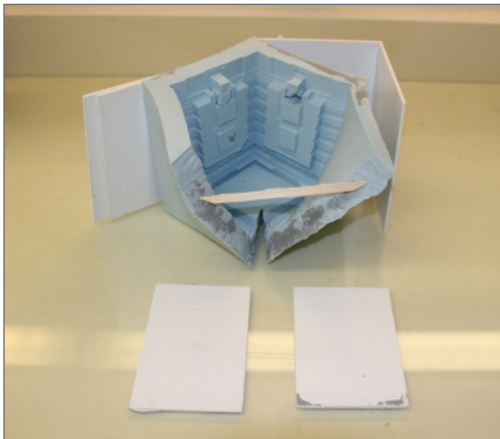




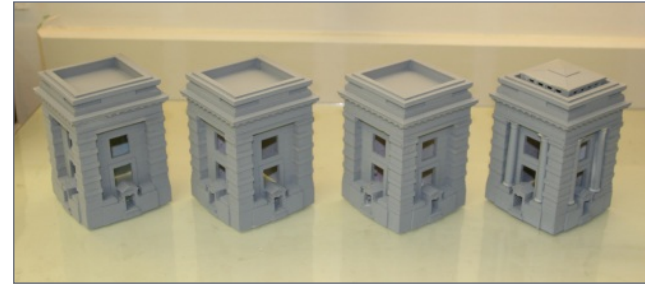
5. Carriage Concourse canopy constructed from styrene, top side.



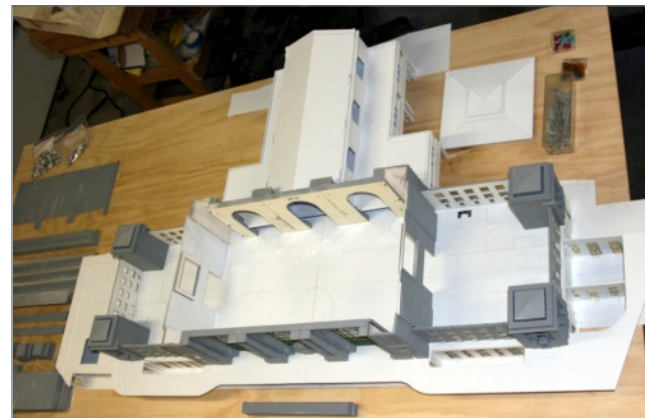
6. Carriage Concourse canopy, bottom side.



7. Mold for the four-sided towers split apart is needed to remove the master and copies.



8. Here are the four, four-sided towers castings complete. The crown on the right tower is a separate hollow casting with open windows using the same technique. I cast the columns for these towers separately.



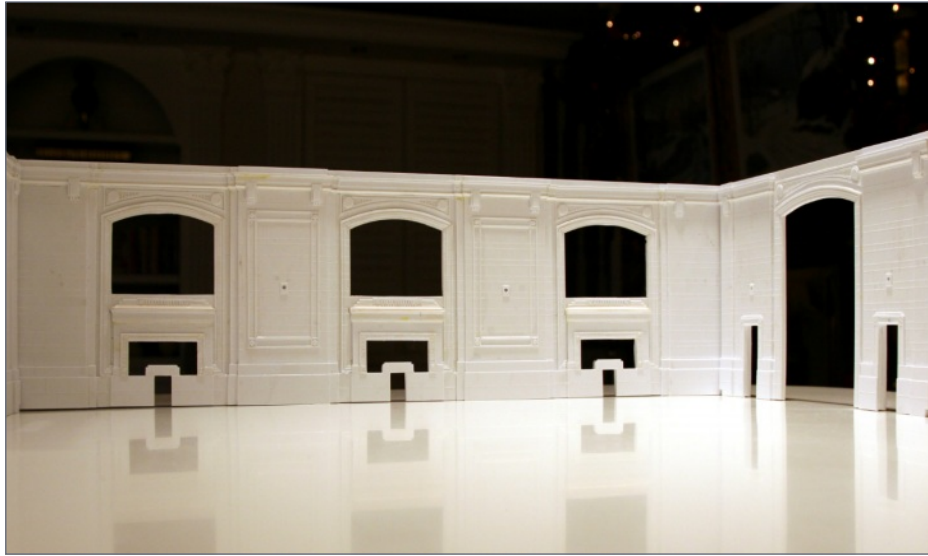
9. Assembly proceeds in the shop with fitting of the east and west office wings.

At this point, the model was so large that I had to do further construction in the shop on a 4x8 sheet of plywood. I could attach the east and west office wings to the head house.

I cast the four interior walls of the waiting room from molds I made from styrene masters [10].

This was going places I had never gone before, and I encountered an unexpected problem. The 1/8" styrene base was stiff, but still too flexible to support the growing weight of the head house.





10. Styrene masters for the waiting room interior walls.



11. The front and rear pediments and entablature pieces as well as the columns for the end towers have been cast and installed.

My solution was to screw two lengths of half-inch aluminum angle longitudinally to the styrene base. I used flat head screws placed from the top side, recessed into the floor of the station. Happily, this retroactive fix solved the problem [12].

With the building upside-down, I added detail pieces to the under-surface of the pediment. I call them “Legos” because of their resemblance, though perhaps someone can tell me the correct architectural term. I created a master from styrene, prepared a mold, cast them, and applied them with glue. This was a fussy but important detail [13].

I added the railings to the plaza-level walkway areas. These railings are curved in multiple places. Fortunately, if you remove the casting from the mold soon enough, it is still soft enough to bend. This made reproducing the railings much simpler.



12. I bolted aluminum angle braces on to stiffen the base. The original foam core mockup is in the background.



The building was now at the point where I could create and fit the large triangular pediments at each end of the head house. I constructed a master of styrene. The mold had to be split at one corner to allow the casting to be removed. In addition, the back of the casting had to be hollow since part of the grand lobby ceiling extends into that area. The styrofoam block method worked perfectly for this [16].

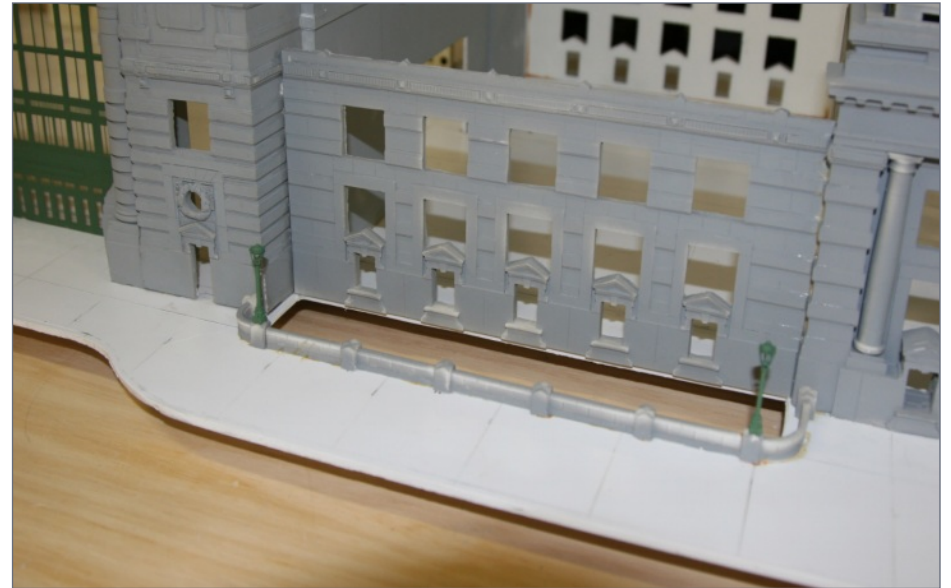
There are “Lego” trim pieces on the underside of this triangular pediment as well, but the little Lego bumps are angled so they are vertical despite being applied to an angled surface. Constructing the master with all the little bumps angled correctly was a tedious job!

LIGHTWELLS AND FINAL ASSEMBLY

Electrification was still relatively new as Union Station was built, so although the building had electric lighting, its



13. Adding the “Legos” to the underside of the pediment.

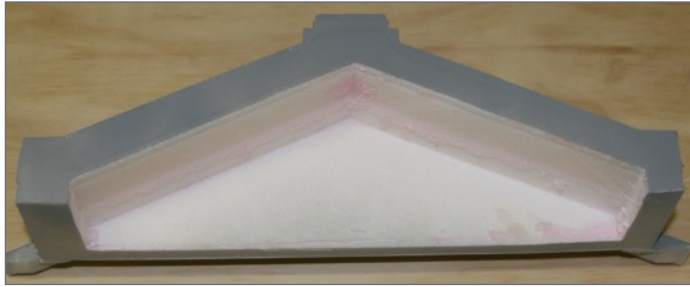


14. Curving ends of the railings for the walkway were easily formed while the casting was still soft.



15. Fitting the styrene master for the triangular pediment.





16. I cast the back side of the pediment open because part of the grand lobby roof extends into this area.



17. "Angled Legos" applied to the underside of the triangular end pediment.

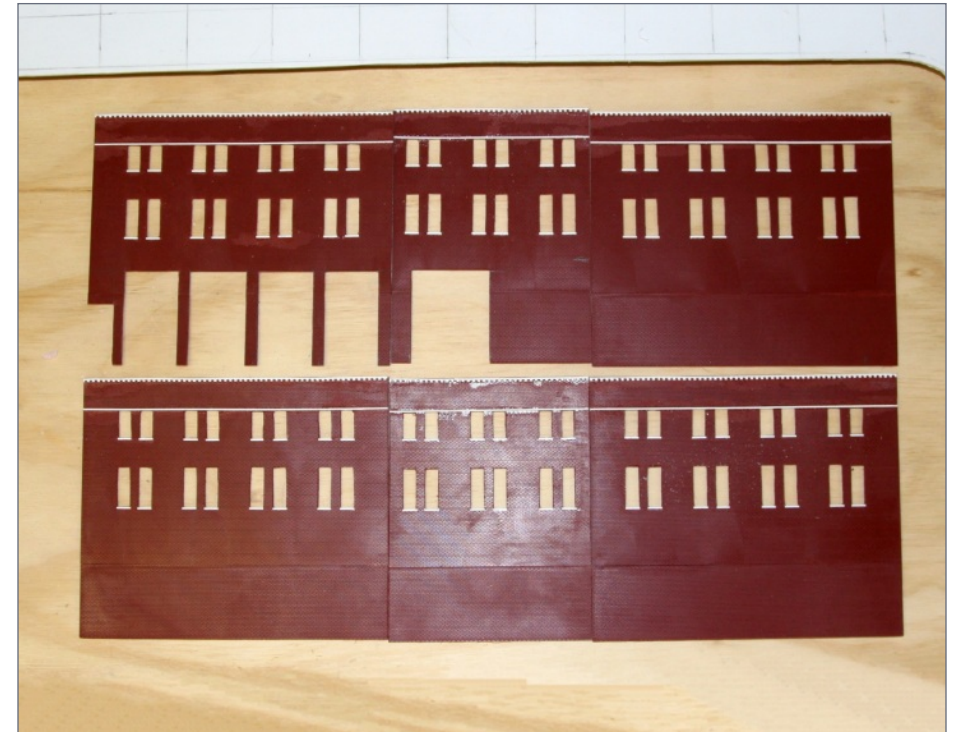


18. The pediment castings glued in place.

designers incorporated natural lighting as much as possible. In the center of the east and west office wings, this was accomplished with central "light wells."

The walls of the light wells would not be visible from outside the station, and so were constructed of brick rather than stone. I used Walther's brick sheet and styrene strip to create them [19].

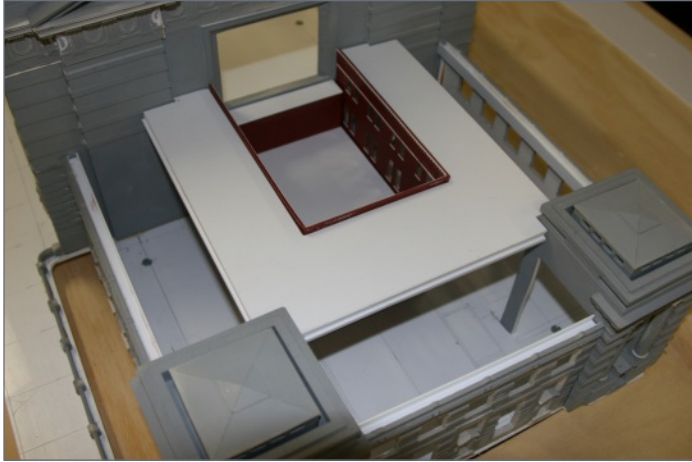
Flat sections of roof surround the light wells. I used styrene strips at the edge of these and on the adjacent outer walls to support the sloped roof visible from sidewalk level. I then covered this sheet styrene with the cast simulated cut stone roofing material [20, 21].



19. The brick walls for the East and West light wells. I painted them a buff color.



Following this I also applied the cut stone roofing material and its prominent “ribs” to the grand lobby roof [22, 23].

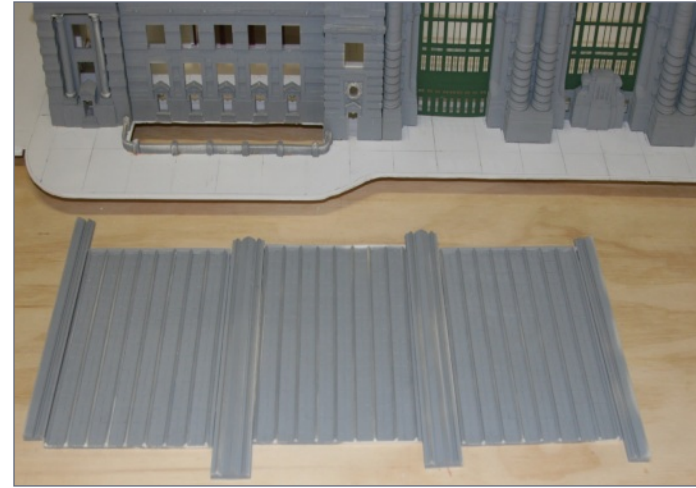


20. The light wells and adjacent roof are in place.



21. I built the sloped roof portions at each end from styrene and covered them with cast roofing material.

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22. Piecing together the cast stone roofing for the grand lobby roof.



23. The completed “cut stone” roof.

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24. The head house shell nearing completion, and fitted to the basement level.



25. Fitting the waiting room to the head house.

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INTERIOR WALLS



26. Fitting the waiting room interior walls.



27. Fitting the strip styrene skylights into the light wells.

Now I created the masters for the interior walls of the grand lobby. I made the base from 1/8-inch styrene sheet. I used styrene strip and sheet and in one case etched brass detail to create the masters for the side and walls.



28. The styrene and brass master pattern for the grand lobby's side walls.



29. The styrene and brass master pattern for the grand lobby's end walls.



30. Skylight and curved railing for the Carriage Concourse.



31. Entrance canopies for the smaller entrances.



32. The “arch liner” pieces have been cast-formed and glued in place to the inside wall.



33. The grand lobby interior walls have been fitted, and the final side wall is snapped into place.



34. The grand lobby ceiling begins as a sheet of 1/8-inch styrene. Note how the ceiling extends into the pediments to the right and left.

There is a space between the inner and outer walls of the grand lobby which amounts to about 1-1/4" in HO scale. In real life, an airlock occupies this space on the ground floor, while the second floor has walkways. At one point, a model railroad club occupied space above the arches.

I needed to create a piece to fill this space and line the arches on my model. I created the master and mold flat. I then removed the cast pieces from the mold while soft and wrapped them around a wooden pattern to give me the correct U-shape.

I then glued the arch liners in place. The liners and inside walls would fit snugly up against the glass glazing of the outside wall when complete [32].

I mitered the inside walls of the grand lobby on the table saw. I placed one end wall first, then the front side wall, then the remaining end wall. It worked out precisely so I had to trim off about half the miter when installing the last sidewall, and once in, the walls remained in position [33].

To support the grand lobby roof, I found two pieces of scrap Corian material in the shop, and glued and screwed them to the front and rear outside walls. These supported the sheet of 1/8" styrene that would form the basis for the grand lobby roof [34].



THE GRAND LOBBY CEILING

The ceiling of the grand lobby features an impressive display of cast plaster typical of that era. I remembered the roof as kind of a brown shade. This was the result of the accumulation of years of smoking and dirt.

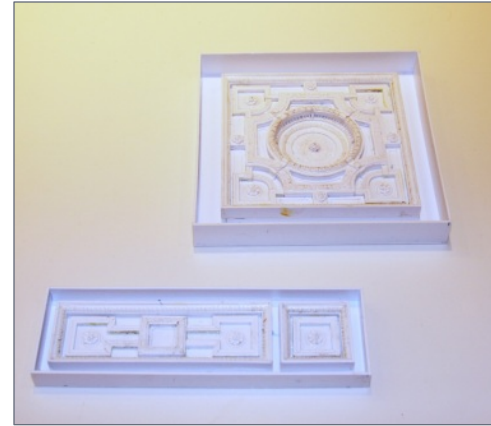
As a result of leakage from the roof tiles after the building was taken out of service, approximately one-third of the plaster ceiling had fallen, and another third was badly damaged and ready to fall. This made it dangerous to enter the grand lobby.

For the ceiling, the Union Station restoration team engaged the services of the same group that restored the ceilings of Windsor Castle. They took microscopic paint chips to determine the original colors, and made all the molds needed to recast missing pieces. There were dozens of different sizes of “eggs” for the “egg and dart” trim since they were originally not made from standard molds.

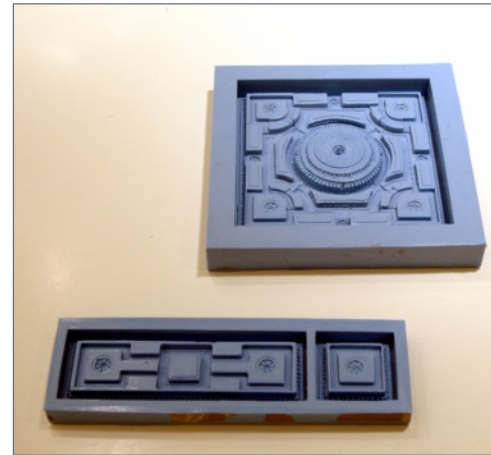
They also re-created the elaborate multi-step process needed to repaint and refinish the ceiling to stunning result. They said some people were offended because, like me, they only remembered it as brownish. No living person had seen the ceiling in its original glory before the restoration was complete.

For all its complexity, there were only three distinct decorative areas in the ceiling: the three large center squares from which the chandeliers hung from a sunburst pattern, the smaller rectangular areas, and the small squares.

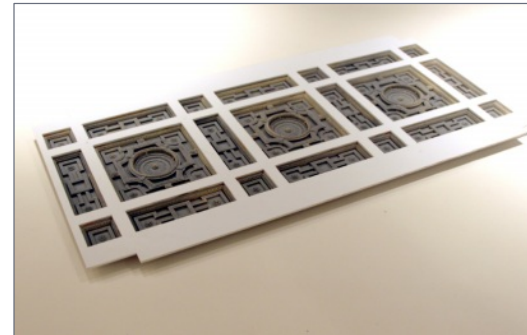
I created the masters from styrene and molded these to create the multiple pieces needed for the ceiling [35-38]. You can make anything from styrene sheet and strip by adding enough bits and pieces! I painted the individual plaster casting areas by hand [39].



35. The styrene masters for the ceiling plaster work.



36. The molds for the ceiling plaster work.



37. The grand lobby ceiling with the plaster-work castings glued in place.

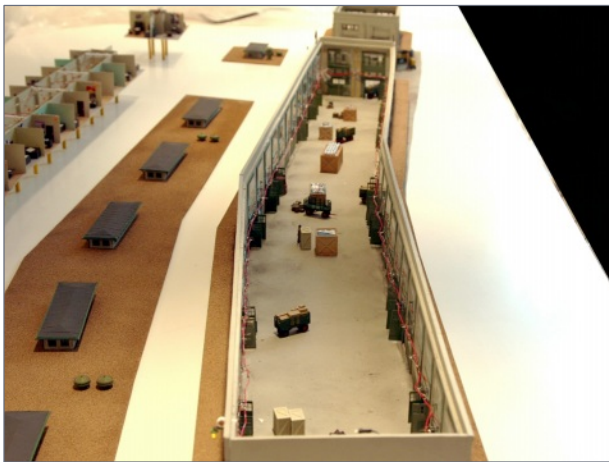




38. The grand lobby ceiling fitted in place and viewed from the top.



39. The grand lobby ceiling painted and ready for installation.



40. The Railway Express plaza-level detailing. The roof to the left is finished, weathered and ready for installation.

RAILWAY EXPRESS AGENCY DETAILING

With the grand lobby ceiling completed, I returned to the Railway Express Agency building to detail the interior. I used styrene sheet to create the second floor of the building in one piece, and the roof in one piece as well. That way, I could detail and finish the interior above the first floor at the bench in a comfortable working position, and simply drop it into place in the building when I finished [40, 41].

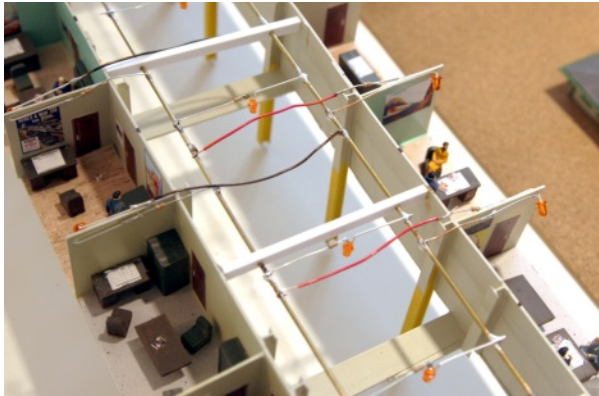
I made the office furniture for this portion and for the entire station from styrene masters and molds. There are five pounds of office furniture in the building [42]!

I found images for flooring and wall detail such as calendars, pictures, posters, desktop blotters, and blueprints using Google. I sized and printed them on whole-sheet peel-and-stick labels. I created all the interior doors the same way [43].



41. The Railway Express building interior insert with detailing and offices for the second floor.





42. Heavy brass wire carries the power and supports the LEDs and their resistors. Note the cast office furniture and wall detail.



43. Peel-and-stick doors and wall details from images I found on Google.



44. The completed, lighted Railway Express building.



45. The West End of the Railway Express building. Interesting from a modeling standpoint, the Broadway Bridge passes through the opening between the two sections of the building.

Following this, I detailed and lit the basement section of the Union Station. I used plenty of peel-and-stick detail to give something to see through the open doors. Mini scenes at each of the doors bring the model to life.

SUB-BASEMENT DETAILING



46. The basement of the Union Station detailed and lit, ready for installation on the model railroad.



47. The completed basement section standing by laundry machines for scale. Completed and assembled, it measures 6' long, 4' wide, and weighs eighty pounds!



48. The basement level and drive in place on the model railroad.



See you next time to continue with painting the Union Station. ☑

49. Mini scenes bring the model to life.



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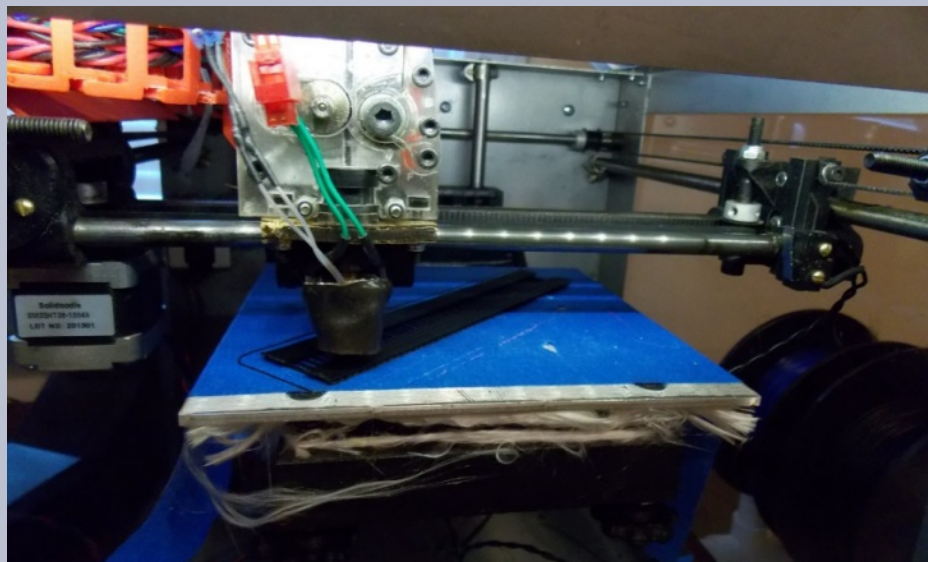
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3D filament printing - one modeler's experience



MRH Running Extra | April 2022

KEN WOLF INTRODUCES US TO
THE WORLD OF **3D** FILAMENT
PRINTING ...

MY BACKGROUND HAS ALWAYS INCLUDED NEW

TECHNOLOGIES. I worked for many years in the semiconductor business. When 3D printing came around, it piqued my interest. 3D printing is better called “additive manufacturing.” There are many types of additive manufacturing, but we will be discussing plastic extrusion as most modelers can have access to this technology.

Plastic extrusion is simply where a roll of plastic filament (like weed cutter line) is heated and pushed onto a flat surface. In



3D FILAMENT PRINTING | 2

1. In this picture you can see the extruder which deposits the plastic, as well as the feed mechanism.

recent years, 3D resin printers have also become popular, but I am focusing on 3D filament printers. The process of making the CAD model is similar for both types.

Slicer software breaks a three-dimensional graphic into many two-dimensional layers. It is like cutting paper patterns and gluing them precisely, layer-on-layer, to build an object.

Instead of layering paper, the printer extrudes molten plastic to follow the pattern for each layer, proceeds to the next, and so-on until the object is finished. Some printers have a heated print bed to reduce warping as the initial layers of plastic cool.

This process can produce an almost endless number of shapes that you can easily scale to different sizes. Your only limitation is the size of the build platform on the machine.

The process of making an object is an easy three-step process: First, make or find a CAD drawing of an object. Next, slice the CAD drawing and generate code compatible with your printer. Finally, print the object.

CAD DRAWING

You can draw CAD drawings yourself. There are also a great many free designs available. One of the best websites I have found is www.thingiverse.com.

If you search for a subject such as “modular,” you will find numerous designs available you can build.

If you do want to try your hand at generating your own designs, Google Sketchup is a great program. They have a free version here:

WEB: www.sketchup.com/plans-and-pricing#for-personal



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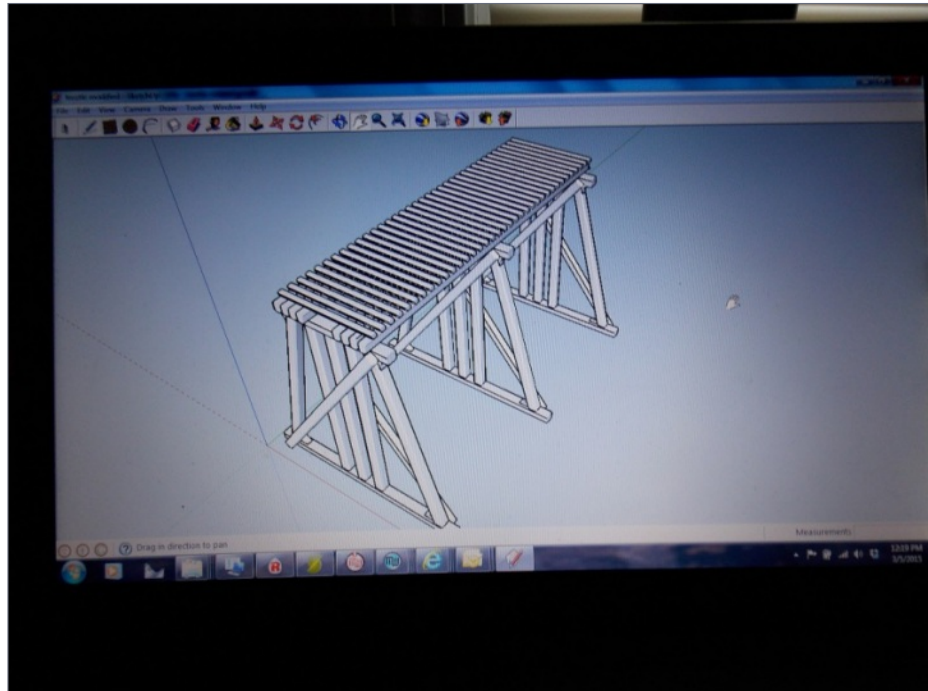
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SLICING THE DRAWING

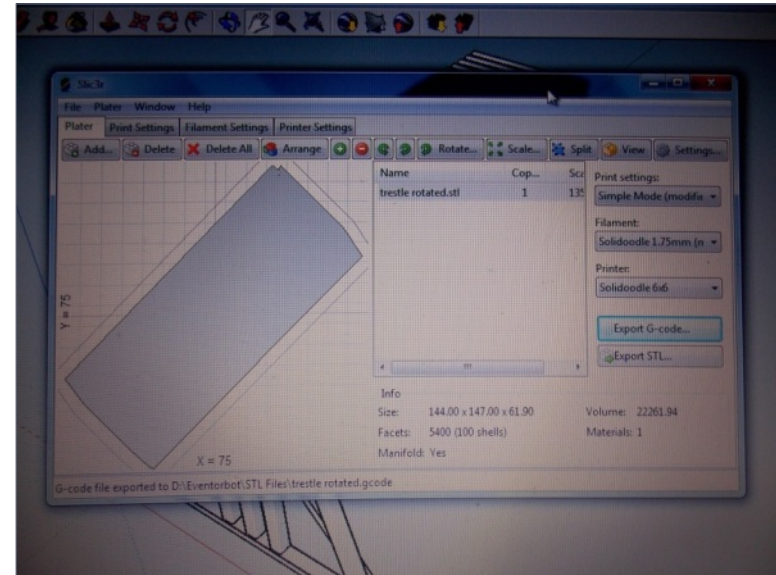
I use Slic3r for this operation. Simply open the software, tell it what printer you have, and it sets the most common settings for you. Drag your drawing into the screen and tell the software to generate the G-code (which is a computer language used by CNC machines). It will do this automatically and save the printer-ready file [3].

PRINTING THE OBJECT

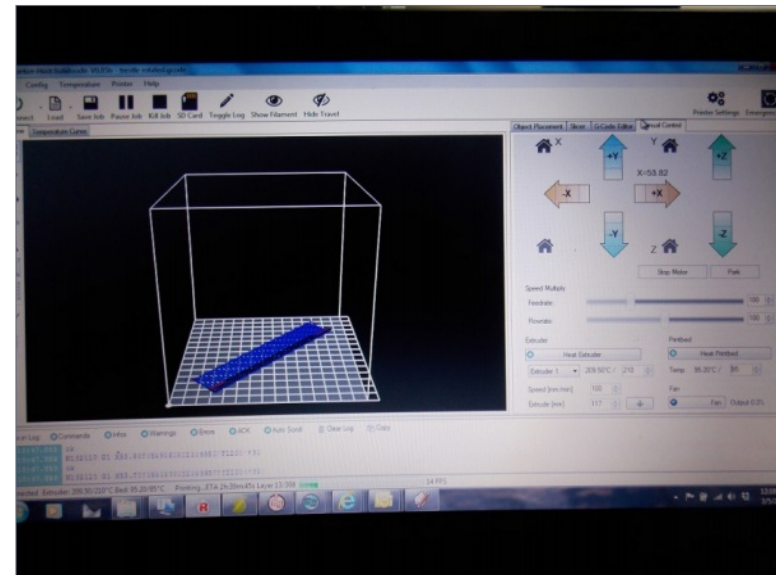
Once you have generated the G-code, open your interface program (such as MakerBot, Pronterface [4] or Repetier [5]).



2. This is Google Sketchup with a trestle drawing.



3. This is Slic3r with the trestle placed on the build platform.



4. Pronterface.



3D FILAMENT PRINTING | 5

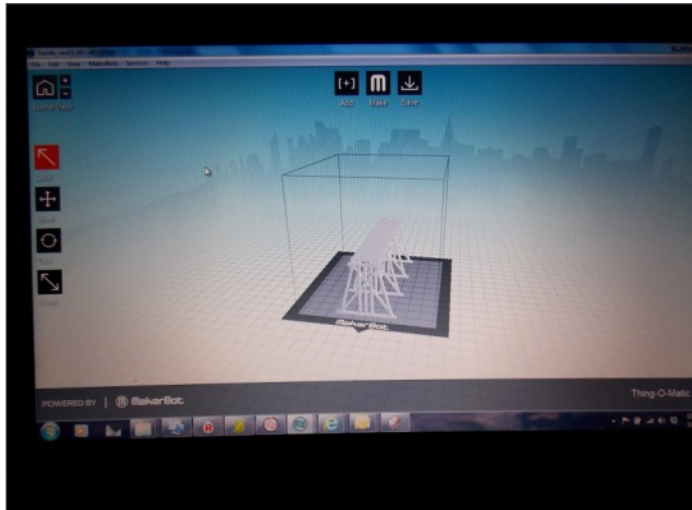
These programs are also free, and can be used with various printers. Your printer will usually dictate the software to use. Once opened, load the G-code file, and start the print. It sounds easy, and for the most part it is, but I will discuss issues in a bit.

There are many printers out there from a variety of manufacturers. Most have users' forums which will help you resolve issues you encounter. I used a filament printer for the examples in this article.

I made my own – you can find plans here: all3dp.com/2/3d-printer-plans-3d-printer-blueprints. But I found printing much easier and more fun with commercially available units, so I would recommend staying with them.

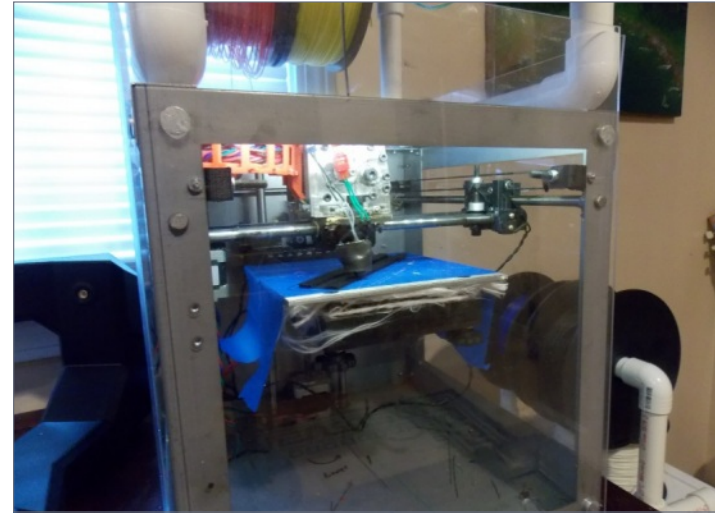
LEVELING THE PRINT BED

Making sure your print bed is level and properly spaced from the extrusion nozzle is crucial. I set the nozzle to be the thickness of one piece of standard paper above the bed.



5. Need a caption.

3D FILAMENT PRINTING | 6



6. My filament 3D printer, slightly modified. It's a Solidoodle 2, which is no longer manufactured.

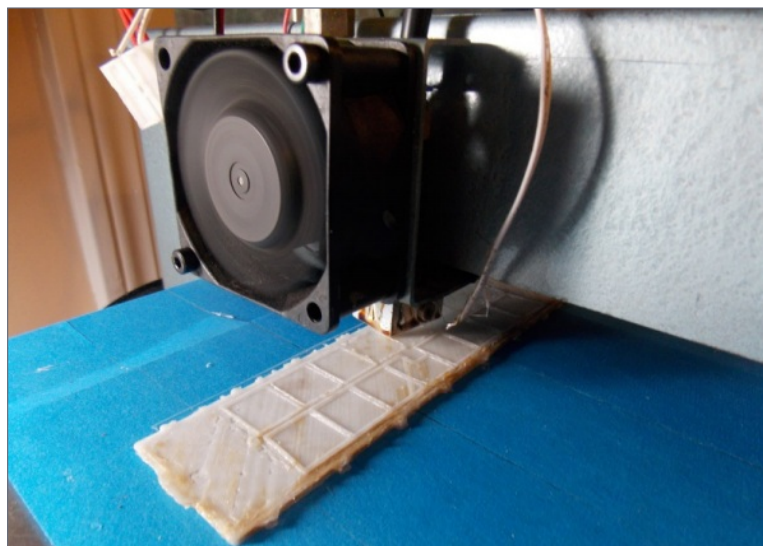
I zero the Z axis (height) and adjust the bed so the nozzle just drags across a piece of paper between the nozzle and the bed. I do this by feel, but some machines now have automatic leveling, so this operation is taken care of for you.

EXTRUSION MATERIAL

I use ABS plastic for most of my builds. I also have used PLA. PLA is a more brittle finished product but is easier to print. PLA can be printed on an unheated bed while ABS requires a heated bed [7].

You can also find flexible filaments, Nylon, dissolvable plastics, and many other materials. Check manufacturers' instructions for specific temperatures and warnings for each material.





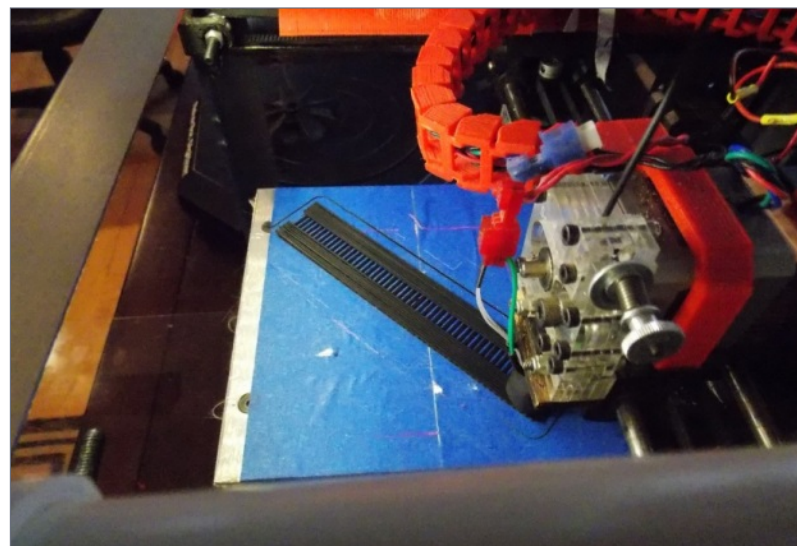
7. PLA on my DIY 3D printer.

ADHESION OF THE PRINT TO THE PRINT BED

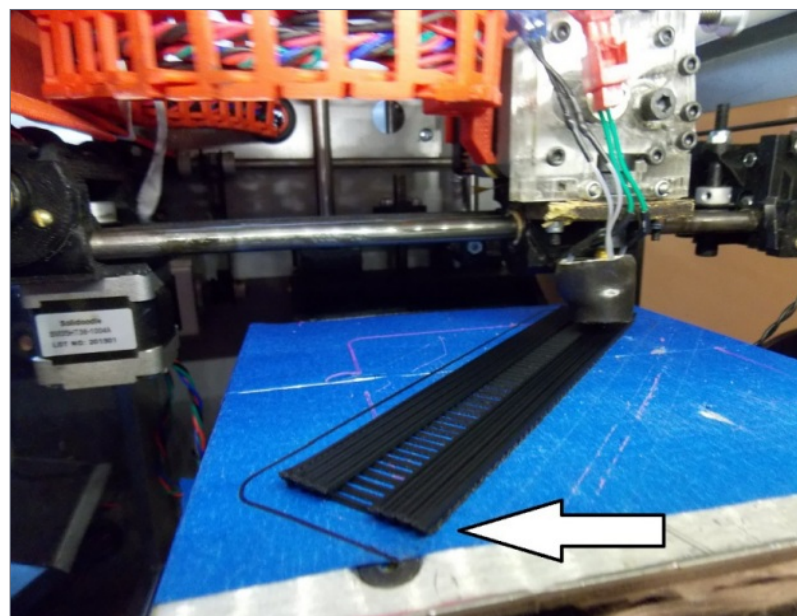
You need a surface the plastic will adhere to when printing, or it will lift and warp when cooling. I lay down painter's tape on my print bed before leveling it [8]. This works well for both ABS and PLA.

There are several options for preparing your printing surface for good adhesion. You can also use Kapton tape or a glass plate to print on. Check your machine's recommendations, but be flexible. Try different approaches until you find something you like.

For larger ABS prints, I find putting a layer of ABS Glue (ABS plastic mixed with acetone) on the bed before printing can help with adhesion for those stubborn warping problems. If you see warping taking place, you can even put some glue down and hold the part in place for a second to correct it. Some have used a glue stick for this.



8. Blue painter's tape; I don't always change it for every print.



9. Here you can see some lifting on this print.

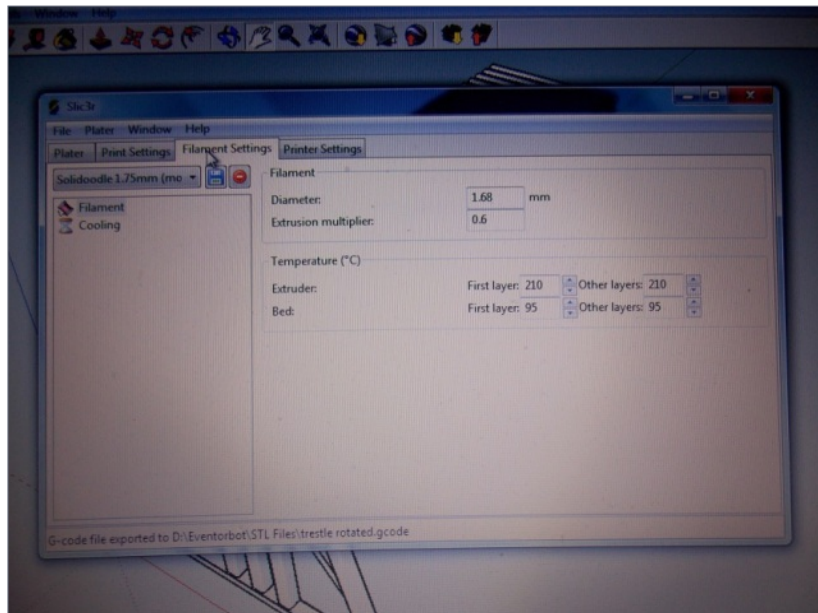


TEMPERATURE

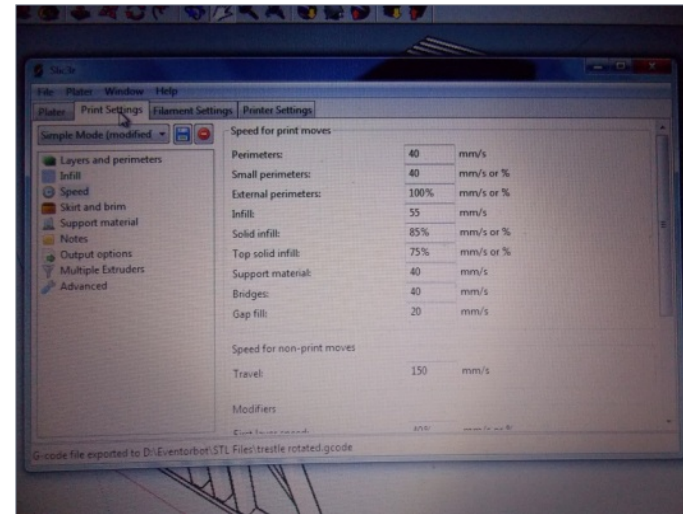
The material being used determines extruder temperature. For ABS I use 235 to 240 degrees Celsius, which is the upper end of the temperature range for ABS. I set my printer's heated bed to 95 degrees. You can go higher for the bed, but it may take a while to reach temperature [10].

PRINT SPEED

I find that for most prints I can use the default speeds in Slic3r, and it works well. For more precise prints, I usually slow all the speeds by half, but this makes the print take much longer, of course [11].



10. Temperature settings on Slic3r.



11. Speed settings on Slic3r.

SCALING

This is the best part of additive manufacturing. Say you have a design drawn in HO scale. Your N scale friend wants one too.

With Slic3r, you can simply change the scale by a percentage and print it. There is no need to redraw the object, and you can also scale up just as easily. The build bed size is your only limitation.

PRINTING MODELS

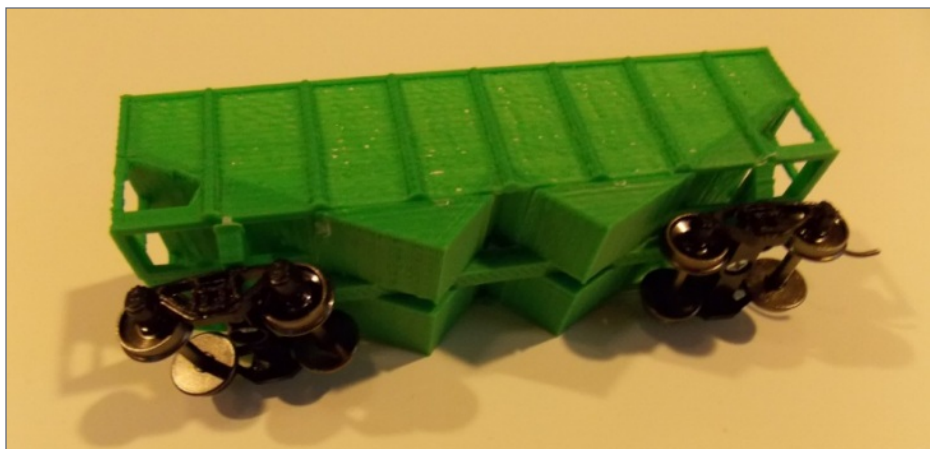
I have printed hopper cars, flat cars, building fronts, and trestles. You can also print tunnel portals or any other item you can draw or find a design for. The uses of this tool are limitless [12].

I also have a MakerBot Digitizer/Scanner, and am working on the best ways to scan items, so I don't have to do any drawing.





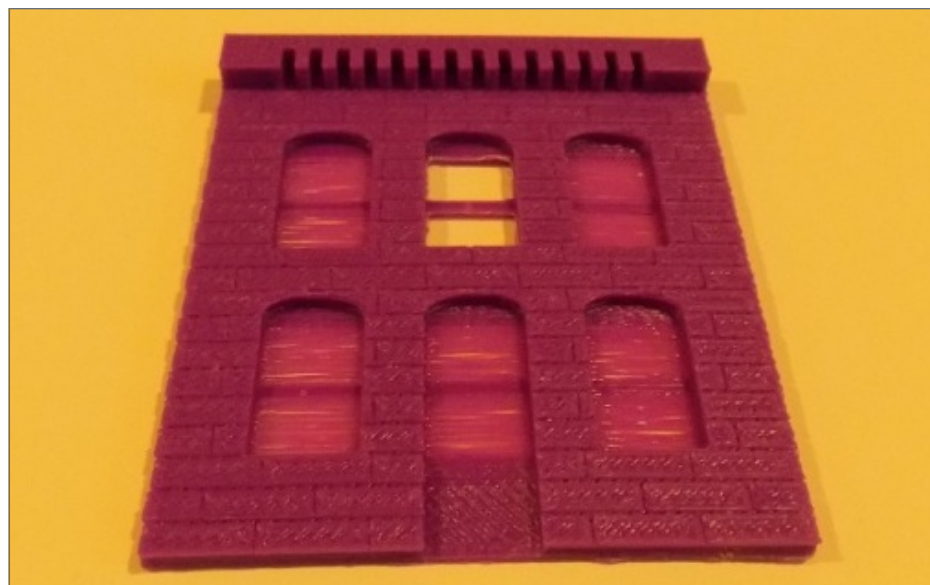
12. This is a 55-ton hopper printed in brown.



13. This is the same hopper in green with trucks and couplers added.



14. This is a 35-foot flat car printed in brown.



15. This picture is of a modular building that was printed in purple. I removed the flash from one set of windows to show how it looks when printed and cleaned.

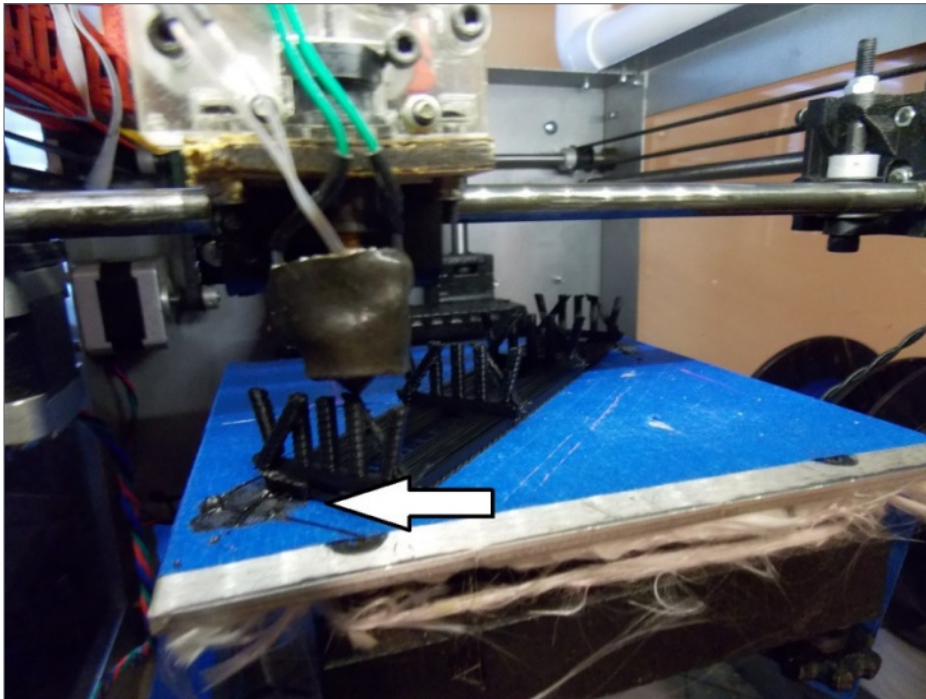
3D FILAMENT PRINTING | 13

This would be fantastic for cars, trucks, or any other items that are difficult to draw. That will be for another article.

SUMMARY

3D Printing is a fantastic new tool to the modeler. It can also be a great tool for our suppliers. Items can be made to order as they are received. In small-volume manufacturing this is a great bonus.

The technology will only get better for the hobbyist, and the limits are only set by your imagination. Have fun with it, try new things, and help bring our hobby into the 21st century and beyond. This process really is easier than it looks.



16. This is a trestle in black. The arrow points to the glue I used to anchor the corner down.

3D FILAMENT PRINTING | 14

Check out the large-scale Big Boy on www.thingiverse.com, you will be amazed at this model. ☑

KEN WOLF



Ken is 55 and a Vice President of a small sales and service company. He has been involved in model railroading since the age of 8. He grew up in Arizona and has lived in Texas, Oregon, and Massachusetts. His modeling prototype is Union Pacific during the steam transition era, but he has recently incorporated New Haven into his collection. He is on his fourth layout, and this time he is experimenting with different techniques and building tips on the layout. The layout has four separate modules that feature a different technique on each module.

Ken is married and has three grown children and five grandchildren. Other than model railroading, he enjoys sailing and fishing. ■



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Simple box benchwork



MRH Running Extra | April 2022

CURT MARTIN SHOWS AN AESTHETICALLY PLEASING ALTERNATIVE TO TRADITIONAL BENCHWORK ...

IN MY 35 YEARS IN THE HOBBY, I've seen a variety of different benchwork systems, from simple wooden legs to stud walls. These approaches are functional, if unsightly. The typical solution is to hang a curtain off the bottom of the layout to hide the legs and whatever clutter is underneath.

I recently built new benchwork for two model railroads using simple boxes to support the layout. Each box had four height-adjustable legs connected with wood strips and sheathed with



SIMPLE BOX BENCHWORK | 2

1. A line of finished box benchwork cabinets supporting the author's partially completed Little Redstone Junction railroad.

an attractive plywood veneer. The box benchwork not only supports the layout and provides organized storage, but it looks good enough to fit with my living room decor.

BUILDING A BENCHWORK BOX



2. The finished frame for each benchwork box, with slats in the bottom and back so the box can be used for storage space.

MAKING THE LEGS

Start by making the four legs that form the outside corners of the box. These are the longest pieces of wood, so use your longest stock and make all four at the same time. The legs are 1-1/2" square lumber cut to the same length.

To make a leg, I start with a piece of 2x4 lumber and rip it in half on a table saw for two 1-1/2" square legs. Alternatively, you can purchase 2x2 lumber, which is already 1-1/2" square.



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SIMPLE BOX BENCHWORK | 3

To calculate the length, first determine your lowest level, then subtract the depth of your benchwork. For example, if you want the track to be 44" from the floor, and your benchwork is 5" deep, then your legs should be 39" long.

DRILLING THE ATTACHING POINTS

Drill two 3/8" holes through the top of each leg as seen in [3]. This allows the L-girders to be attached on any side of the finished box. I prefer 3/8-16 hex bolts for attaching the legs to the L-girders.

I drilled the holes 1-1/4" from the end of the leg and 3/4" from the edges. A template with 1/8" holes makes it easy to mark the hole centers.



3. Holes in the leg top for connecting the benchwork box to the layout L-girders.

SIMPLE BOX BENCHWORK | 4



M. Dodd

A HAND DRILL ALTERNATIVE

Drilling a 3/8" hole at 90 degrees through the legs can be challenging with a hand drill. A 3/8" Forstner bit in a drill press is easier to control and produces a clean precise hole. Lacking those, try this on two faces of the leg:

1. Drill 1/8" pilot holes in two adjacent leg faces, all the way through. Try hard to make these holes perpendicular to the leg.
2. Clamp the leg to a piece of scrap 3/4"-thick wood to reduce splintering for the steps below.
3. Drill with a 1/4" bit to enlarge the pilot hole.
4. Drill with a 3/8" bit to enlarge the 1/4" hole to the final size.
5. Un-clamp the leg, rotate it 90 degrees, clamp again, then repeat steps 2-4.

Mark the center of a leg's bottom and drill a hole straight up into the middle to mount an elevator bolt. Wrap a piece of tape around your drill bit to set the length of the elevator bolt's threads, plus an extra 1/4". You can clamp a leftover piece of L-girder to the end of the leg and use the seam between the boards of the L-girder as a guide [5].

There is one more table saw operation to perform before installing the elevator bolts and T-nuts.

MAKING THE SLOTS FOR THE STRETCHERS

Stretchers connect the four legs together at the bottom and the top, forming a box with durable square joints. You need to cut slots on the two faces of each leg that adjoin the outside corners.



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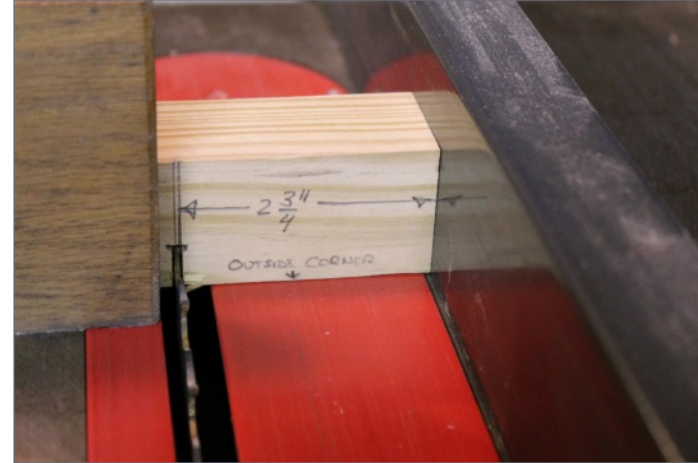
4. Elevator bolts in each leg allow adjusting the height and leveling the layout.



5. Drilling the holes for the elevator bolts.



SIMPLE BOX BENCHWORK | 6



6. First saw cuts across the leg to form one side of the slot.

Raise the table saw blade to $\frac{1}{2}$ " above the table and adjust the fence to 2-3/4" from the side of the blade to begin the first shoulder of the slot. Place the end of the leg against the fence and use the table saw's miter gauge to feed the leg through the saw. Repeat the cut on the adjacent side of the leg, then perform the same to cuts on the opposite end of the same sides [6].

Move the fence 1-1/2" away from the blade to create the other shoulder of the slot – you want the slot to be 1-1/2" wide, so be sure to allow for blade thickness. Repeat the cutting process described above.

Remove the wood between the shoulders to create the slot. A dado blade will make quick work of it. If you don't have one, make a series of parallel slices between the shoulders with a regular blade. A few minutes with a chisel will break out the wafers of wood and leave a clean slot for the stretchers [7].

For the stretchers, you can purchase $\frac{1}{2}$ "-thick "craft wood" boards from Lowe's or any other big-box seller. It comes in a variety of widths, including the 1-1/2" width this project calls for.



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7. Finished pair of slots in the leg, ready for assembly of the box skeleton.

MAKING THE STRETCHERS AND ASSEMBLING THE BOX

Before cutting the stretchers to length, decide how wide and deep the make the finished boxes. Since the boxes are meant to be bolted to L-girders, the easy answer is making the boxes' width match the L-girder spacing. I spaced mine 20" apart.

With the outside dimension set, subtract $\frac{1}{2}$ " to account for the thickness of the stretchers where they meet at the corners, and you have the finished length of the stretchers. My stretchers are 19-1/2" long.

Assembling the box skeletons goes quickly. Take two stretchers and a leg, smear wood glue into the slots at one end of the leg, and insert the two stretchers into the slot so the end of one overlaps the other. Check that they are 90-degrees to the leg and to each other, then clamp in place until the glue dries, or use finishing nails if you don't have enough clamps [11].

With all the legs and stretchers glued into a box, turn the box upside-down. Apply a little 30-minute epoxy around the holes in the end of the leg, drive in the elevator bolts and T-nuts, then set the box aside overnight so the epoxy can set. The



8. Overlapping joint at each leg. Glue the stretchers into the slots in the leg and secure them with a finishing nail.

epoxy adds strength for keeping everything in place when sliding the boxes around the floor.

APPLYING THE VENEER

Adding veneer not only improves the aesthetics of the box benchwork, but it also improves stability. The box frames alone can support quite a load, but they still have enough flex that the layout wobbles if bumped. Applying veneer on at least three sides of the box all but eliminates the flex and wobble.

The simplest option is replacement veneer for interior doors. It is easy to cut with a hobby knife, will stick to the box frame with wood glue, and will take normal wood finishes. There are several online resources to help you learn to apply veneer to cabinets.

The basic box needs veneer on at least three sides. What you do with the fourth side is up to your imagination. As you can see from the photos, I have added hinges and cabinet doors to the fourth side of mine, but you could add drawers, internal shelving, leave it open, or whatever else you imagine.



SIMPLE BOX BENCHWORK | 9

The completed boxes are incredibly strong. I've seen two adult members of the local club sitting on top of the L-girders supported by a single box. I would not advise putting this kind of weight on it, but it held up without even a creak or cracking noise.



9. Typical placement of a benchwork-box under a section of a layout.

SIMPLE BOX BENCHWORK | 10

PUTTING THE BENCHWORK BOXES TO USE

One box can handle a section of layout roughly five feet square when placed under the center of mass, more if two boxes are working together on adjacent sections. Once you place the boxes, bolt the L-girders in place on top, check for level, and you're ready to build your layout on top. Enjoy the strength, storage space, and attractive aesthetic of your box benchwork [9]. ☑



CURTIS MARTIN



Curtis' interest in trains started when he was about six. His father collected Lionel trains, and they had a layout in the basement. He continues to love steam.

He enjoys electronics the most. He was an early adopter of command control. First by building a CTC-16e/CTC-80 system in the 1980's, then adopting DCC in the 1990's. He currently uses the JMRI software based layout control while tinkering with Arduinos and Raspberry Pi micro controllers in models.

His current projects include rehabilitating brass trains from the 1960s through 1980's. He converts them to DCC, adding lights and sound, while rebuilding the running gear.

His education was in Aeronautical Engineering, though his entire professional career has been in computer software. ■



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Making turnout, milestone and information signs



MRH Running Extra | March 2022

BRIAN KRUPICKA USES SIGNS TO ORIENT HIS OPERATING CREWS TO A CHANGING LAYOUT ...



THE DBRR (DIANE AND BRIAN RAILROAD) IS ALWAYS CHANGING AND getting more complex, with ever-increasing automations. Over several operating sessions, it became apparent that veteran crews and new operators alike needed more guidance.

I designed the DBRR so Tortoise switch machines with Digitrax DS64 decoders automate all mainline turnouts, including crossovers, sidings, and the reverse Y. Push-pull rods control all spur turnouts off the main. All Yard turnouts have Caboose Industries hand-throws.

MAKING INFORMATION SIGNS | 2

1. Milepost sign.

To ease the confusion, we needed to label the turnouts according to their DCC designations. What the operators saw on the layout, the JMRI display, and the push-button control panels for each turnout all needed to match.

I took inventory of the number of labels I needed, printed the turnout inventory tables, and accounted for all the push-pull rods. DBRR was growing faster than I realized!

After completing the inventory, I realized we needed two types of signs. Milepost signs would tell the dispatcher and engineer the train's location. Turnout signs would correspond to the fascia control panels, push-pull rods, and JMRI-generated control panels.



2. Typical turnout signs.



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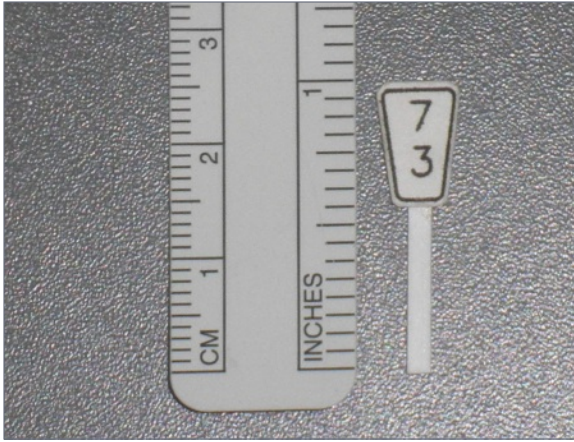
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MAKING INFORMATION SIGN | 3



3. Cardstock printout and final assembly.



4. Animated feature 9 has a couple of railfans whose camera flashes fire as a train approaches.

MAKING INFORMATION SIGN | 4

Milepost signs could help orient the dispatcher and engineers, while adding realism and detail to the scene. My research showed several types, sizes, and shapes, but I wasn't sure what to use.

Then, while out to dinner one evening, my steak came with a small swizzle stick that was the right shape and size for a milepost, and I had what I needed. I asked the waiter for a couple dozen swizzle sticks. After much discussion and glares from others at the table, I got them.

I painted the swizzles white and glued cardstock numbers to them. I placed them at appropriate places around the mainline.



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MAKING INFORMATION SIGN | 5

I used my AutoCad software to create a basic shape for the turnout signs. I copied and pasted this basic shape and added number labels for each turnout, making about 20 extras for future expansion. I printed the signs on cardstock.

I cut out the labels with a border of white around the black outlines, rounded the four corners, and glued them to 1"-long pieces of 0.040" x 0.080" Evergreen plastic strip (no. 144). I placed them on the layout near their turnouts, oriented to the operating aisle, and sufficiently spaced so that they would not interfere with rail traffic. This helped ease operators' confusion a great deal at the next session.

The DBRR currently has 32 animated features and automated details. I provide visitors with a self-guided information sheet listing these features, and made corresponding number signs using straight pins and cardstock. ☑



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MAKING INFORMATION SIGN | 6

BRIAN KRUPICKA



Brian and his wife live in Yorkville, Illinois and travel the country in an RV. They have children, nine grandchildren and one great-grandchild.

Brian has provided clinics at NMRA conventions and other gathering. He also belongs to three model railroad clubs. His primary HO interests are in 1970 and 1980 operations. He has over 30 animation and automation features on his layout. ■



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THE AH-HAH MOMENT

column



MRH Running Extra | April 2022

JOE FUGATE EXTENDS THE WORKING LIFE OF
ACRYLICS WITH A WET PALETTE ...

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WHILE I LOVE THE SIMPLICITY OF WORKING WITH

ACRYLICS, I DISLIKE HOW FAST THEY DRY. Water cleanup and water thinning make working with acrylics easy, but it would be nice if we could do something simple to keep them from drying so fast. Turns out there is just such a tool: a wet palette. *Ah-hah!*

Greg Baker, MRH Author and regular TrainMasters TV guest put me onto using a wet palette. A wet palette is simplicity itself: simply put a foam pad into a shallow plastic tub with a lid, then soak the foam with water.

On top of the sponge, add a sheet of parchment paper and soak it with the water from the foam. Now, whenever you add acrylic paint to the wet palette, the paint will remain workable and won't dry out. Not only does that make it so any unused paint can be saved, but that makes it super easy to blend various colors as needed for weathering or for dry brush highlighting.

Once you're done with a session, just close up the lid. You can come back weeks later and the paint will still be wet and workable. What's not to like about that?

While you can make your own wet palette (an internet search reveals several how-to's online), ready-made wet palettes are inexpensive. The shopping list link at the end of this article has a couple good options: a basic one for less than \$15 and a deluxe version for right at \$20.

THE AH-HAH MOMENT | 2

1. A wet palette can keep acrylic paint from drying out for weeks. You can save money on the paint since it won't dry out on you between projects.



2. You can get a simple wet palette for less than \$20, or you can spend a few dollars more and get a deluxe wet palette like this that comes with lots of supplies and anti-bacterial rings you put in the bottom of the case to inhibit bacteria growth. This is the one I own.



I opted for the \$20 deluxe model. It comes with a good supply of paper and foam, and it also comes with anti-bacterial rings to put on the bottom of the tub to keep stuff from growing in the moist tub environment.

So get a wet palette. Literally, the best thing since sliced bread. ☒

To get a shopping list for this article, visit the MRH website at this link: mrhmag.com/magazine/running-extra/2022-04/ah-hah-moment-shopping



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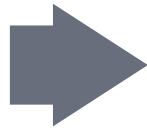
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Bonus section!

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



ALSO:

- Soldering tips and tricks
- Short-proofing DCC decoders
- 3D printing a U30CG
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- ... and more inside!

Charlie Comstock's ...

Bear Creek & South Jackson layout update

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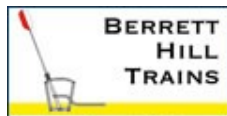
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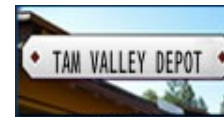
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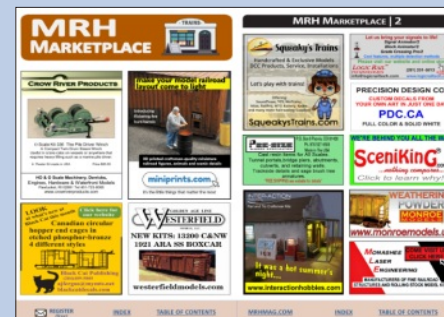
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Model Railroad Hobbyist | April 2022

JOE FUGATE: GET YOUR TRACK PLAN
CRITIQUED BY A REAL RAILROADER ...



MANY OF YOU MIGHT RECOGNIZE GREG BAKER AS A REGULAR contributor of articles in MRH and Running Extra, as well as a regular guest on TrainMasters TV segments.

Besides being an accomplished modeler and photographer, Greg is also a railroader by profession in real life. Greg has been out on the line switching cars as a brakeman, and he's also been an engineer in the cab.

For a time, Greg was in charge of training new hires for his railroad employer. He has used the hobby as a tool for training, getting approval to build a model railroad and use it to put his trainees through their paces. The railroad liked this because running model trains onto the ground was a lot less costly than the 1:1 equipment!

Greg's a lot of fun to talk to because he has many great stories from his career on the railroad.

For example, Greg and his real railroader buddy Barry Karlberg have run trains at model railroad op sessions. It's always interesting to hear how the modelers react when Greg and Barry crew a job on the layout!

One time, they got a local switching job. Due to their real-life experience running trains, Greg and Barry took a completely



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different approach to doing the switching work, and finished it in record time. The regular operators at this model railroad were totally amazed that they had never thought of doing what Greg and Barry did to work the job so fast!

Bringing Greg and Barry to TMTV

I've been talking with Greg about he and Barry coming on some of our monthly live Questions-Answers-Tips TMTV Zoom calls and talking about real railroading for model railroaders.

I'd love to hear the details about some of their novel approaches to switching an industry or working a yard. Not only would these stories be fascinating in their own right, but we all might learn a thing or two about how real railroaders might handle a job.

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From listening to Greg, I can tell you we modelers have developed a way of thinking about running trains that sometimes owes more to toy train thinking than to how real railroads operate.

Have real railroaders critique your design?

Greg and I have also talked about another idea: letting modelers bring a track plan for an industrial area, town, or yard – and then having Greg and Barry critique the design as the way a real railroader would analyze it.

Would a real railroad design the track routing this way? What small tweaks could be made to the design that might radically improve the operating potential? And what operating tips would they give on how to best work such a track arrangement?

To this end, we're starting plans to have Greg and Barry come

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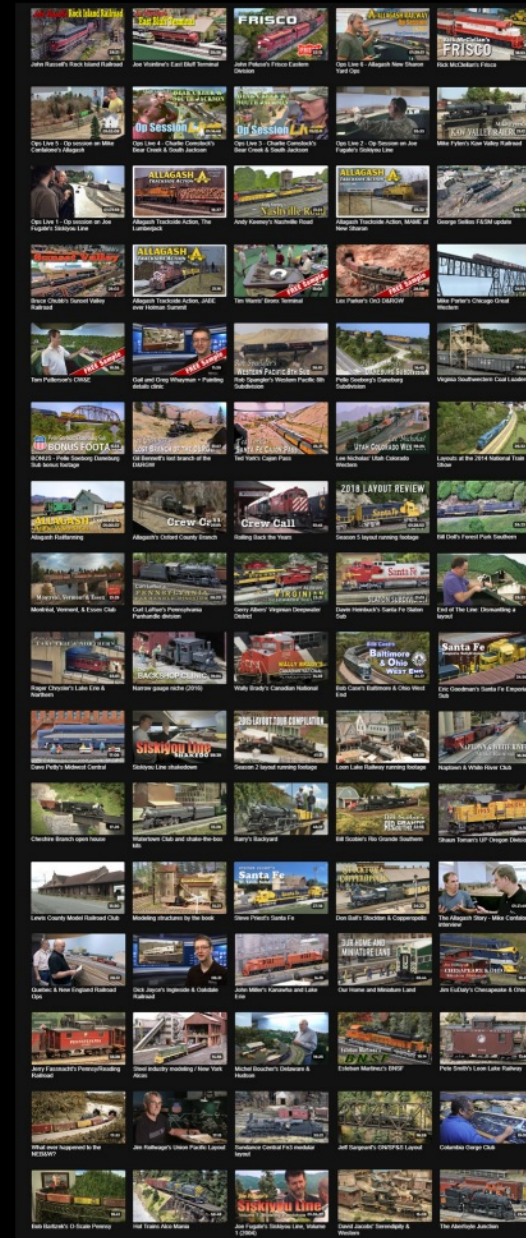
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onto a TrainMasters TV live session for just this purpose. Please use the comments link on this editorial to tell us whether or not you would be interested in such an MRH QAT live session on TMTV.

If we see enough interest, then we will invite modelers to submit their town, yard, and industrial area track plans and give them in advance to Greg and Barry to study. Then we'll bring Greg and Barry on to a TMTV live QAT session and hear the results of their analysis.

Also coming: Watch me build my layout

While I'm talking about Greg Baker, let me also mention the new TOMA layout building series coming to TrainMasters TV from Greg: *Watch me build my layout* (promo teaser below).

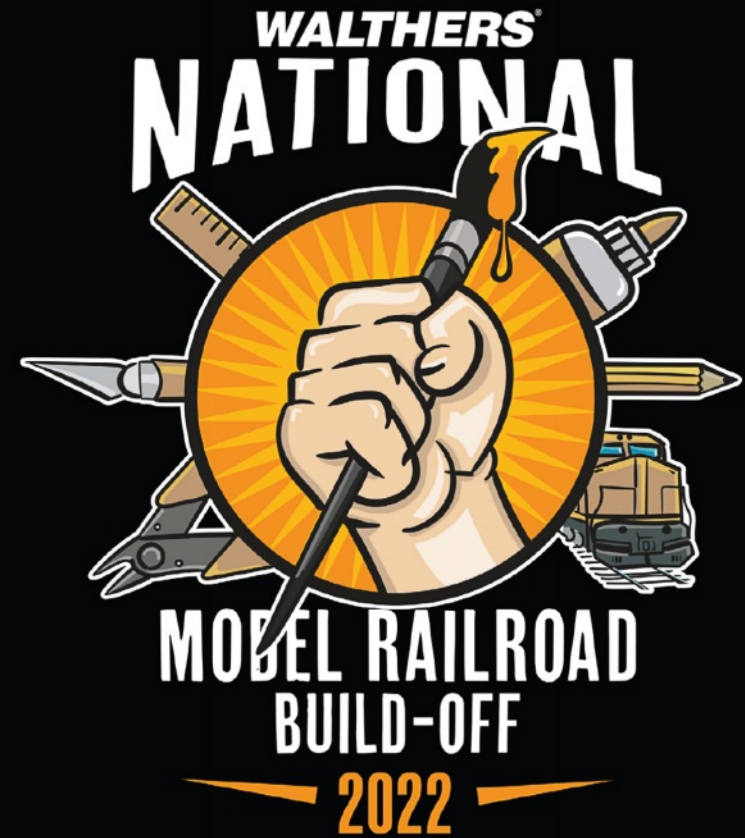
We hope to launch the first segment of this new layout building series late in May. Greg's building a new TOMA layout in his garage and we will be looking over his shoulder all along the way. Greg will cover everything from conceiving and planning the TOMA layout to how he's building it, step-by-step.

New TMTV series!
coming soon

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MRH Forum moderation poll

Every so often we like to check the forum temperature and make sure folks feel the MRH forum remains a friendly place to hang out.

Back in December, we finally moved to new forum software and have been learning the new and improved forum environment ever since.

Anyhow, we tried one version of the poll and several pointed out to us the poll could be better constructed so we sunset the first poll and stood up a new poll.

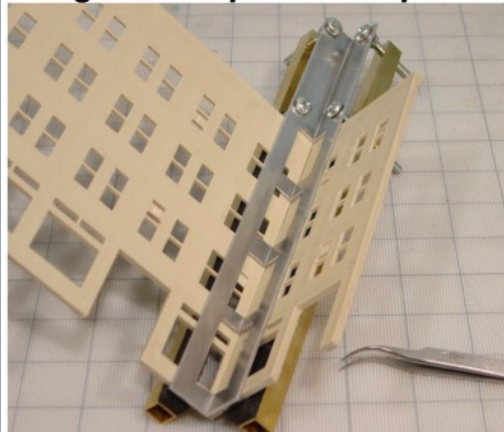
If you frequent the MRH Forum at all, please use the link below to vote, we'd like to hear from you:

POLL: forum.mrhmag.com/post/better-forum-moderation-poll-12325121

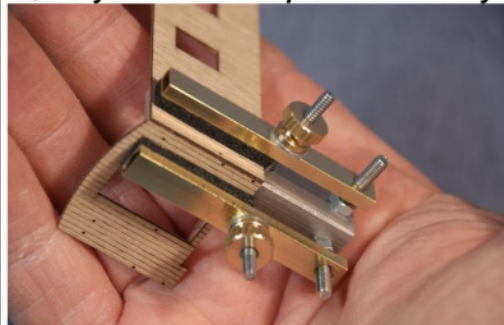
We're also inviting you to leave comments along with your vote. If you have feelings one way or the other, posting some details can be helpful.

As a general rule, we ask you to "play nice" when posting

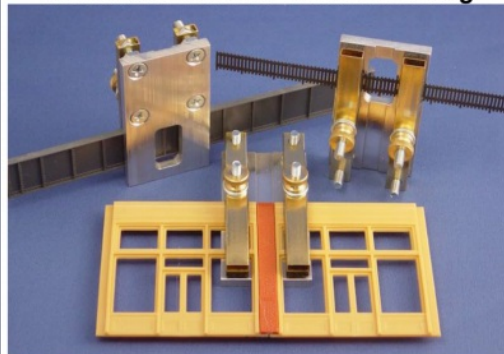
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PUBLISHER'S MUSINGS | 6

and focus on critiquing ideas, not forum members. We prefer not to censor posts, but we will step in if things get especially heated. If what was posted violates our "don't be mean" forum policy, and adds little to the insights of the discussion, then we may delete that content.

We also use private messaging to deal with those who cross the line instead of calling them out in public. We prefer not to embarrass anyone, but to keep moderation activities quiet and allow the conversation to focus on our main reason for existing: talking about model railroading and having fun with trains (the *MRH* slogan).

For those who may not know, we have a detailed list of our forum guidelines here:

forum.mrhmag.com/post/mrh-posting-guidelines-1222591

We've developed these guidelines from 12 years of hosting the MRH forum. They cover what's allowed and what's not allowed in quite a bit of detail.

Charlie Comstock's Bear Creek layout update

We're thrilled to slowly be getting back into doing layout tours again. This month's cover story is an update on Charlie's layout, and later this month we hope to roll out a TMTV layout tour to go with this cover story.

Charlie lives about 40 minutes away from the MRH offices in Woodburn, so it's pretty easy to get over to Charlie's and bring out the video cameras and lights.

Being retired now, Charlie can spend as much time as he wants working on the layout. But as those of you who are retired know, you still have other higher priority things in life that still need attention such as your spouse and family.

Plus being retired, you may find your attention captured by other hobbies as well. Charlie talks about all this in his layout tour interview this time.

Every time I visit the Bear Creek, Charlie has something new to

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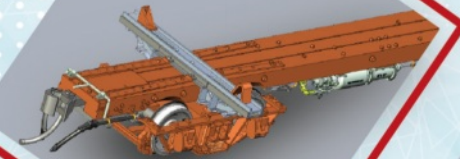
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We will announce further details as the project progresses.

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show me. Recently, he's been working on scenery and structures, slowly converting that Plywood Pacific into a gorgeous model railroad. I'm a sucker for Pacific Northwest scenery, and Charlie's freelanced SP flavor to his 1952 era layout scratches an itch that I can't scratch with my own 1980s era Siskiyou Line.

Charlie even has the Siskiyou Line branch on his layout, so I can imagine his 1952 era trains beating the rails down my own Siskiyou Line route in my mind's eye. ☑

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Most liked articles in the [March 2022 issue](#) of MRH are:

- 1st** Blending turnback curves into the scene
- 2nd** Modeler's survey of glue, part 2
- 3rd** Super-detailing a ScaleTrains gondola

Most liked articles in the [March 2022 issue](#) of *Running Extra* ...

- 1st** Getting Real: Modeling train crew communications
- 2nd** Limited Modeler: One town layout modeling
- 3rd** New locomotive tuning tips

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Model Railroad Hobbyist | April 2022

Compiled by **JOE FUGATE**



CP Rail's Newport & Lyndonville Subdivision

MRH forum member **CP Rail Vermont** (Neil S.) maintains a blog with regular updates about his photogenic CP Rail layout.

Neil's latest project was refinishing this D&H RS3. Neil posted:

"I clicked 'buy now' last week on a Bowser RS-3. It was kind of a sin to remove its beautiful blue and gray, but I love the D&H of 1981-82, so it had to be done..." Nice job, Neil!



View the full thread on the MRH website

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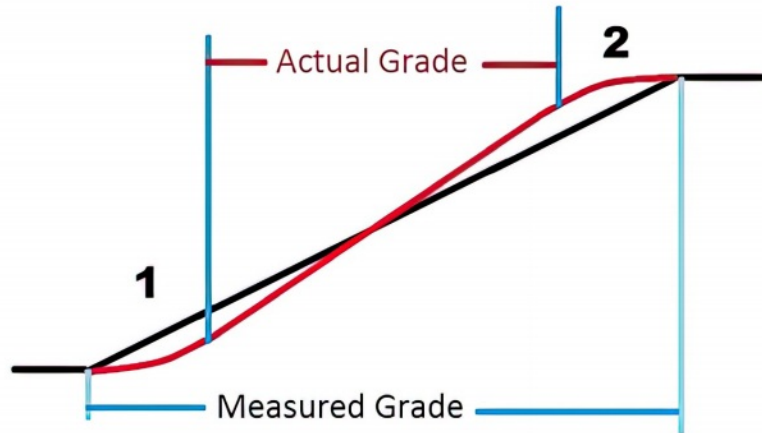
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Actual vs Measured Grades Comparison



1. MRH forum member **Oztrainz** posted this diagram clearly illustrating how needed vertical curves at 1 / 2 can make a layout grade steeper than expected.

Remember the vertical curves on a grade

MRH forum member **Oztrainz** (John G.) posted the diagram above on **Daboosailing's** On30 layout thread while discussing grades.

"Things to watch out for when building a grade:

- Vertical curves coming on and off the grade. These eat a lot of horizontal distance if they're gradual enough to prevent uncoupling.
- The difference between a 'measured grade' between 2 points that includes vertical curves and 'actual grade' between vertical transaction curves."

That's some sage advice. Check out the full thread for lots more.

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



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The Seattle/Tacoma area has many fine layouts in most scales and gauges to visit (over 30 so far). There'll be clinics from experts to inspire you. A host of outside activities are available. And friends to connect with again.

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BEST OF THE MRH WEBSITE | 3



2. MRH forum member **Mustangok** recently redid his garage layout with the intent of building a new switching layout in HO.

What can you do with 12" in HO?

MRH forum new member **Mustangok** (Robert B.) asked the forum members to weigh in with the pros and cons of a 12" wide shelf layout concept he has.

"The railroad is a short line of approximately 1980s-90s vintage that serves small concerns west of the North American geographic feature called the Cross Timbers, also known as Ecoregion 29 (Central Oklahoma/Texas Plains). Commodities that originate in the region include sand, gravel, stone, frack sand, paper, grains, lumber, etc."

Several forum members have offered Robert some excellent advice. Limited layouts like this tend to be quite common, so having a thread that discusses all the considerations for making the most of such space is well worth a read!

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

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3. *MRH* forum member **johncaff22** traces lines connecting newly installed helix fascia with his lower and upper levels as part of a recent multi-day “train camp” layout work session with a friend.

Train camp 2022?

MRH forum member **johncaff22** (John C.) maintains a journal/blog on the *MRH Forum* about his UP Cascade Subdivision layout construction progress.

“Without a doubt, model railroading is better with a few friends. This winter I hosted my good friend and fellow model railroader Cam Nealy for a few days to work on the Cascade Sub and run some trains.”

John posted a number of photos of him and Cam working on various layout building projects.

“Train Camp 2022 was a resounding success and something I hope to continue into the future!”

Check out John’s journal/blog and follow along!

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

Creative ideas for gondola scrap metal loads

Every so often, someone will start up a “show us your ____” thread, This time, it’s scrap metal gondola loads ...

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

4 (right). *MRH* forum member **Blshoop** (Bryan S.) kicked off this thread with his scrap metal load shown at the right here. Bryan got these lathe and milling shavings and chips from the maintenance guys as his work. “They’re sharp, so do take some care,” Bryan cautions.

5 (below). *MRH* Forum member **Dom Bourgeois** posted the extremely realistic load below, made using scraps of paper and cardboard! He added some dirt for texture, and painted things up to look rusty. Very nice!



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NEW PRODUCTS FROM
BACHMANN, TRANSPARENT TAPE
WINDSHIELDS, AND AN INTERVIEW WITH
JOE FUGATE ...



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PHOTOS AND VIDEO OF SUPERB MODELS

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THIS MONTH JENNY KIRK DEMONSTRATES TECHNIQUES FOR SOLDERING DROPS, wires, and decoders; Bachmann's vice president Larry Harrington shows some new products, Mike Budde demonstrates using transparent tape for vehicle windshields, and Ken interviews Joe Fugate about what's new at *MRH*.

Soldering techniques with Jenny Kirk



1. Jenny Kirk demonstrates soldering techniques for model railroaders.

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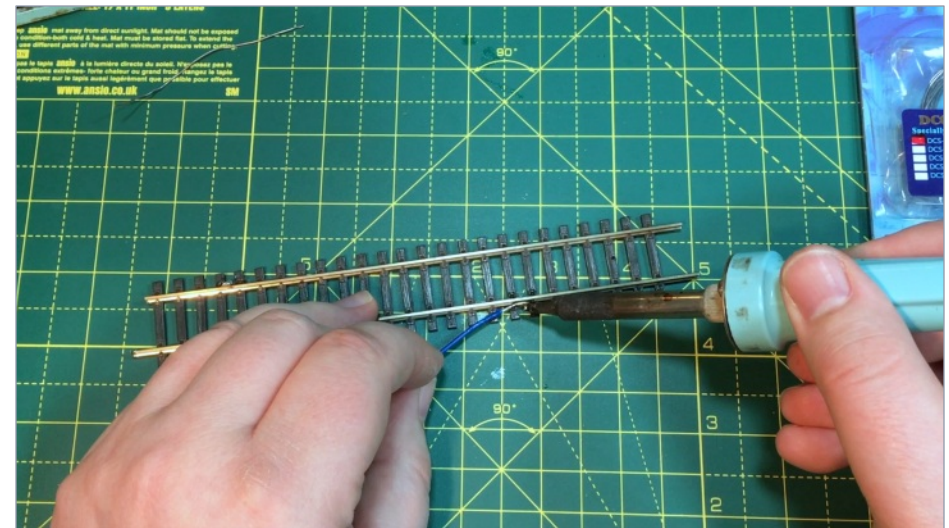
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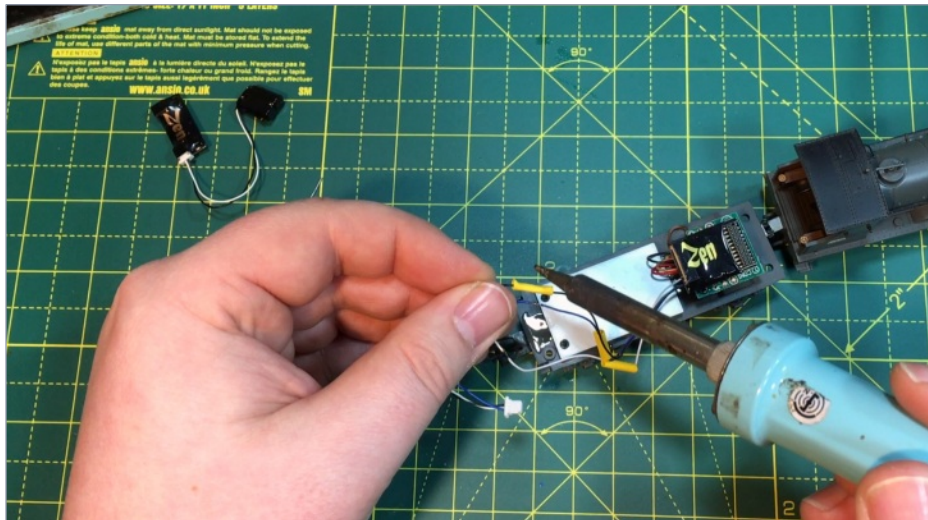
2. Jenny recommends DCCconcepts products for soldering.



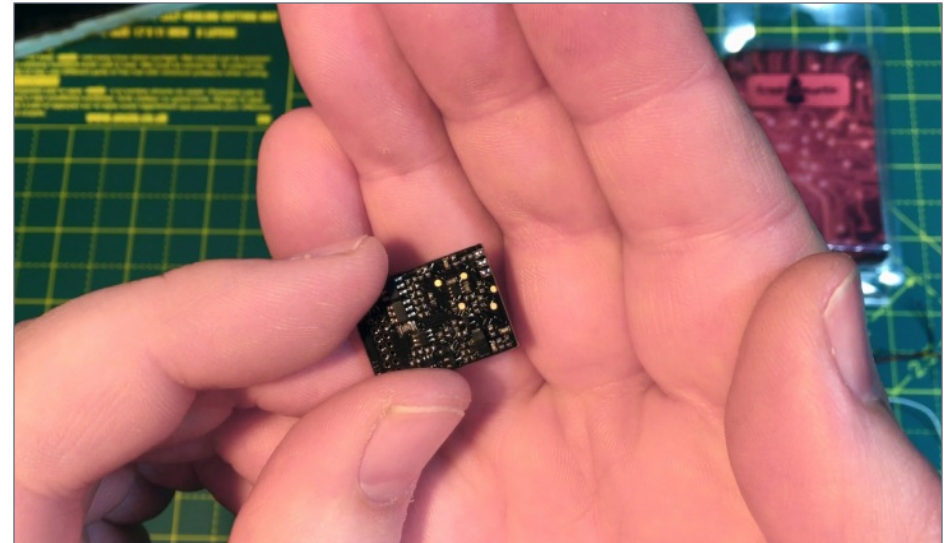
3. Jenny shows how the proper application of flux and using a soldering iron of 60-80W can make a neat and strong job of attaching a wire to the track.



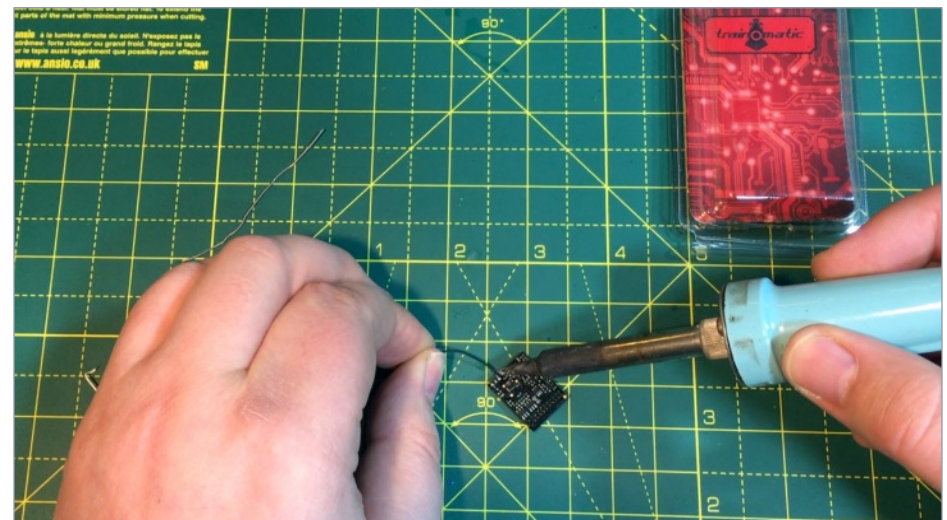
4. Jenny shows how to strip, tin, and solder wires together.



5. After the wires are soldered together, Jenny uses heat-shrink tubing to insulate the connection.

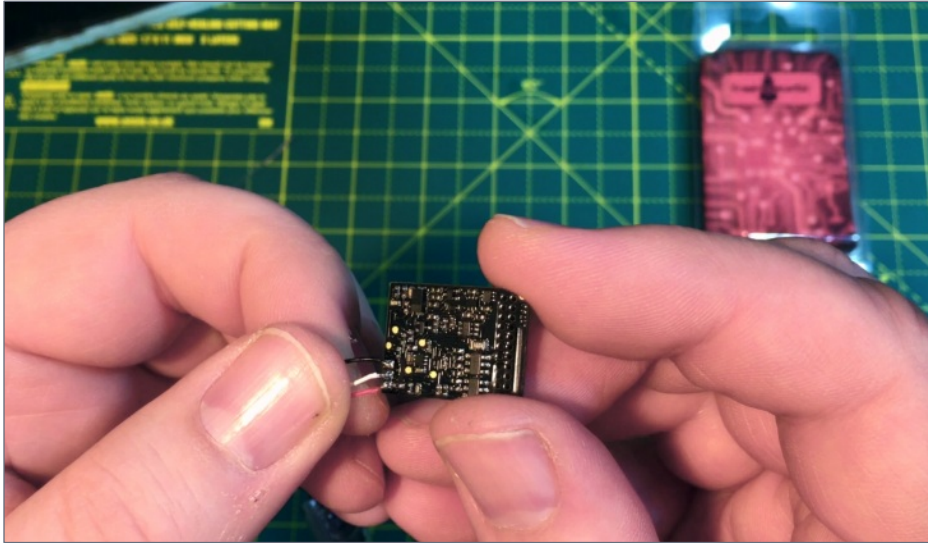


6. Decoders and other electronics frequently come with solder pads that require tinning before a wire can be soldered to them.

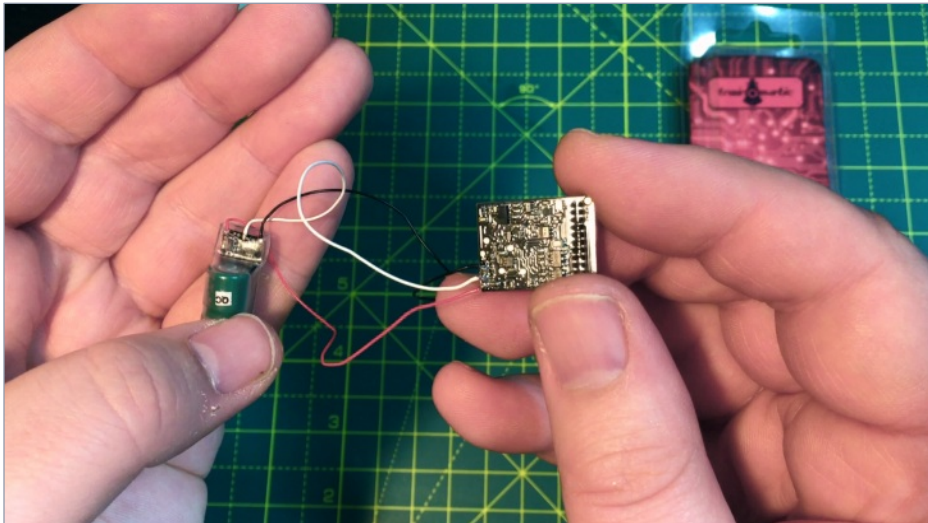


7. The rule with soldering circuits boards is to get in and out quickly, taking care not to create solder bridges between circuits.





8. With proper care, wires can be strongly soldered to a circuit board or decoder.



9. With the wires between the stay-alive capacitor and decoder securely soldered, the decoder is ready for installation.

New products from Bachmann



10. Larry Harrington of Bachmann joins Ken via the internet to show off the new 2022 catalogs, the 50' express reefer, and the 55' coil car. They also discuss the new concrete-tie EZ-Track product.

Making vehicle windows with transparent tape



11. Mike Budde demonstrates how he uses transparent tape to create windows on an assortment of HO scale vehicles.



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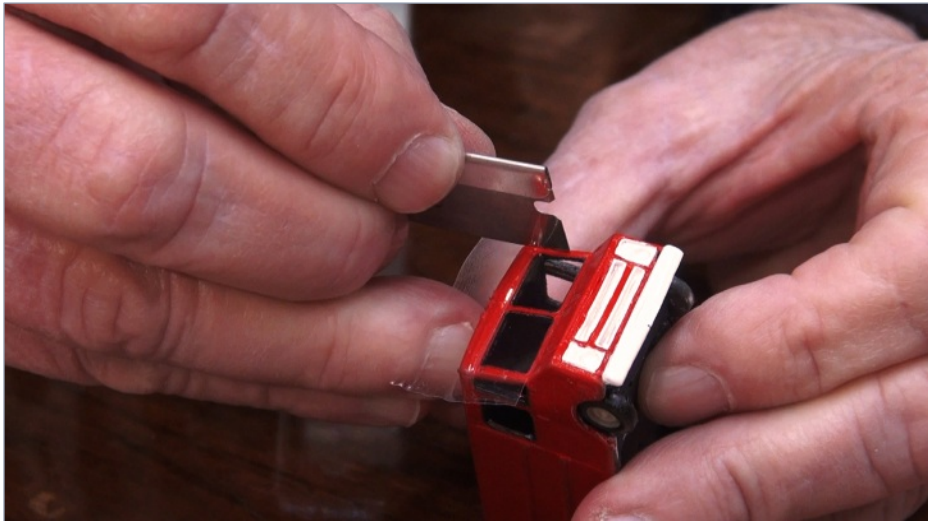
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12. After laying the tape across the windshield opening, Mike burnishes it into place with a toothpick.



13. Mike trims the overhanging edges off with a single-edge razor blade.



14. After slicing off the edges, Mike carefully pulls away the excess tape.



15. A more complex curved windshield involves starting with a piece of tape that has been cut with a curve at the bottom.





16. Getting the bottom edge aligned properly can be difficult.



17. Mike burnishes the tape into place.



18. Mike trims off the excess tape.



19. Mike describes how his friend John Tyson scuffs the edges of the window openings with fine sandpaper to avoid having paint pull up when the modeler peels the tape off the edges.



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20. Finally, Ken interviews Joe Fugate on the latest developments at MRH, including the new *MRH* forum software, *MRH Running Extra*, TrainMasters TV, and how Model Trains Video became *MRH Media*.

For the full video of Jenny Kirk's soldering techniques, Bachmann's upcoming products, Mike Budde's method of adding clear windows, and the full interview with Joe Fugate, click the video link at the beginning of this article.

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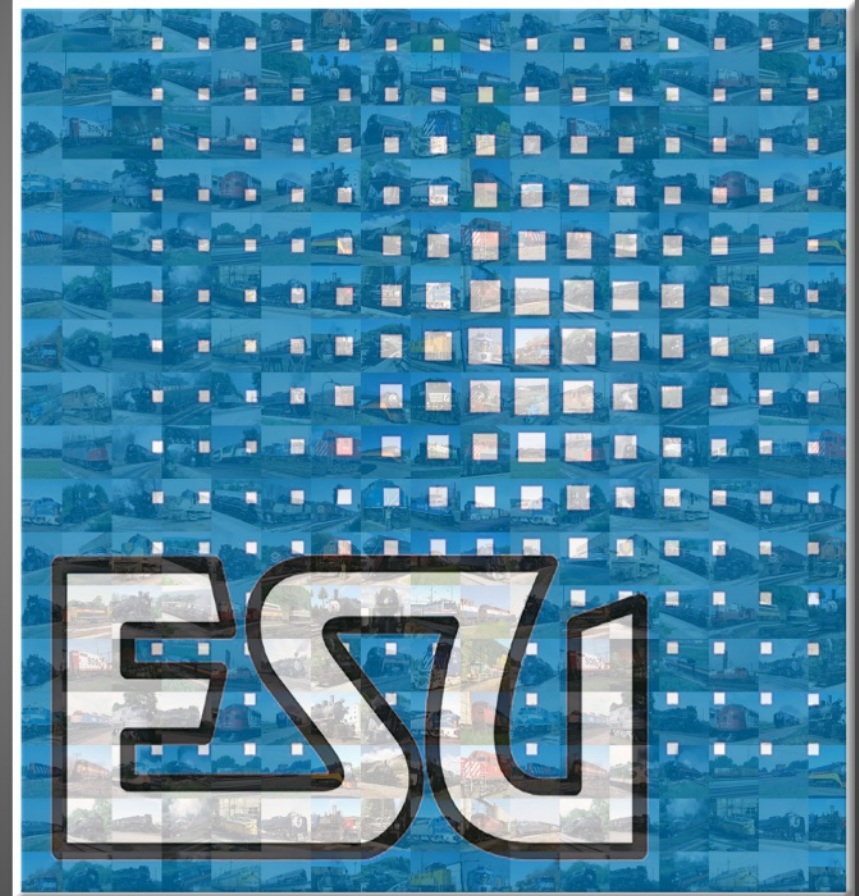
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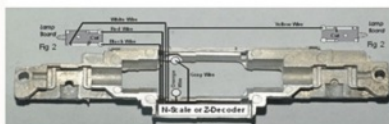


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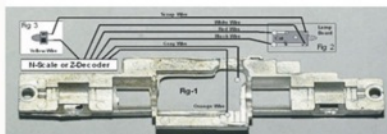
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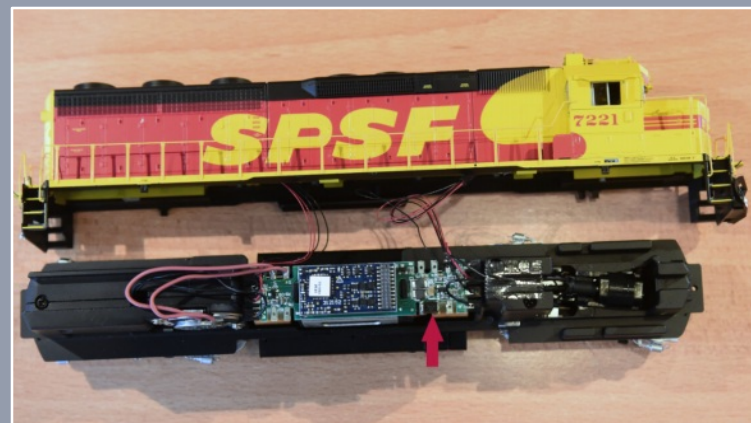


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Protecting decoders from track shorts



Electrical
Impulses

Model Railroad Hobbyist | April 2022



ROY DAVIS FINDS A METHOD TO AVOID LOSING A DECODER IN A DCC MISHAP ...

AT THE LA MESA CLUB'S EXHIBIT OF THE TEHACHAPI PASS in the San Diego Model Railroad Museum, we run our trains hard! We run them continuously five hours per day, four days a week – down from six days in non-pandemic times. We like to put on a good show for the paying visitors.

Our exhibit is not the usual flat, circular run. It is an 1800-foot run end-to-end, with a 12-foot climb and descent on the way, on which locomotives haul prototypical-length trains of up to 100 cars. That is a lot of wear-and-tear on model trains designed for occasional use on an easy home layout.

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PROTECTING DECODERS FROM TRACK SHORTS | 2

We recently staged a 36-hour Timetable & Train Order session over a three-day weekend. Seven locomotives failed, five of which suffered decoder failures. We have long suffered random decoder failures, but five in one weekend spurred me to investigate this a bit more.

Of the five decoder failures, three were permanently damaged and needed replacement. The other two survived but lost their programming. We needed to reprogram them before they would work again.

Most decoder failures are traceable to a locomotive involved in a short circuit on the tracks. These shorts often result from the locomotive derailling or running afoul of a switch lined against it. The tribal lore is that the short causes a voltage spike on the track that leads to decoder failure.

In fact, the two decoders that physically survived had transient voltage suppressor (TVS) diodes across the track inputs to the decoders, and the decoders that burned did not. TVS diodes protect a circuit by limiting the voltage to a preset level. If the voltage surges, the TVS can absorb a large amount of excess energy to protect the circuit beyond.

Many digital devices rely on TVS protection, and every computer USB port uses a TVS device to protect circuits. Clearly, the TVS was helping to preserve some of our locomotive decoders, but not enough to preserve their programming. I had to dig deeper to find out what we were missing.

I thought about the source of the voltage spike when the track is shorted. Such spikes are usually the result of a magnetic field quickly collapsing.

The common assumption that track inductance causes this inductance did not make sense to me as an electrical engineer. There is not enough inductance in the rails and associated wiring to damage much.

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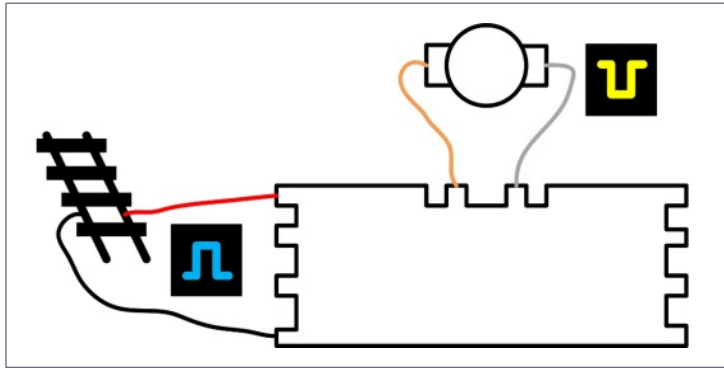


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1. This is a simplified diagram of the test configuration I used. I have overlaid the diagram with oscilloscope trace readings for the DCC signal in blue (right) and for the motor in yellow (top) that denote the patterns of normal operation.

However, the motor, a hunk of iron and coiled copper, has plenty of potential inductance. The motor's magnetic field could store a lot of energy. There is only one way to find out where the culprit was, and that is to set up a test!

I used an NCE DA-SR decoder as the test subject, a model that has some history of failure on our layout. I used a long coil of red and black wire between the booster and the decoder to simulate the track and its inductance. I set the throttle at step 14 for the test.

I monitored the track DCC signals with an oscilloscope. Since I suspected the motor to be the bad guy, I connected a second oscilloscope probe to the gray and orange motor wires. I set the oscilloscope to give me voltage readings for the beginning of a short [1].

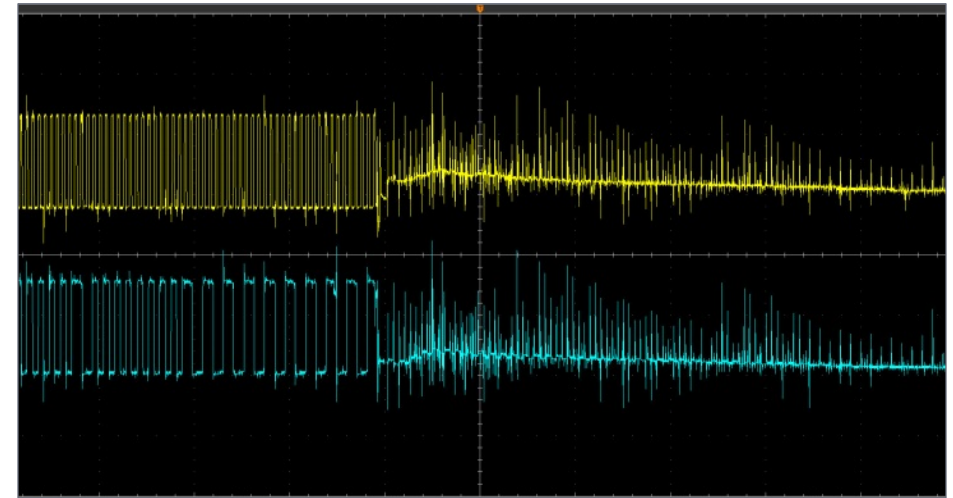
I intermittently touched a short piece of wire to the track terminals to create a short, removing it again before the booster circuit breaker could kick in. The short piece of wire got even shorter from all the arcs and sparks during the tests. I

felt badly for abusing the booster and the decoder in all this, but somebody had to do it.

Within about 10 milliseconds of the short's beginning, or 1/100 of a second, the DCC signal dropped to almost zero volts. Switching noise from the NCE booster's internal voltage regulator left a pattern of thin spikes, indicating it was running on a light load, but they were not big enough to be a potential decoder killer [2].

I repeated the test many times, looking at the beginning of the short. I never saw much of concern, so the problem must have been elsewhere.

I changed the oscilloscope settings to trigger on the release of the short, and there it was! The track voltage on the blue oscilloscope trace went from near zero to a normal DCC signal



2. The beginning of the short is about 40% of the way across the oscilloscope screen. The track voltage (blue) dropped to near zero almost instantly, with only the switching noise of the NCE's internal power regulator remaining as narrow spikes. Though they will be the subject of a future cleanup effort, they are not decoder killers.



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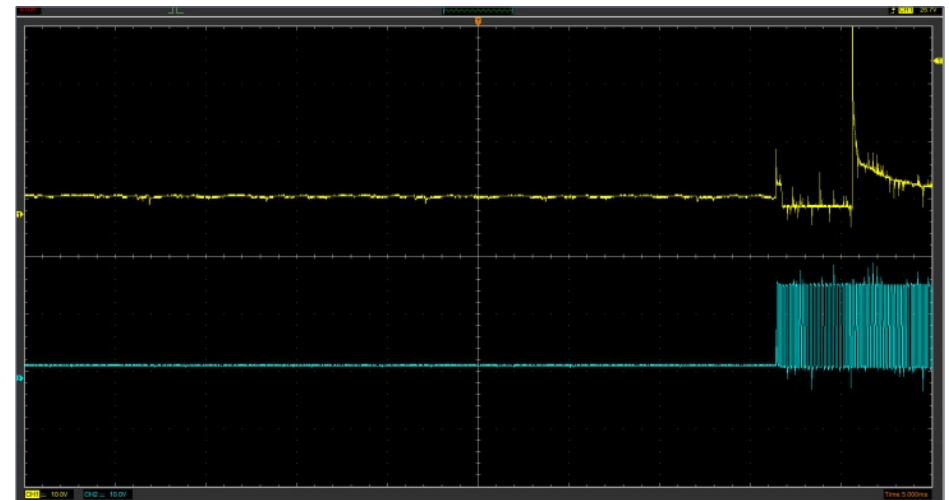
PROTECTING DECODERS FROM TRACK SHORTS | 5

without a voltage spike. By contrast, the motor output of the decoder bobbled around for about four milliseconds before giving a voltage spike of at least 35 volts on a circuit that should run around 12-14 volts [3].

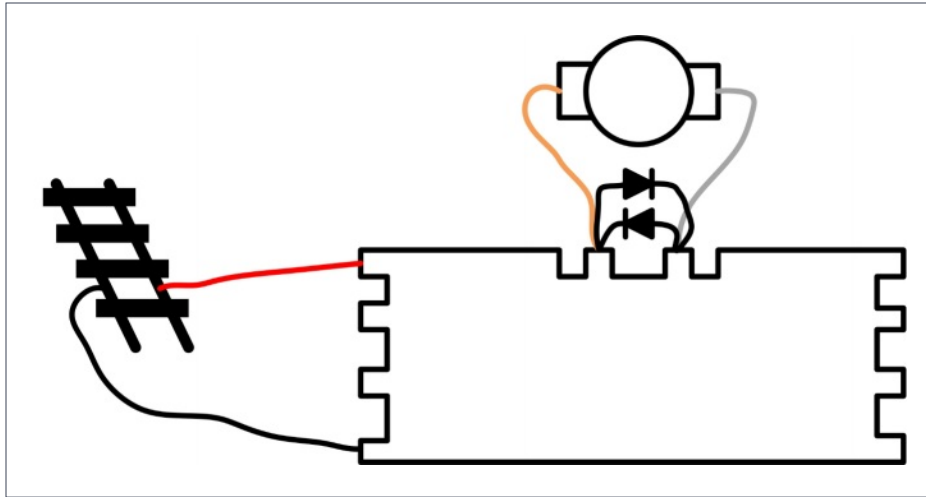
I ran this test many times with very similar results. I was surprised it did not destroy the decoder, though this may have been because the motor was not under load. I am sure that the voltage spike on a train pulling hard uphill would have been worse than my free-wheeling motor in my test setup.

A TVS installed across the motor output of the decoder seemed like the right thing to try. Since this back-to-back configuration is so often used, a single TVS device is available, called a bidirectional TVS, that boils the solution down to just one thing to solder onto the decoder terminals [4].

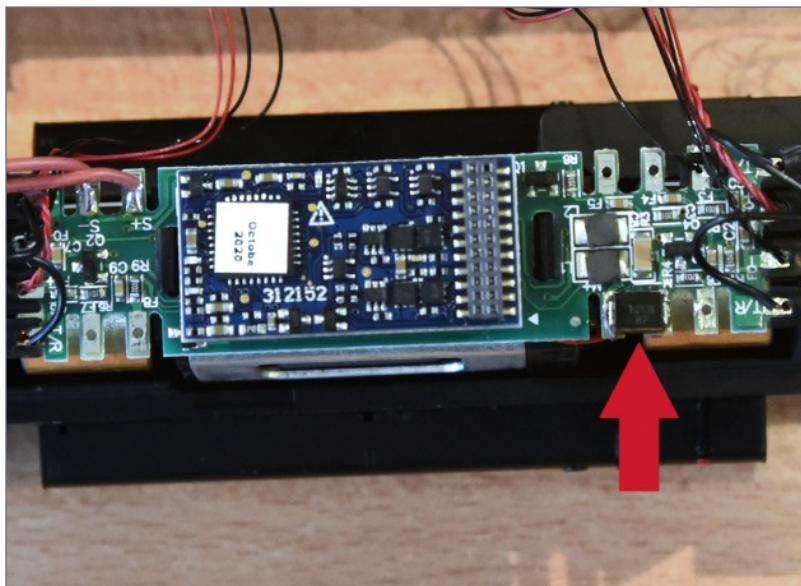
I used part SMBJ16CA-13-F from Diodes Incorporated. The part is readily available from electronics parts distributors like Digi-Key. It is a surface-mount device with no leads, but the



3. The release of the track short is about 85% of the way across the oscilloscope screen. Whereas the track voltage resumes its normal DCC pattern almost instantly without spiking, the motor voltage spikes to at least 35 volts.



4. This diagram shows a TVS device connected across the motor terminals of the decoder. This one part contains two TVS diodes wired in what's called a "back-to-back" configuration.



5. This is a TVS diode part from Diodes incorporated, part SMBJ16CA-13-F.

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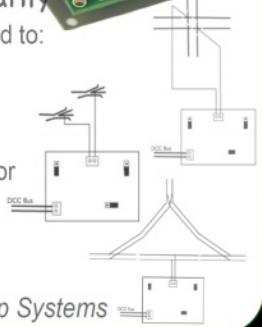
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PROTECTING DECODERS FROM TRACK SHORTS | 7

spacing is just right to sit across the motor terminals of most board replacement decoders [5].

Soldering both terminals of the TVS to the decoder's motor terminals first, then soldering the motor leads, one at a time to the terminals helps keep the TVS in place.

Some TVS parts are available with leads that are easier to connect to decoders with free-hanging wires instead of terminals. We run our track voltage at around 13 Volts, so the SMBJ16CA-13-F, designed for circuits up to 16 volts, is a good choice. You want the TVS to be rated at least a few volts above your maximum track voltage so it only clamps on large voltage spikes.

I repeated the test many times with the TVS on the motor terminals of the decoder. As expected, the DCC signal recovered smoothly and quickly from the short just as before. With the TVS in place over the motor terminals, the motor voltage also smoothly recovered to normal levels, without bobbling, and without the spikes we observed previously [6].

The next step was to install TVS devices on the motor terminals of many of our locomotives and run the heck out of them for a while. So far, we have field-tested a handful of locomotives with TVS devices, including purposely running them into shorts. The test results point to a much happier outcome. ☑

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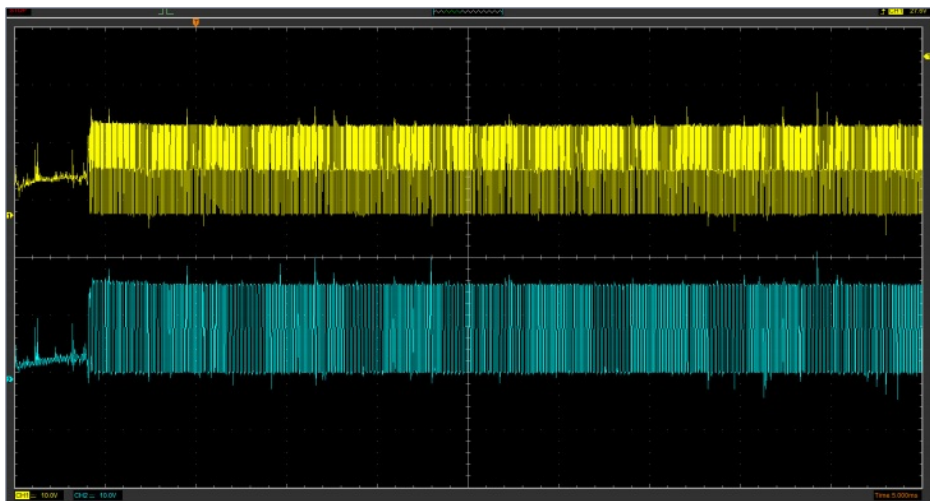
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6. This is an oscilloscope reading of the short release (about 10% across the screen) with the TVS diode in place over the motor terminals. Both the DCC track signal (blue) and the motor voltage (yellow) registered a smooth recovery.

?

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Roy Davis



Roy is very recently retired from a career with a major producer of cell phone chips. That involved many trips around the world, solving noise problems, and just plain making things work.

He is now the chief signal maintainer for the Tehachapi Pass exhibit, by the La Mesa Club at the San Diego Model

Railroad Museum.

His grandfather was an engineer on the PRR. That lead to a Lionel layout in the basement when he was too young to appreciate it. Roy's senior project in electrical engineering school was the hardware interface between a \$50,000 minicomputer and a train layout, that could automatically run a dozen HO trains at once.

He got the bug again a few years ago when an out-of-town friend wanted to visit the model train museum. Now he spends more time under the layout fixing, and installing electronics, than running trains. The master controller for the La Mesa exhibit is now far more powerful than that minicomputer, and cost \$19.95. ■

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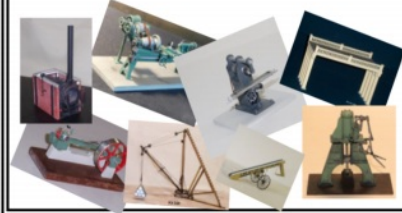
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Bear Creek & South Jackson update



MRH VISITS CHARLIE COMSTOCK'S
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Model Railroad Hobbyist | April 2022

Photos by Joe Fugate unless otherwise credited



MRH: Charlie, let's start at the beginning – how did you get into model trains?

Charlie: I got interested in trains when I was three years old. We lived in Massachusetts and behind the house was an old Boston and Albany track. One day I escaped and found the railroad track. Apparently, I was happily walking down the track and some people found me, pulled me off the track and we watched as a big black thing went by.

I remember getting a ride down to the grade crossing and I'm guessing that was a hand car crew. Then I got to ride home in a police car. I got upset because they would only let me run the siren one time! When I got home everybody seemed very excited, but I didn't understand why because I had a great time!

If you fast forward to when I was seven, we moved to Long Island, New York to a place called Huntington Station. That was not far from the Cold Spring Harbor Station on the Long Island Railroad.

Our back yard had a split rail fence right next to the Long Island Railroad. I used to hang over the fence and wave to the train crews going by.

About that time my dad started building a model railroad. He built a dog bone layout – he seemed to have a lot of fun with it. I tried to help, but of course my help wasn't much help at my age.

Fast forward to 1968 and we were living in the Bay Area of California – my dad decided to take us to an open house at the East Bay Model Engineers Society.

The club was in a ginormous Santa Fe warehouse in a bad part of Emeryville at the east end of the Oakland Bay bridge. I was hooked – I loved it!

I went to the hobby store and got an issue of Model Railroader magazine, the August, 1968 issue. I still remember that date clearly and that I got to join the club as a junior member. I was old enough, so I could drive myself over there and back again. And that, shall we say, set the stage.

MRH: Did you keep doing the hobby into your early adult life or did you go set it aside to get married, to kick off a career and so on like many modelers in their teens tend to do?

Charlie: Well years later, my wife asked me one day, "Charlie, what are these?" as she pointed to some boxes in the closet. The boxes included a Fine Scale Miniature kit and a couple of brass locomotives.

"I used to be interested in trains," I said, "It's a couple locomotives and a building kit."

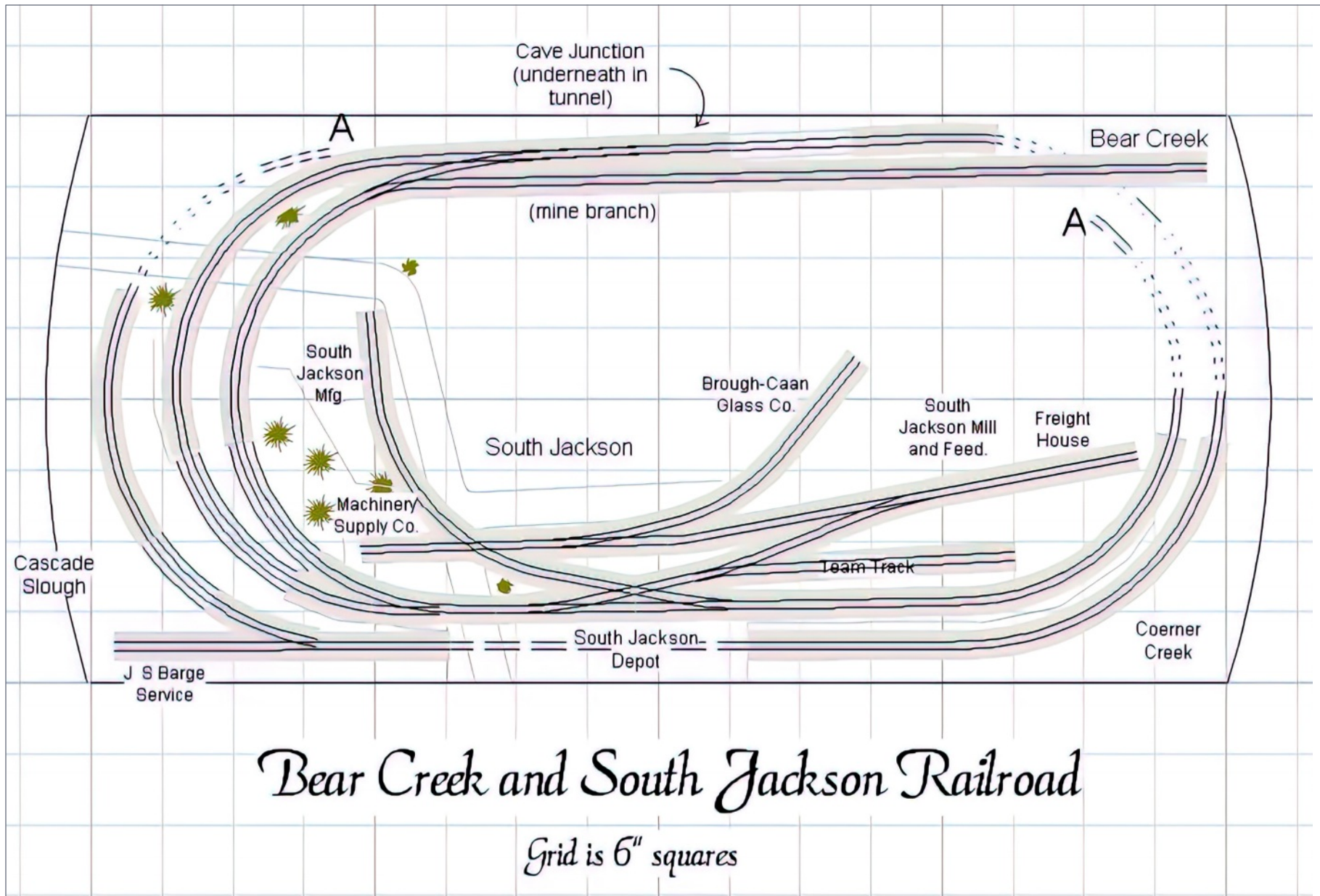
She didn't dwell on it at the time. I guess I didn't think much of it at the time either.

Then we had kids, and the kids got Brio trains, and I found playing with the Brio trains with the kids to be a lot of fun. They're powered by imagination and little fingers pushing the trains around. I started thinking, we should have some buildings to go with these trains.

So I jumped in the car and drove over to the Whistle Stop in Santa Clara, California. They had buildings in HO that seemed to be about the right size to go with the Brios. I bought a couple of kits and put them together.

Next thing you know, I was thinking: let's get a couple of pieces of flex track and a locomotive.

I come home with some flex track and a locomotive. My wife gave me a dark look.



1. The original “chainsaw” Bear Creek & South Jackson that was a 4x8.



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“You got what, and what are you going to do with those?”

At that point I think she began to understand the model rail-roader disease – it’s nearly as addictive as alcoholism at times and leaves you almost as stupid! I built a tiny switching layout in the spare bedroom of the house, which was also my office. I guess it was probably about 2-1/2’ x 6’ long.

When we moved up to Oregon, that layout came with me.

But now I had a garage big enough to build a layout. And so I built a 4 x 8 layout. It had grades and mountains on it. If you visit bcsjrr.com and click on My Layouts, you’ll find pictures of that first layout.

But I needed a name for it. So for political reasons, I came up with the Bear Creek and South Jackson, which has the same initials as Betty, Charlie, Sean, and Jennifer – with Sean and Jennifer being our kids.



2. This is a photo from the Bear Creek & South Jackson I layout circa 1997. A Southern Pacific NW2 switches C. Bandley Co. and South Jackson Mfg. Outbound cars will be sorted and left on the South Jackson siding in the back for the next freight to pick up. You can find a video of this layout on YouTube: youtu.be/Rdz8_vBw95M. *Charlie Comstock photo*

That’s how the Bear Creek name was born. That 4 x 8 finally went out the door since it had been a practice layout. Then the second Bear Creek took its place, occupying an entire stall in the garage.

MRH: So that’s Bear Creek II. How did you end up doing your current basement-filling empire, Bear Creek III?

Charlie: One day we were out driving around in the countryside – we like to drive around the the beautiful country out here in Oregon. We saw a sign "Land for sale". So we looked at this property, almost 13 acres.

As we’re standing down by a creek looking up the hill, I turned to my wife if she wanted to live here? She excitedly replied, “Yeah, yeah, yeah!”

“You know,” I said, “I’ll want a train room.”

She said, “Okay, I want an art room.”
“Deal.”

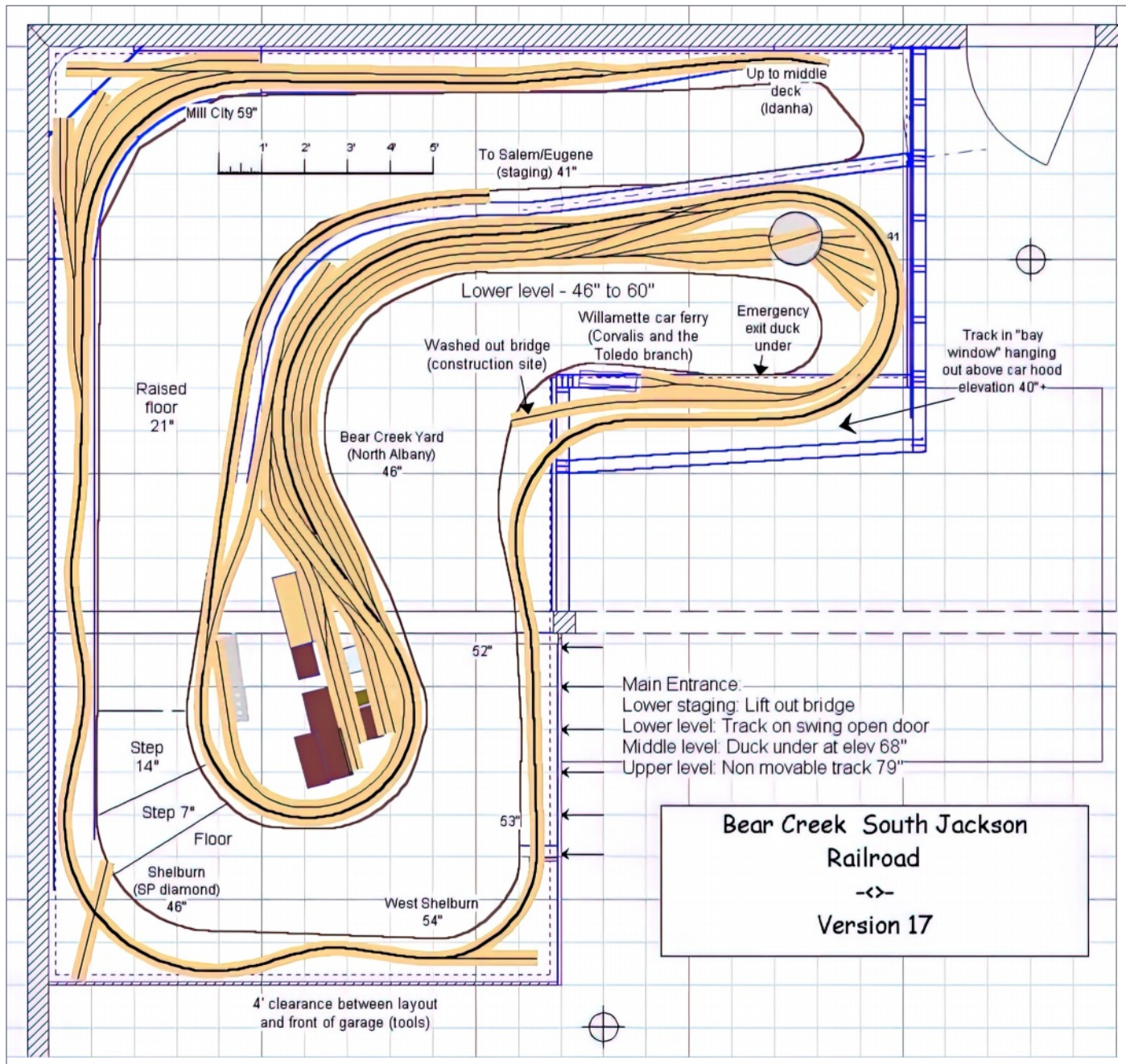
We did some research and bought the property. I had some fun and games with architects who didn’t have a clue what model railroaders want!

We finished the house, I got the layout room and we moved into the house in 2003. I brought part of the layout from the garage of the previous house with us. We managed to just barely get it through the doors into the new train room and put a couple of two by four cleats on the wall.

What had been Mill Creek on the previous layout became Mill Bend on this one. I hooked up a couple clip leads to a power pack and ran a locomotive – and voila, instant op session. By now it was early 2004.

MRH: So catch us up to where you are now.

Charlie: As we’re talking, I’m next to Junction City on the third Bear Creek and South Jackson. It’s now been 17 years and you



3. Track plan of the lower deck on the Bear Creek & South Jackson II, Garage Division. Not shown is the middle deck (Idanha) and upper deck (South Jackson yard and Pocatello staging). Also, below this deck was a staging level (Salem). The layout had a total of four decks fitted into roughly half of a two-car garage.





4. Brandon Thompson and Mike Baynes run a long train with helpers on Bear Creek & South Jackson II (circa 2002). You can sort of get a feeling for the length of the BCHE train here. The lead engines have already passed behind Mike's head while the helper isn't quite to the Santiam bridge at Mill City. The max length for this train is 30 cars plus locos plus hack. *Charlie Comstock photo*

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5. Another view of BC&SJ II (circa 2002). Brandon Thompson looks intent on watching the slack as he crews the helper unit shoving on the back of the Hauler East. Running a helper takes a fine touch: too little throttle and the train either doesn't go anywhere or can stringline cars onto the ground on the inside of curves – too much throttle and you can push cars off the track accordion style. *Charlie Comstock photo*

think I'd have it done by now. But I discovered model railroads are like a ranch or a farm. The work's never done on a farm. And the work's never done on a model railroad.

If you ever per chance should get it done, you immediately want to tear it out and start it all over again. I think there's a rule about that. You're not allowed to have a finished model railroad except for Jack Burgess. He he's got one and he seems happy with it, so more power to you, Jack!

Along the way I operated on Joe Fugate's layout and caught the proto ops bug. So this layout is definitely designed for proto-type operation.

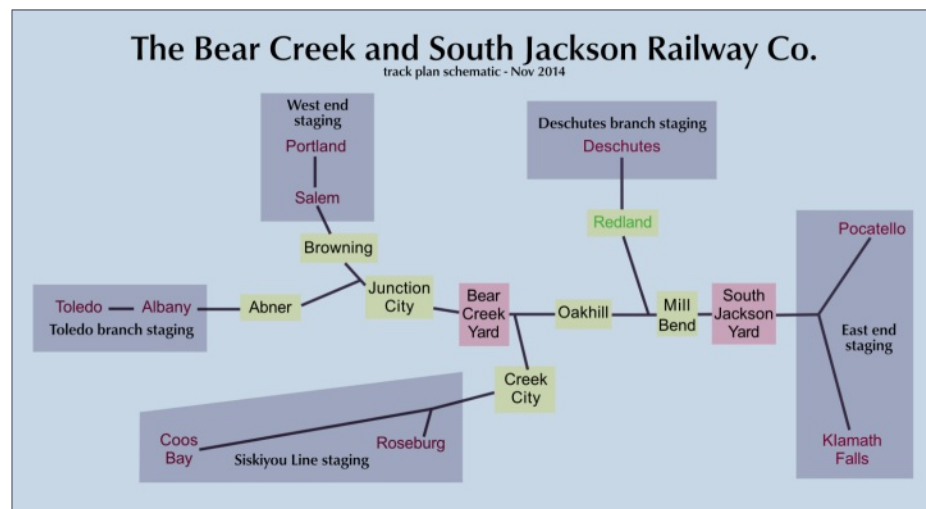


6. Here's a view of Bear Creek & South Jackson III since the center peninsula backdrop went in. Ops regular Jordan Dobson is giving a thumbs up as he's preparing to dispatch with a full crew at a special op session for the 2015 Portland NMRA convention. Or maybe he's just looking for a ride home? *Charlie Comstock photo*

MRH: We love ops, yes. How would you describe your layout to a brand new visitor who has never seen it before?

Charlie: The Bear Creek in a nutshell is a proto-freelanced layout. Probably more lance than proto. I've tried to use the SP as part of it.

The layout has a main line that's five scale miles long. I had a number of goals when I started building it. I wanted to have long runs between towns. I wanted the plan to be sincere, meaning you need to walk alongside your locomotive and the trains go through each scene only once. No twice around or



7. Charlie built this schematic of what towns connect where on the layout to make it easier for operators to get their bearings on his 1100 square foot Bear Creek layout.

three times around, and certainly not a spaghetti bowl. I wanted grades that featured helper operation.

I wanted large yards that serve to classify cars. I wanted a plan where through trains come out of staging. They go to the yards, they drop cars off at the yards. The yards sort them, puts them on local trains, or sends them over to another yard, which then puts them on local trains.

The locals go out to an industry. They switch the industry, they leave loads or empties depending on what the industry's demanding at that point. The local picks up the outbounds and takes them back to the yards. The yards then sort them and put them on through trains originating or passing through the yards.

I wanted branch line traffic because I think branch lines add a lot of operational interest. I also wanted it to be a layout where you can't see the next town from where you are now.

You can't cheat by looking around the corner to see if the coast is clear to go. I've got this schematic I made up of the layout to help operators see what connects to what [7]. So the layout basically runs from Salem, OR, and it runs eastward to Pocatello, ID.

Those destinations get represented by a couple of big staging yards. There's a 9 track staging yard on one side of the peninsula and a ten track yard on the other side. I call this the A side and that the B side.

MRH: That's a lot of staging, Charlie!

Charlie: Yes, it is. The A side handles the incoming trains. After trains have run over the layout, they come into the A side and then the trains leave from the B side. The layout has one major yard which isn't finished yet. Then there's another yard that is pretty much finished or close to it.



8. This view from the far end of the Bear Creek yard aisle also shows the new scenery (right wall) where the mainline and Siskiyou branch jump over lower Bear Creek.

Charlie Comstock photo

There's some long distances here. The track between Mill Bend and Oakhill is close to a scale mile and between Bear Creek yard and Oakhill there's over three quarters of a scale mile. The layout has some good some distance involved. It's nothing compared to the prototype, but then I'm not building in the Rose Garden, am I?

I did do a virtual version of this using the Trainz 2019 Railroad Simulator that's 105 miles long, but I digress.

The layout has three branch lines: the Deschutes branch, the Siskiyou branch which goes to Coos Bay and Roseburg staging, a the Toledo branch which goes to an unmodeled paper mill on the coast at Newport.

MRH: That's lots of operational variety!

Charlie: Yes, the idea was operations, but I also wanted scenery. See the TrainMasters TV video and the photos here to get an idea of what the latest scenery is like. Plus I'm showing some scenic highlights on the layout that haven't been published before now.

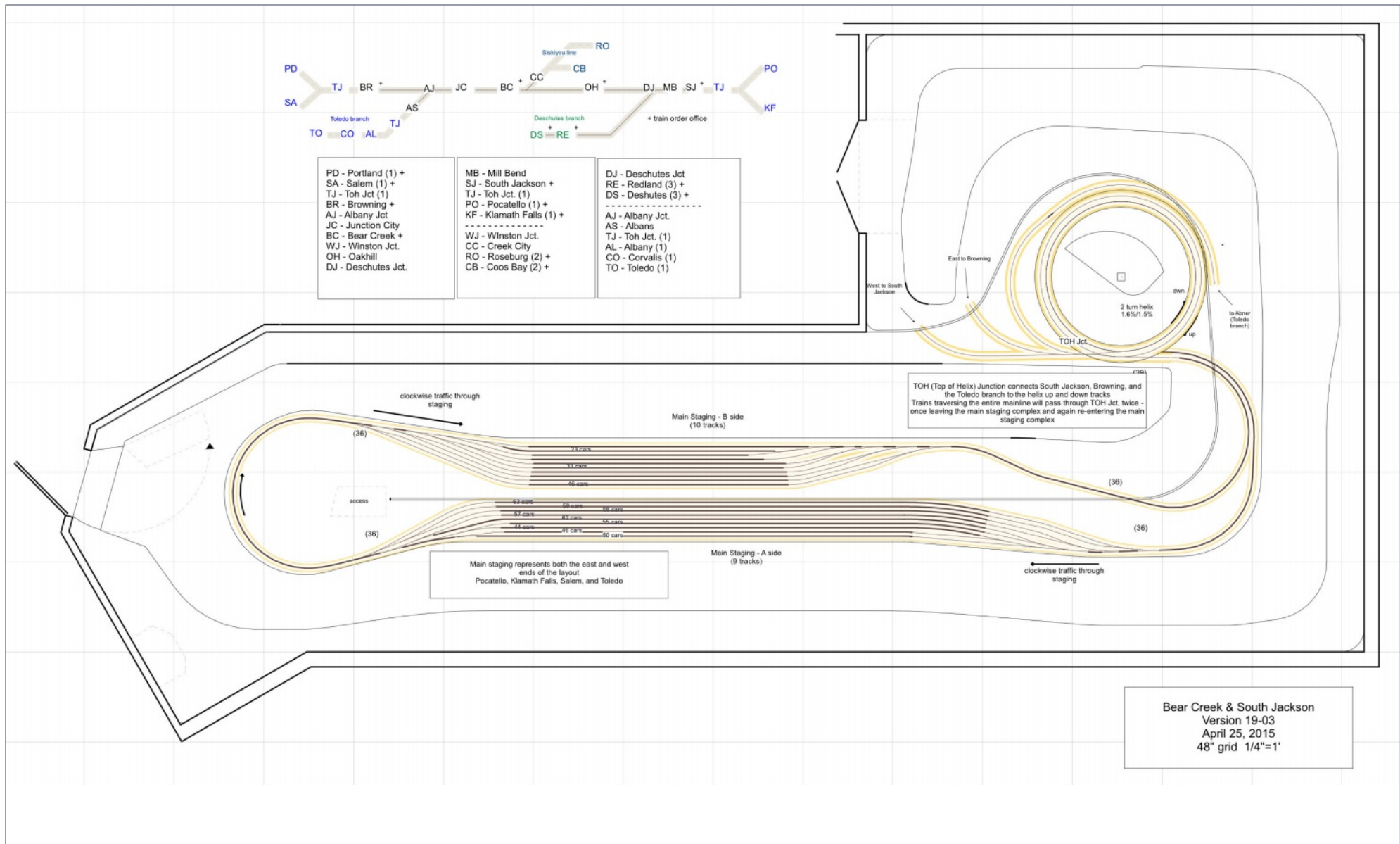
MRH: Why did you pick this particular region to model and why did you pick the circa 1952 era?

Charlie: Oh, the era was easy. I picked the era to model because I was born in 1952. So that's the year I'm modeling, although I'm not a slave to it. I have a few out-of-place freight cars on the layout that I like, so I said five years off is okay.

But most of them are date accurate, which saved me a lot of money too. I go to the store and see these new Kadee PS-1 box cars say, but they're 1954. So I can't use them. There you go, I saved \$25.

As for the region, it's the region I'm in here. I like to model what I see, and other people like to model what they don't see.

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9b. Bear Creek & South Jackson staging level. You can get a fully zoomable PDF of this plan in this month's bonus downloads [mrhmag.com/magazine/mrh2022-04/bonus-extras].



MRH: How did you develop the track plan? Was it easy or did to go through a lot of iterations?

Charlie: I always iterate my track plans a lot. I collaborated with Don Mitchell on the track plan a lot. He's been in a hobby for a long time, many will recognize his name. Don is a pretty hardcore layout designer, up there with John Armstrong back in the day.

Don was on the the LD SIG email list. So I started asking questions and Don answered them and made suggestions. Then I'd come back with other questions. I guess he must have thought that I was worth a shot, and I found him helpful to dialog with. I'd throw out ideas, and then he'd make comments. So it went back and forth like that.

One problem with designing layouts and that is you can't really run it and you can't really see what it's like to operate on until it's built, which puts you behind the eight ball in terms of doing it. As much as I like the Bear Creek, it's got a somewhat fatal flaw. Well not really fatal, but it's darn inconvenient, shall we say. We'll get to that later.

MRH: You designed this layout with Third Planet, right? I thought Third Planet lets you run trains.

Charlie: Third Planet will let you run trains, but it's, it's not really what you think. Even using their 3D simulation of a layout, it's not like being there. You can't really tell, for instance, whether the lower deck is overshadowed by the upper deck, because it's hard to put your virtual head in the right place.

And when you're running trains in Third Planet, you can't really simulate multiple operators and meets. When I run a full session here, I've got a yard master for Bear Creek, and a yard master for South Jackson yard. We've got the local switch crew for the Redland switching area with something like 47 car spots.

So they each get their own dedicated crew. I've got six road crews, and then we've got maybe a helper crew that shows up.

Trying to run that many trains by yourself on any sort of simulation, is nearly impossible, even in a program like Trainz, which is designed to run lots of trains on it.

Plus in a 3D simulation of a model railroad, you never have to deal with aisle problems. Things like crews passing in an aisle that's too narrow or a place where you need to get from here to the other side of the backdrop. You just ignore that real world stuff in a simulation program.

You can whip around the other side of the peninsula really quickly, never realizing the magnitude of the problem. You can get too many trains coming into a yard and overwhelming it, or if the train lineup is too sparse where the yardmaster is just sitting there bored because they don't have any trains coming in, they have all the yard work done.

MRH: That's a great point. A 3D simulator won't show you the real world layout problems like that. How do you account for that when designing a layout so you're not blind sided?



10. Here Jeff (front) and Craig (back) continue their block swap at Redland on the Deschutes branch, affectionally known as "the land down under." Charlie Comstock photo

Charlie: No you don't see that stuff in a simulation. There's no substitute for actual layout ops experience. If you're planning to build a layout, especially if you're planning to build a large layout requiring a lot of time and resources, you don't really know if it's going to work. Get yourself real layout ops experience and go to every op session you can get yourself invited to.

Talk to everybody about layout design that you can talk to. Find somebody like Byron Henderson who is a professional track planner. Visit his website at layoutvision.com.

Join the Layout Design SIG, and go to national conventions. You'll find a room for the OP SIG and for the LD SIG. LD stands for layout design, and SIG for special interest group. OP SIG is for the people crazy enough to try to run their layout like it was a real railroad.

That experience will help you form ideas on what you like and what you don't like about operation. I mean, if you hate switching, there's no point of building a layout that's got 15 towns with detailed industries on it because you're never going to operate it. But if you love switching, then you want to make sure you include enough switching on the layout.

You don't want to get bored with it before it's even remotely finished. Get experience.

MRH: Did you do that?

Charlie: I tried to, but it turns out in 20-20 hindsight, I still didn't quite know what I was doing when I started this. You think you know what you're doing and by the time you find out that you should have done it different, you've got so much built already.

You're reluctant to tear it out and redo it. So now you've got a dilemma. What do you do? Do you start over again or do you just keep plunging along and say, it'll be okay. It'll be good enough.

MRH: Well, you do have the advantage. This is not your first layout.

Charlie: This is the third Bear Creek and South Jackson and counting that itty bitty switching layout this is my fourth. Plus my dad started me on a 4 x 4 sheet of plywood with a loop of track on it. But I don't think that really counts as a layout.

MRH: So those four layouts: did you feel like you learned a lot that's helped make this layout better?



11. Mark Dance drew the Mill Bend Turn, an intense switching job that operates within South Jackson's yard limits. Mark chose to run over to Mill Bend light, pull all the outbound cars, and return them to South Jackson. Then he went back with set outs. That is much easier than going over with everything - especially during this session with a lot of cars in Mill Bend and a lot of cars waiting in South Jackson to be spotted. With everything in Mill Bend at once, the place would have been jam-packed. Charlie Comstock photo

Charlie: Well, on the two previous versions of the Bear Creek, yes. If nothing else, you learn construction techniques. And I also learned that I like switching, but I also like long mainline runs. So when I built this, I really didn't want a layout that was only solid switching, with a town every five feet.

I wanted to have scenic vistas. Now 20-20 hindsight says, if you want scenic vistas, then consider N scale. N scale lets you fit twice as much scenery, or actually if you count it as twice in depth and twice in width, that's four times as much scenery in the same square footage as you can with HO.

But the drawback with N scale - and I know the N scalers will hate me for saying this, it's more work to get it to operate really reliably. If you've got the Talgo trucks, trains won't run as reliably. And I want things to run reliably. The only good derailment is a dead derailment.

MRH: So when did you start construction?

Charlie: I started construction in this basement in January, 2004. But the Mill City section from the old layout that became Mill Bend on this one - I built that in 2001. I brought it with me when I moved because I had just finished building 13 custom turnouts and a crossing - and I wasn't ready to throw that away!

MRH: So just how much of Bear Creek number two were you able to save?

Charlie: The structures, the turnouts and the Mill Bend area? Mill Bend had no scenery at that point. So that was fairly easy to move and just drop it into location. Oh yes, I saved the DCC system, too.

I saved a lot of rolling stock, car kits, and a bunch of trees. I developed an addiction for Pete Vassler's Canyon Creek Scenic trees, so I certainly wanted to save those.

MRH: Has building this layout gone like you expected, and is it progressing as fast as you would've liked?



12. Extra SP&S 79 west, the Oakhill Turn, finally made it to Oakhill and is setting about their switching duties. Because the mainline tends to be busy, they are encouraged to make their run around movements using the wye track. Paul Mack (gray shirt) is an old hand at the OHT and guides Bernhard Beck through the movements without any difficulty.
Charlie Comstock photo

Charlie: Construction on the Bear Creek's been an interesting mixture of racing ahead and doldrums. I started off with a bang and before you knew it there was two miles of main line. I started running op sessions, even though the layout wasn't even close to finished, but I said we're going to run op sessions anyway.

There was no scenery. Some of it was just track running perilously on a Masonite spline roadbed six feet off the floor. Luckily nothing was derailling at that point. So then the track expanded a little bit further. I added a staging yard there, put a real yard in, and the next thing you know, ops start behaving more like real layout ops.

MRH: With ops being a big focus, did your layout progress according to a building plan? Yes, that's a loaded question, because ops can be fun but distract you from building!

Charlie: I'm not sure I ever really had a plan other than let's build a railroad. Which is actually not bad as plans go, as long as you look far enough ahead. You don't want to build part A, then build part B, only to discover uh-oh, you should have built part C first as you finish up part B.

Of course, when you start a project like this, everything is gang busters, you can't wait to get home from work and rush into the train room and start working on stuff. But after you've been doing that for a year straight, it begins to wear thin and progress slows down.

Then something will happen and suddenly your batteries get charged up again. And then you're back at it, gang busters again. So it's progressed fast-slow-fast-slow like that.

The latest thing that got me in to do the Junction City scenery came when I started taking pictures of rudimentary scenery. I thought, well, if I finish doing the track ballasting here, it would add a bit of more interesting texture.

Hey, what happens if I add some pavement on the roads (I use Spackle)? What if I take a pencil and draw tar lines for where the road was cracked and repaired with tar?

A lot of my motivation comes from taking pictures. I'm a model train photography nut, and I really like what the pictures show, but I keep thinking I can make it look better than that.

MRH: And once you got started, it became hard to stop ...

Charlie: Yes, once I get started, I keep working on it. But I'm closing in on 70 years old now, and I'm finding my get up and go has got up and went. So it's hard to maintain a high rate of speed doing anything anymore!



13. Cab forward 4100 rolls through this new scene at the east end of Junction City. The backdrop here divides the main peninsula in the room and makes the layout feel a lot larger now.

A big motivator came when I started putting the backdrop up, because I planned the railroad so you can't see where the next station from where you're standing. But as long as the backdrop wasn't up you could see all the way across the train room.

When running trains with Timetable and Train Order you don't want it to be too easy to see what else is on the railroad around the room. Under TT&TO, if you go without checking the timetable, then you're likely to have a headlight stare down someplace, which increases the drama of ops.

When I finally put the backdrop up, it got really exciting as the whole character of the layout started changing. It made individual scenes seem more isolated yet bigger at the same time. And it made the whole layout seem much bigger because now you couldn't see all of it at once.

MRH: It's definitely true dividing up a room makes the layout seem larger and makes the ends of the layout feel farther apart.

Charlie: As you walk around the room, it sort of unfolds before you now, and it didn't do that before. Before you could just see the whole thing at once. When the backdrop finally went up, things got really exciting. I also got motivated to install the final two miles of the five miles of main line!

I have been fortunate to have a bunch of people come over and help me on construction. It's like this project is way too big to try to do it all by myself. Don't be silly enough to delude yourself into thinking you can handle it.

If you don't have a job and don't have a family and don't do anything other than work on model trains, then maybe. But you know, life in a train room all by yourself makes Jack a pretty dull boy and yes, even Charlie too.

MRH: Yes, having friends assist can definitely help get more progress on such a large layout project. How has it gone? Any challenges?

Charlie: There have been a lot of engineering challenges in here. Some of the benchwork is supported using laminate joist beams. There are 3 pairs of legs that support the engineered floor joists. The staging and modeled layers are supported from these joists. The rest of it is just hung off the floor.

So I put the staging deck on top of these joists all on one level with one side lower than the other side. I added gussets to strengthen the parts that were doing the supporting. Some of the guys saw what I was doing and said, that's never going to be very sturdy.

I said, well, by the time you tie everything together and get the backdrop in place that should change. It actually turned out to be fairly sturdy. So I'm kind of proud of my engineering on that. There's a YouTube video in the MRH library where I show how I made the gussets to stiffen the benchwork.

General overview video of Bear Creek benchwork:
youtu.be/J5rV8lQGPw4



14. Two Alcos work hard to pull their train upgrade over the framed Baynes Valley trestle, enroute from Mill Bend to Oakhill summit.

Video on using biscuit joinery and cantilevered gusset plates:
youtu.be/gSVPhD0bIJU

It's great to do benchwork construction with a bunch of guys. The ideal crew size is probably four or five. More than that and it becomes too much like being a full-time manager at work, trying to manage everything. That many helping allows for a lot of kibitzing and male bonding, assuming you don't have any girls helping. I'm not adverse to having girls helping in the train room, but I've just never had one. My wife comes down to admire the progress but that's about it.

MRH: So what are some key layout stats?

Charlie: Layout statistics, well let's see. The locale is Oregon. The era is 1952. It's a bridge line that starts out flat and ends flat. And in between it goes over mountains. The layout itself occupies about 1100 square feet.

I'm using Micro Engineering flex track in visible locations because I think the detail of Micro Engineering track can't be beat. I use Atlas track elsewhere, like in staging.

MRH: What's the ruling grade and minimum radius?

Charlie: The ruling grade on this layout is 2.8%, which is between Mill Bend and Oakhill. Going the other way, there's a 2.3% grade between Bear Creek and Oakhill.

Minimum radius on the main line is 40 inches, because I want to run big steam and not have it look ridiculous. And that dictated a lot of track planning decisions because when you can't bend any tighter than 40 inches, it really limits what you can do. It forces you to seriously consider where the track needs to go and how it's going to get there. Main staging sits underneath the peninsula, but over on the side under Oakhill it is a place called Redland, it's on the Deschutes branch.

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MRH: How many crew do you need to run an op session?

Charlie: The minimum we can run a full op session with is 12 people. That means I need to have 12 people who know what they're doing and are used to the timetable and train order. They need to handle the OS reports, looking at the paperwork and signing registers.

I've had as many as 25 people in here running a session one time. I had the layout open for an LD SIG op session at a convention and I had 16 people show up from the convention to run trains. And then I had a bunch of the regular operators to help. In fact, more showed up than I thought were going to help. So it was pretty full that night.

MRH: So did you encounter any unexpected nasty surprises with this layout?

Charlie: When I was planning the layout, I had this theory in mind that trains would come out of main staging and they'd go through two loops of a helix and then they'd pop through the backdrop, and then magically a crew would be on them. There'd be a staging manager position who'd be responsible for driving trains out of staging to where they prairie dog out onto the real layout. And also the reverse, taking trains from the real world and drive them back down to staging. But that hasn't happened.

That was the official stated position, but this gets into that big problem I mentioned earlier. The big problem is, when you're trying to take a train out of staging, you can either crawl down underneath a rather low duck under, or you can walk the full length of a 150 foot aisle to get around to the other side where your train's coming out of the backdrop.

I thought the staging manager would handle it, but the staging manager idea has never caught on. So in 20-20 hindsight, that was a real dumb idea.



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MRH: Interesting take on a layout shortcoming. So what do you like most about this layout?

Charlie: I like running op sessions. I like seeing the room filled with people, especially when they have half a clue what they're doing with trains coming and going. I like to see people working and happy – or they're between assignments in the lounge eating brownies.

I like to see the dispatcher sitting down and gabbing like crazy with the operators getting train orders and clearances ready. It just really winds my clock. I love it.

MRH: What do you like least about this layout?

Charlie: A layout this size, you don't own – a layout this size owns you. It has requirements – it needs you to do this, it needs you to do that. It's like a woman that you can't live without, but you can't live with. That's probably a terrible analogy, but sometimes I don't feel like coming into the train room at all.

Sometimes I get so tired. I can't remember the last time I just came in here and ran a train around for fun. With Corona, it's been almost two years since I had an op session.

I got involved in online computer games where you're playing with a bunch of other people who are at other computers scattered around the world. That ate up a bunch of time. And then I was playing with the Trainz 2019 simulator and that ate up a bunch of time.

There's only so much time to go around and I really don't want to make my wife a train widow. She felt like that a lot in the early days when I was just down here all the time, working, working, working. A wife is far too important a person to be treating them that way. I want to make time to spend with her so the layout may take a hit.

I love having the layout. I love running op sessions. When I actually take a throttle and start running a train, I actually do like



15. Here a train heads down the Siskiyou Line branch toward the first tunnel on the line, crossing lower Bear Creek in the process. High overhead is the main line out of Bear Creek. The Siskiyou Line branch actually goes into staging.

doing that. I also like building stuff. I like building scenery. I especially like taking pictures of what I've built. So be careful what you ask for, because you might get it.

MRH: Okay, then if you had to do it all over again, would you do it any different?

Charlie: I would rearrange the track routing. If I had the same room, I'd come up with ways to get out of the need to hike around Cape Horn to get from staging to where you pick up your train.

MRH: So that's the main thing?

Charlie: Yeah, that's the main thing. Uh, what I've thought about doing the same layout in the same room with an N scale track plan with the improvements I mention to solve the staging problem. But in N scale, instead of a five mile main line, it would be a 10 mile main line.

One of the things about timetable and train order operation is that there needs to be enough distance between stations to allow the dispatcher to keep up on the progress of trains. Otherwise the dispatcher is getting these OS reports, which tells them where the trains are. But on a model railroad it's bam, bam, bam – he's getting spammed to death with OS reports.

A train leaves one station and 15 real seconds later, it's in the next town. I like having distance between towns and in the smaller scale, the distance is easier to achieve.

It's not so much that there's more physical distance, but there's measured distance in time. An HO scale locomotive going 60 scale miles an hour is eating up 88 scale feet per second or a 60 foot scale mile in one minute.

In N scale, 60 miles an hour is half that. So to cover that same 60 feet, you're now taking two minutes. So now you've got more time over the same distance, so it makes the time between stations longer, and that makes life easier on the dispatcher. It also lets the crews maybe enjoy the run a little bit more. Unless you're trying to do trains as quickly as possible in which case having a long layouts is an obstacle.

But I measure that against N scale's smaller size and its reliability. I've seen reliable N scale layouts, but I've also seen N scale layouts where there's far too many derailments.

MRH: Why did you choose the layout height that you picked?

Charlie: When I was designing the Bear Creek, layout height was a very critical dimension. I needed the height to be high enough so one could duck under – or even better, nod under to get into the train room.

At the same time, I didn't want it to be so high that the grades would be ridiculous getting up to the highest level. The grades from other parts of the layout to the summit at Oakhill really determined the height and then the grades needed from there



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down to the other locations determined the height of the other places.

For the center peninsula, I needed to have it high enough you could see underneath it to see the staging yard tracks. I really don't like blind staging. I've seen blind staging yards that have a little slit to look through and that seems like an act of desperation.

I've got Redland underneath Oakhill, and Redland's a place where there's a lot of operating happening there. So the deck above that had to be high up enough for the operator to see the Redland deck below.

Plus I wanted a layout that isn't flat. I really don't like perfectly flat layouts. Even Kansas isn't perfectly flat. Kansas has some up and down to it, and places with quite a bit of up and down.

It was a juggling act to get the elevation such that I could have the correct grades to go between them. Then the helix needed to be engineered so that a single set of motive power could climb up it. I wanted the ruling grade from Mill Bend to Oakhill to require a helper, but not the helix. And I don't want to run trains with helpers unless the helpers are required.

MRH: So what are the grades coming out of the helix?

Charlie: So the helix has two tracks on it. I use the inner track is for downhill traffic and the outer track for uphill traffic. That's because the inner track has a steeper grade than the outer track since the inner track is shorter.

The inner track of the helix has a 40 inch radius while the outer track has a 43 inch radius. That means the outer track is slightly longer than the inner one. Both tracks climb at the same rate, but the longer distance on the outer track means that the gradient is less steep. If memory serves me correctly, the outer track is 1.5% and the inner track is like 1.8%.

MRH: What DCC system do you use and why?

Charlie: I'm using a Digitrax Chief with an Empire Builder for a booster. I'm about to install a second booster. I just started with Digitrax way back when. Frankly, I don't think there's any such thing as "good" DCC system. I hope that manufacturers won't beat me for saying that, but all of them have got problems and none of them are perfect.

I know a lot of operating people like NCE systems and it's as good as any of them. Digitrax has the advantage that their UT4R radio throttles were quite affordable. I really didn't want to be spending \$200 a throttle to put ten throttles on the table for people to run.

Digitrax lets me run a programming track without taking the layout down or requiring a separate booster just for the programming track. The Digitrax interface is kind of arcane, but thanks to the people who made the Decoder Pro and Panel Pro programs, I have managed to tame Digitrax.

MRH: What kind of decoders do you use?

Charlie: We've got Digitrax decoders and North Coast decoders. I think I've got a Lenz decoder someplace. I've got some Tsunamis and some pre-Tsunami Soundtraxx sound de-



16. The Mill Bend Turn switches the logging spur on the west side of Oakhill summit, using a handle of gravel hoppers to pick up the loaded log cars.

coders. I've got a locomotive that's got an ESU LokSound decoder – an Intermountain AC12 cab forward.

I've lost track of what I've got in locos because I've been at this for so long. I started in DCC well before I started this layout. I actually started in DCC when I had the 4 x 8 layout.

What do you think on a 4 x 8 you need DCC for? The more closely the trains have to maneuver around each other, the more you need DCC. Otherwise you'll have about 50,000 block toggles that you have to be constantly flipping to make sure that the other guys running a train aren't interfering with yours.

MRH: What's your thoughts on layout size, can a layout be too big?

Charlie: I've been asked before – whether my layout is too big or too small, or what I consider to be the ideal size for a layout, and what too big is. Let me dodge that a little bit by asking for who and under what circumstances?

What if I was 30 years old and starting to build a layout and knew what I know now. Let's say I know what I know now and I had piles of money and I had piles of time. And let's say I had a bunch of people I felt I could trust to help with construction.

Then I'd like to see a layout where there's 10 minutes between towns for timetable train order operation. But that means now we're talking a 6,000 square foot, 7,000 square foot, or 8,000 square foot layout with multiple decks.

And maybe a mushroom configuration. A mushroom might be kind of ideal for because a mushroom prevents seeing too many decks at the same time. But that's an enormous undertaking. That's like a club layout.

One of the big problems with an enormous project like that is, if you're not absolutely secure in your venue where you're building this thing, then you can put an awful lot of time, money, and work into building it.

Then the landlord announces he's selling the building and your 50 year lease is worth its weight in used toilet paper. The next guy coming in says, we don't want the layout, we want to do something with this space so now you're out on your ear.

So then, how big is too big? Maybe too big if you can't reasonably take charge of it all yourself. If you can't handle the construction, if you can't handle the operation, if you don't have enough people around to run it.

Let's take Northeast Montana, for example. If you build a layout that takes 30 people to operate it fully, you may not be able to get 30 people there. If it's a really nice layout, you'll may be able to get 30 people to make the pilgrimage periodically, but you won't be having ops on a regular basis out there.

So you need to think about what you're going to do with the layout and how you're going to do it. Are you building the layout for operation or to just take pictures of it and get yourself published in the magazines?



17. A lone Alco switches the Ames Tools spur in Junction City. Behind is some of the newest backdrop painting and scenery work by Charlie as of 2022.

Are you building the layout because you like building a layout? That might be the best reason for doing it of all. If you're building a layout to get noticed by other people, the Bible says that doing things to get noticed by other men may not be the best reason to do something.

I think nobody builds a big model railroad and makes it public without having some of that in them. So that begs the question, would I like it if this layout was a little bigger? Well, yes and no.

There is another room I could expand into at the expense of losing my wife. I could take over her art room and that would allow me to put another couple of stations on the layout.

But I'm not even going to ask her about that. And besides, I can hardly finish this layout. For me, 1100 square feet seems to be plenty. I'm glad that I didn't try to build a 2000 square foot layout.

People like Harold Werthwein with this 3000 foot Erie layout. And there's Ken McCrory, who building that ginormous PRR Buffalo Line. And then there's the guy down in Arizona, Verryl Fosnight, who's building that massive UP layout. To all you guys, I think more power to you and I salute you.

Those are wonderful layouts – but my main advice is to make sure when you're committing yourself to a layout size, don't bite off more than you can chew. How do you know that? Experience with building smaller layout projects before committing to that big dream layout.

MRH: Do you have any favorite scenic techniques, and what time of year do you like to model?

Charlie: I like to model a summerish season. Sometimes I'm tempted when I look outside here in the fall and see the trees changing colors. I think, wow, I should model in the fall – but you know, I'm modeling Oregon.

If I wanted to model fall scenery, I should model Massachusetts or something like upstate New York.

As far as techniques go, I'm evolving. I use zip texturing. For ballast, I use Smith and Sons mixed in with some paver sand. Paul Scholls had a clinic at an NMRA regional convention where he talked about using paver sand for scenery.

I use alcohol to make my wet water, but if you use too much alcohol, you can't be in the same room with it. After wetting down the ballast mixture with wet water, then I put diluted white glue on it and it becomes a solid mass.

I discovered that if I sift the paver sand down enough, I get something that's about the same size as commercial ballast. So I've been mixing that with cinders ballast that Smith and Sons makes. It's kind of like hamburger helper – it makes the ballast go a little farther and saves money.

I don't think Smith and Sons makes ballast anymore. I believe Scenic Express took over from them. So if you're looking for good



Oakhill Turn "Lumberjack" Extra Freight

Instructions:

South Jackson	• Train originates in South Jackson. Check with SJ yardmaster for train location. • Inspect train and make brake test. • Run to MB (Mill Bend) Blocking < [MB (loaded log cars)] [OH]<
Mill Bend	• Setout loaded log cars billed to Mill Bend. • Pickup empty log cars billed to OH. • Run to OH (Oakhill). Blocking < [OH]<
Oakhill	• Switch ALL OH tracks. Handle all off spots. • Pickup ALL outbound cars. • Run to MB (Mill Bend) Blocking < [MB] [PO:SA:SJ:RD:PV:DS] <
Mill Bend	• Setout loaded log cars billed to Mill Bend. • Pickup empty log cars billed to PV (Prineville). • Keep loaded log cars billed to Redland. • Run to SJ (South Jackson).
South Jackson	• Cut engine off train, run to engine service area. • Give waybills and car cards to SJ yard master.

Notes:

- Max train speed: 20 mph.
- Max speed between Mill Bend and Oakhill: 15 mph.
- Serves log unloading spur in Mill Bend and all Oakhill spurs.
- Doesn't switch any other Mill Bend spurs.
- Max length: 12 cars
- Helpers not permitted to push on occupied cars or empty log cars.

18. Bear Creek & South Jackson sample page from the train instructions PDF for the Oakhill Turn. You can download the full PDF in this month's bonus downloads [\[mrhmag.com/magazine/mrh2022-04/bonus-extras\]](http://mrhmag.com/magazine/mrh2022-04/bonus-extras).

quality ballast call up Scenic Express and tell them you want the closest thing to Smith and Sons and you won't go wrong doing that.

MRH: Yes Scenic Express has acquired Smith & Sons ballast now as their natural stone ballast line [\[www.sceneryexpress.com/N-HO-0-Natural-Stone/products/1107\]](http://www.sceneryexpress.com/N-HO-0-Natural-Stone/products/1107). What about other scenic materials?

Charlie: I use static grass. I use Silflor. I use Woodland Scenics

scenery products. I use the little clumps for bushes and sage brush. Scenic Express sells super trees and various kinds of pre-made trees of various colors.

You can pick the color you want and mixing all those things together seems to work pretty well. The latest trick that I came up with was when I was ballasting track next to wet zip texturing. The ballast was still wet since I had used my alcohol wet water to moisten it down. As I'm dribbling on the dilute white glue, it was seeping out to the side.

I tried sprinkling Woodland Scenics fine turf – their earth-color ground foam turf. It worked really well to glue that stuff down - much better than trying to put down a layer of paint and then sprinkle this stuff on. It looks much more natural this way.

While it's still wet, then I come in with my static grass gun and put a shake or two on and it seems to work much better because by then, it's just barely tacky. Static grass, doesn't like something really wet – it kills the charge and then the grass falls over and now you've got a swamp mass instead of a stand of static grass. I stumbled onto that now I'm planning to use it a lot more in the future. It's sort of like zip texturing on steroids.

MRH: What about structures on the layout, bridges, or tunnel portals?

Charlie: I have a lot of structures on the layout and I'm adding even more in the future. And yes, there's bridges, and there's tunnel portals.

I've got some scratchbuilt bridges that I made out of wood. For other bridges, I've used Central Valley components or Micro Engineering components. The Central Valley and Micro Engineering components make life so much easier for the bridge builder than it's ever been before. They're easy to kit bash into something unique. Their bridge kits are wonderful stuff.

So I've got girder I've got through girder bridges, I've got deck girder bridges, I've got trestles, and I've got through truss bridges. Central Valley makes a very nice looking through truss bridge. It's not nice to assemble, but when built properly it makes a nice spindly bridge.

MRH: And what about structures?

Charlie: I have a lot of different structures on the layout and my construction methods range from scratchbuilt out of pieces of wood to Walthers Cornerstone kits.

One thing that I've discovered – you can build a shell out of foam core and then download various texture patterns off the internet. Clever Models has some, and you can find other places online that have clapboards, bricks or whatnot. Use an editor like Photoshop Elements to edit your walls and add windows to them.

Then spray the building down with Scotch 77 adhesive and then wrap your wall textures around the foam core shell. Be careful not to get bubbles or wrinkles. That's a fairly quick way to make a building.

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Not it's not truly scratchbuilt, but it can be really hard to see the difference unless you're very close and know what you're looking for. If you're running in an op session, you don't have time to be closely scanning every building when you're shunting cars around in front of it.

MRH: Yes, those quickie structures can be most effective. How about all these great looking conifers?

Charlie: Trees have been an interesting topic for me because I have wanted to learn how to make nice trees. I've discovered an economical way to make trees using bamboo cooking skewers.

I add furnace filter, the same filter that Pete Vassler uses for his Canyon Creek Scenic trees. The trick is learning to snip it artistically and then skewer it onto these skewers. Next I take it outside and use a rattle can to spray it with flat black paint and then dribble fine green ground foam on it.

When that's dry, I mist it with Aqua net, trying to get the outer edges, but not saturate the inside of it.

Then I use a lighter color of the green fine ground foam and drizzle that on from the top to represent the highlights at the tips of the branches. This represents where growth is occurring and differentiates the parts of the branch in the light from the areas in shadow.

If you sit down with a friend or two, or a wife or two – excuse me, sorry, honey! With help, you can knock out enough trees to make an area arbor-real, shall we say, in a reasonable amount of time.

On a layout like this, I figure I'll probably need a few thousand trees on it. The trees just go like water when you're building scenery. So I'm always on the lookout how to make good looking trees that don't take too long.

MRH: How would you describe your philosophy on doing a layout? For example, how do you narrow the focus?



19. South Jackson had been track-on-plywood for so long (about 8 years) that at first John thought he was at the wrong yard with all that new ballast spread around. The limestone ballast for the mainline versus the dirty gravel ballast for the yard tracks means at last he can figure out which tracks are which in the yard. *Charlie Comstock photo*

Charlie: That's a real good question. Maybe the simplistic answer is a good layout is a layout the owner thinks is good. But if we're pretending that we can judge somebody's efforts, what makes a good layout? For me, I'm looking for scenery that's believable, something with realistic colors.

I don't want to see fluorescent trees or fluorescent grass. I don't want to see streets so tightly packed with buildings that it doesn't make sense. I like to see a reasonable mix of equipment that seems plausible. It doesn't have to be perfect. It doesn't have to be completely prototype.

This is not the Southern Pacific per se, this is the Bear Creek and South Jackson. And that gives me a degree of license in what I do.

You don't need a license, you can just go ahead and do whatever you want and heck with anyone else. But here I'm trying to come up with something that feels cohesive. I'm trying to stick to an era.

I prefer to have vehicles that look right. Busch makes fifties vehicles – they don't make many of them, but the ones they do make look darn fine. They put a lot of effort into making them look right.

You must be your own judge for what looks right and what doesn't look right. I prefer my stuff be weathered a bit. I prefer not to have stuff that looks stark flaming brand new all the time. And just as I say that, I notice there's a bunch of box cars sitting here that don't have any weathering on them!

So that's a to-do: get good at weathering cars. I need to have a major weathering session and just go to town on them. That's a whole other topic – how to weather. I try to make the whole thing fit together.

MRH: Yes, looking great is important. It's also nice to have it run as good as it looks.

Charlie: The ops plan needs to fit with the physical plant and with the track plan. The design of the layout with the scenery, the structures, and everything – it all needs a sense of cohesiveness.

I've seen a layout say, in a 10 x14 foot room, one end of the layout was Los Angeles on the other end of it was Omaha – I get that the guy liked it. He had a great time running trains on it, and he was a nice guy. So for him, that layout was great, but that's not what I want.

That's one of the reasons why I'm not really into N-Track modules. Those modular layouts at shows tend to change so much from module to module. They don't have to, but they often do.



20. An ALCO rumbles its train across a grade crossing on the east (railroad west) side of Mill Bend. *Charlie Comstock photo*

I like to think the layout has a purpose. The purpose is to distribute cargo. I'm starting with a premise that trains carry cargo between industries. Some of the industries are online and others are in staging someplace.

It's imaginary and you can have any kind of industry you can imagine. And it doesn't cost anything other than maybe a special car to carry that cargo. But even with that – I keep using this word – I want cohesion.

I want things to look like it's there for a purpose. If you're building scenery and there's suddenly a curve in the railroad, why did the railroad put a curve there? Railroads don't build curves just because they look nice.

Railroad build curves when they come to a river, for example, and they don't want to build a bridge to go across it. Or if they're going through a bunch of hills they'll curve around to follow the line of least gradient over the hill because they don't

want to pay the extra fuel costs to get a train up a hill. If there's going to be a bridge there, then there needs to be a reason why.

Don't just go: I'd like to have a bridge and plop a bridge down anywhere. Ask what would cause the railroad to have a bridge here? And then build that reason into the scenery. And it makes a difference when you're looking at a railroad, whether it looks plausible or whether it looks contrived.

MRH: What advice would you give to someone just starting out in the hobby?

Charlie: Abandon all hope (laughs). "Ye who enter here ..." is the advice I'd give to someone just starting out.

Okay, so somebody's just starting off in the hobby. What should they be doing? The answer is don't make long term decisions just yet. Instead play around, have some fun, figure out what you like and what you don't like.

Try to get invited to other people's layouts to see what they're doing. If possible, get invited to an op session, get invited to a construction session, so you can start learning things. Read the magazines, watch the videos.

MRH Media's two magazines and TrainMasters.TV has got a lot of helpful videos. YouTube is just full of videos too. A few of the folks on YouTube even know what they're talking about!

Don't fall in love with any particular thing right away. If you get married to an idea, it's not illegal to divorce yourself from a model railroading idea.

Don't feel like you have to commit and stay committed if you find something else you like. If you're madly in love with the Southern Pacific in the southwest, but at the same time you're madly in love with the Bangor and Aroostook in Maine, now what?

If that's really what you want to do, don't be afraid to just go ahead and build a layout with both of those railroads on if



21. Charlie daring to take the leap after a few visits to dispatch Joe Fugate's Siskiyou Line 1. Something comes to mind about rushing in where angels fear to tread! Seriously, by visiting the Siskiyou Line op sessions and cutting his teeth on dispatching the layout, Charlie got a lot of valuable experience as he designed and built his own layout.

that's what you want to do. It's like on Winnie the Pooh, they spent a lot of time trying to figure out what Tigger liked best to eat. And they tried all sorts of things.

Finally, they figured out that Tigger liked baby Roo's strengthening medicine best. And that made baby Roo very happy, because baby Roo didn't like his medicine at all. Tigger would eat it for him.

Like that, you really need to try some things and figure it out. The only way you're really going to know is to try it out. Try not to become a foamer, but somehow you just have to go visit that railroad.

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I've never seen anybody that's like that. At least I don't remember any. Well, maybe, Joe, how was I when I first came to one of your operating sessions the first time?

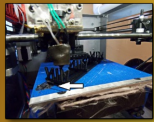
MRH: Yeah, you were foaming pretty good.

Charlie: Yes, well, okay. Don't be fooled by the magazines. The magazines typically show you all the beautiful spots on a layout. What they don't show you is that just around the corner, it's a Plywood Pacific. Or it just abruptly ends with things hanging.

All the layouts that appear to be shining, wonderful layouts are almost never complete, nor are they completely manicured from beginning to end. You don't have to aspire to that. It's okay to take your time and build a layout bit by bit. ☑

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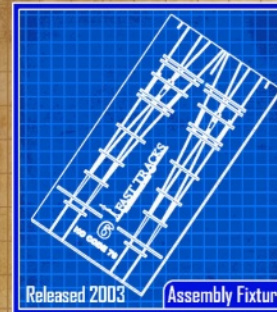
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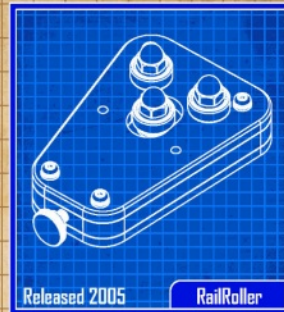
Released 2003

Assembly Fixture



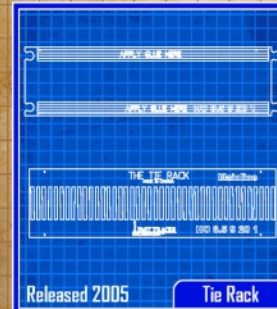
Released 2004

Filing Tools



Released 2005

RailRoller



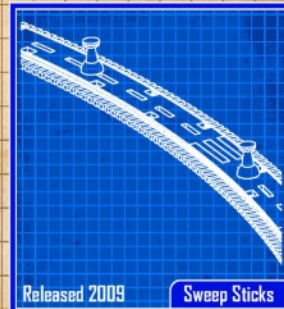
Released 2005

Tie Rack



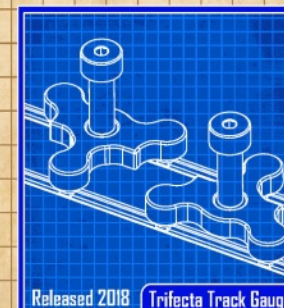
Released 2008

Bullfrog Switch Machine



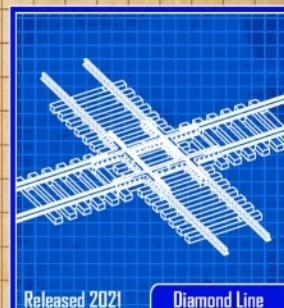
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Modeling the U30CG with 3D-printing



1. Here is one of my two finished GM U30CG models I made in HO from my own 3D-printed shell design.

Model Railroad Hobbyist | April 2022



YANNICK DREYER DESCRIBES HIS GE U30CG MODELING PROJECT ...

I'VE ALWAYS LIKED THE GE U30CG LOCOMOTIVE, but it's only available in HO scale brass. I decided to see if I could create one using one of my 3D printers, thereby saving myself a lot of money. I started in 2017 with a scale drawing of the U30CG from the February 1970 issue of *Railroad Model Craftsman* magazine [4]. Using this drawing, I developed a 3D model in Autodesk Inventor.

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J. Regier

ABOUT THE PROTOTYPE

The Santa Fe ordered 10 U28CGs in 1966 as the first of several orders for new, second-generation passenger locomotives to replace its aging fleet of first-generation power. The U28CGs were standard hood units outfitted with steam generators in a purpose-built cabinet behind the cab [2]. The railroad preferred a more streamlined aesthetic for its passenger power, so it worked with GE to create a cowl version of the U30C, which became the U30CG [3].

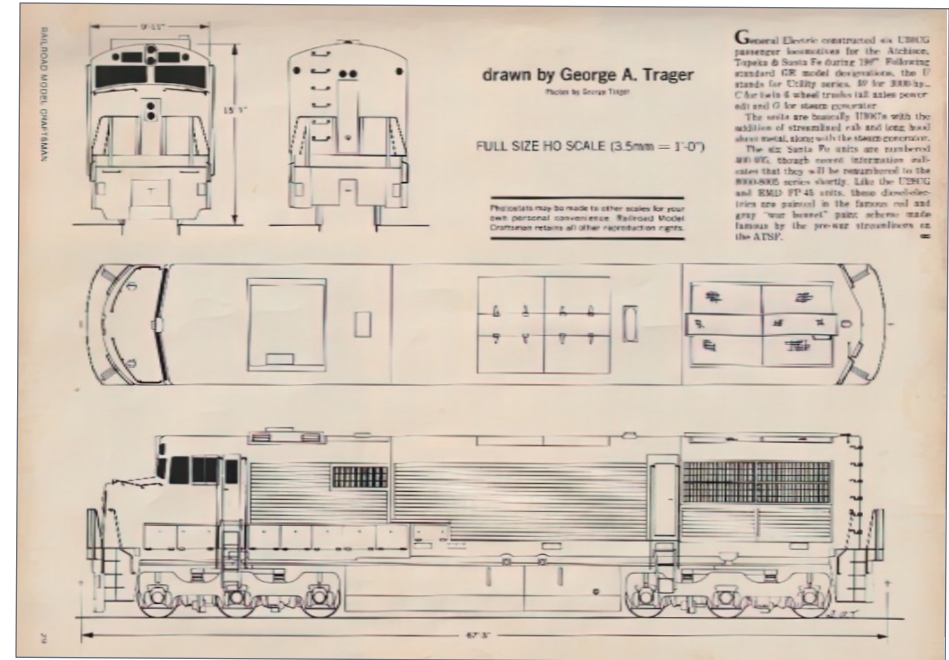


2. K.B. King captured this pair of U28CGs leading the Texas Chief in Fort Worth in 1967. Atlas has recently produced this model. *Jim Spears collection photo*

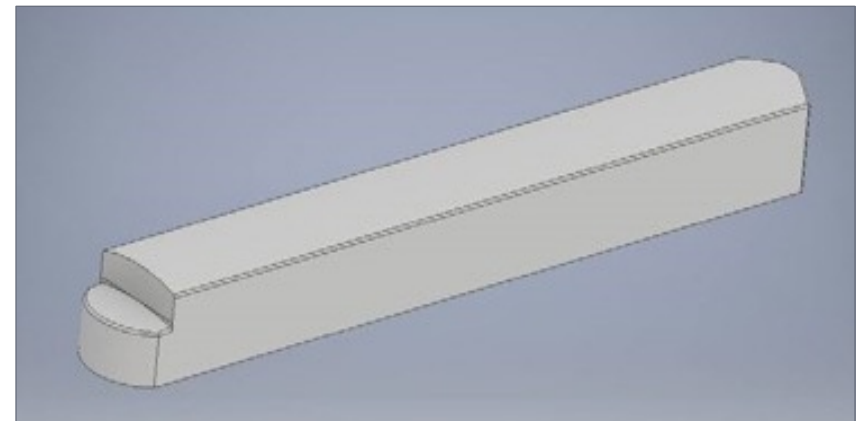


3. A pair of U30CGs pull the Grand Canyon at Belen, NM in 1968. *Steve Gillings photo*

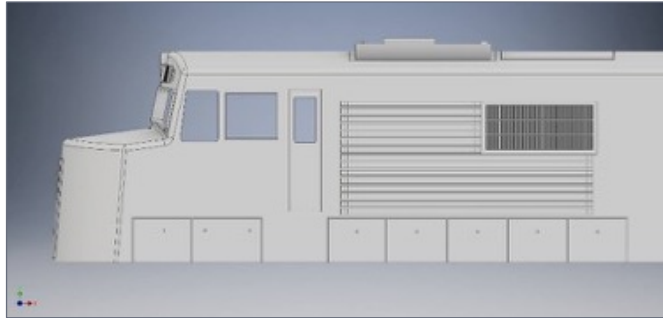
The U30CGs and U28CGs served in passenger service until February of 1969, when a U30CG was the suspected cause of a derailment. The Santa Fe relegated the U30CGs and U28CGs to freight service for the remainder of their careers, eventually painting them in freight colors and removing their steam generators. All were traded to GE for new B36-7s by 1980.



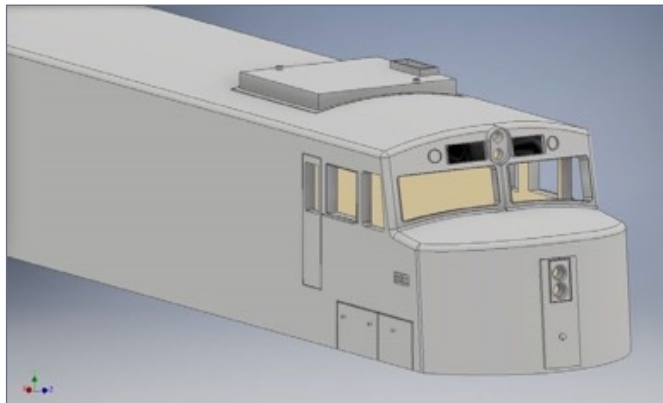
4. I used this scale drawing from the February 1970 issue of *Railroad Model Craftsman* as the starting point for my 3D CAD model. *Copyright Railroad Model Craftsman, used with permission.*



5. I began by roughing-in the basic outline of the locomotive in Autodesk Inventor.

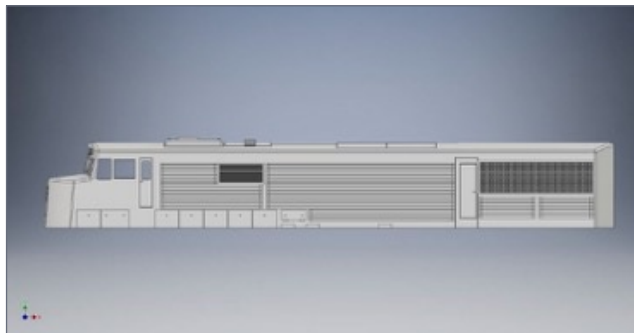


6. I set to work adding details, layering on fluting, grille work, and access panels.

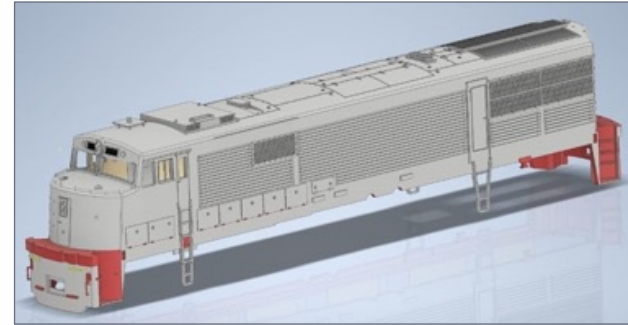


the roof behind the locomotive cab.

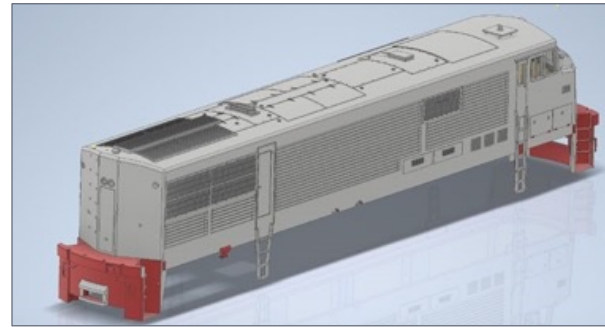
7. Here is a front view of the locomotive with the headlight, Gyalight, and classification lights in place. I added the steam generator, which protrudes from



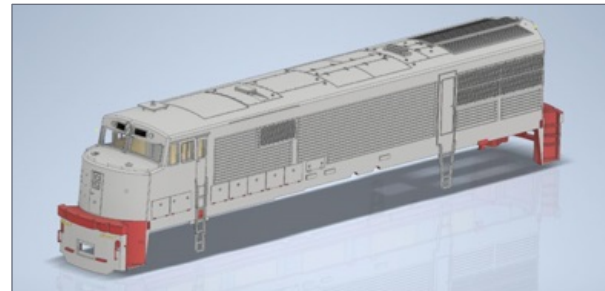
8. A conductor-side view of the locomotive with most of the fluting and grilles in place.



9. I added pilots, platforms, and steps to the coach body. The roof details are more complete in this view.



10. Rear engineer's side view of the U30CG. A closer look reveals that this represents the later freight configuration of the locomotive. It lacks the steam generator behind the cab.



11. Here is the final view of the 3D mesh from the front, fireman's side of the locomotive in its later freight configuration.





J. Regier

MULTIPLE CAD OPTIONS

A search for CAD software will reveal many options and deciding which is best may seem daunting. With some of the professional suites such as Autodesk Inventor running into the thousands of dollars per copy, it may seem especially out of reach.

There are several free, web-based software suites such as Tinkercad and SketchUp that allow you to draw 3D images in your browser and store them in the cloud. SketchUp even offers a pro edition (for a fee) that allows you to install a copy of the software on your computer.

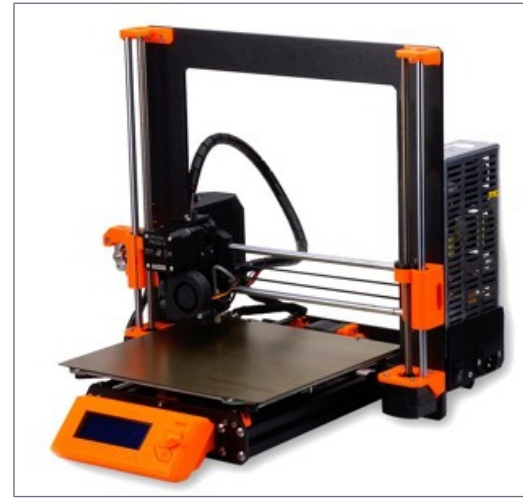
My favorite CAD software is Blender. Blender is an open-source, freeware CAD suite that you can download to your computer. Not only does it offer the power of a professional suite, but its open-source nature means that there are plenty of tutorials to help you on your way.

I acquired a Prusa i3 MK3 filament deposit printer (FDP) for the project [12]. FDP printers work by melting and extruding thin beads of filament, building layer-upon-layer to create 3D objects.

I discovered the FDP process is not conducive to producing finely detailed models. The resolution is too low, and the layer lines can be distracting. I put the project on hold until I could find another option that could create more complex, higher-resolution prints.

Resin printers use UV light projected through an LCD screen to harden 0.1mm-thick layers of light-sensitive resin. This allows for printing much finer details and more complex parts than the FDM method. I purchased an Elegoo Saturn 9.

Washing the prints with isopropyl alcohol to remove any residues, and giving the prints a final cure with UV light helps



12. Prusa MK3. I ended up not using this printer for my project.



13. From left: the Elegoo Saturn 9, the Anycubic Wash & Cure Plus, and the Photon X.

make the fine details pop. I purchased an Anycubic Wash & Cure Plus, which automates the process. I was so pleased with the results that I also acquired an Anycubic Photon X, which has a slightly larger print volume than the Saturn 9 [13].

The prototype U36C shared a common frame with the U30C, so I bought an Atlas U36C to use its chassis for my U30CG. I hoped that I could fit my U30CG shell to the Atlas chassis without modification.

After several months of 3D-printing experiments with my new resin printer, I finally had a good shell. I elected to make two



versions of the shell to represent the U30CG's appearance during passenger service with steam generator, and later during freight service with the steam generator removed [11].

The prototype U30CG had a split tank, with one part carrying fuel and the other part carrying water for the steam generator, so I designed a tank to replace the original on the Atlas chassis. Once I was satisfied with the shell in general, I began a process of test-fitting and modification to get the best fit with the Atlas chassis [15, 16]. I even 3D-printed separately applied handrails for the locomotive.



14. My resin 3D-printed shells, freshly washed and cured.



15. Fireman's side view of the shell on the Atlas chassis. I have applied primer as a final test for the locomotive's looks.



16. Same side of the locomotive from a front perspective. Everything looked satisfactory.

I painted my first U30CG in Warbonnet livery and used Microscale decals. I painted my second U30CG in the Santa Fe's blue-and-yellow pinstripe livery. I also want to make a third U30CG in the Freight Bonnet livery [17, 18].

On each of these locomotives, I'm adding DCC using an ESU LokPilot V5. For lighting, I'm using LEDs.

I'm willing to make this locomotive available for purchase. Just contact me by email at dreyer465@gmail.com. I'll sell the set (shell, glass, tank, and handrails) for \$65 USD, plus shipping.



17. Masking one of my shells for the Santa Fe Warbonnet scheme. Resin takes paint similarly to styrene.



18. My two U30CG locos painted in the passenger warbonnet and in the yellow-and-blue pinstripe schemes. The 8004 lacks a steam generator

since it represents the locomotive's appearance after the Santa Fe reconfigured it for freight service.



19. My Santa Fe Warbonnet U30CG running on the layout.



20. Another view of my Santa Fe Warbonnet U30CG model.



21. The BC Rail GF6C.



A

J. Regier

TAKING YOUR 3D-PRINTED MODELS TO THE NEXT LEVEL

Resin has many wonderful features that make it useful for creating finely detailed models. However, resin has some severe limitations when it comes to thin details such as handrails or horns. While you can create those shapes easily enough, they can be very brittle.

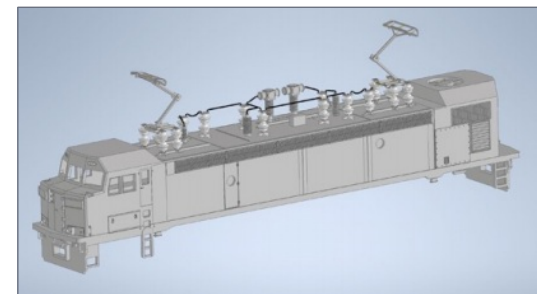
When designing your resin mesh, consider incorporating metal handrails, photo etched grilles, horns, and other detail parts into your design. Not only do they enhance your model's aesthetics, but metal details have the tensile strength to take the bumps inherent to handling. ☑

YANNICK DREYER



Yannick is a locomotive engineer with the Swiss company BLS AG. Yannick has been doing model railroading for 10 years, currently owning more than 400 North American locomotives. He currently has a layout under

construction, and his latest loco project is BC Rail GF6C. ■



23. Yannick's latest loco shell CAD design, a BC Rail GF6C.



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Modeling realistic paved areas (part 2)

YouTube channel **Boomer Diorama** showed in last month's video how to model a paved area. In this video (part 2 of 3), **Boomer** removes the masking tape and does a test run.

Boomer says, "Testing the pavement section at Big Bend near Axton Steel Industry. Before I complete the parking lot, I want to make the textures and tread tolerances don't inhibit conductivity" ☒



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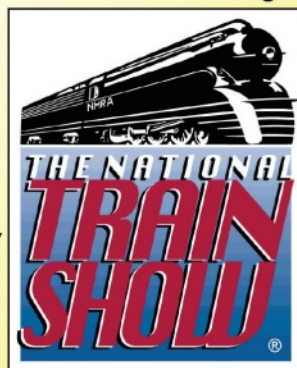
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APRIL NEWS

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Model Railroad Hobbyist | April 2022

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



INDUSTRY NEWS



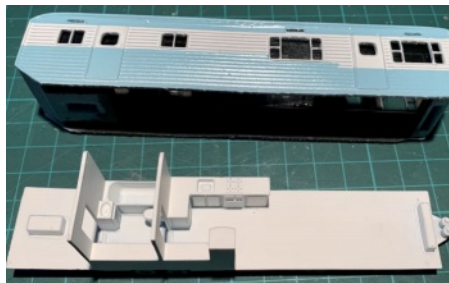
Athearn has announced that it is streamlining its brands. The Athearn Genesis line is the premium line in both HO and N scale, featuring numerous separately applied details, sound, and road number specific details. HO scale Genesis rolling stock will feature metal wheels with rotating roller bearings as appropriate. The Athearn line, in HO and N scale, replaces the RTR line now all Athearn's cars are ready-to-roll. The Athearn line will feature road specific details, a lower level of detail and lighting than on a Genesis model, and will also include structures and lineside details as they are introduced. The Roundhouse line, which is HO scale only, is Athearn's entry-level line, featuring models with reliable mechanisms and attractive paint schemes. Roundhouse models include molded on details for durability and metal wheels and knuckle couplers for reliability. The lines will be represented with new logos.

THE LATEST MODEL RAILROAD PRODUCTS, NEWS & EVENTS

Backdrop Junction is back in business under the new ownership of Rodney McCain. Backdrops are available in HO, N, and O scales based on photographs from the original owner. New photos are expected to be added soon and they also can create custom backdrops from customer photos.

Info: backdropjunction.com

NEW PRODUCTS FOR ALL SCALES



scale and 3 inches in N scale.

miniprints has released several new products, including the largest miniprint yet, a 1959 Detroit 41' mobile home. The Detroit is an unpainted two-part 3D printed resin kit that measures approximately 6 inches in HO

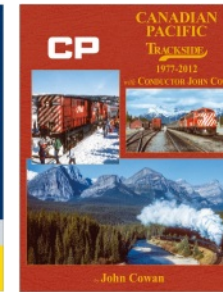
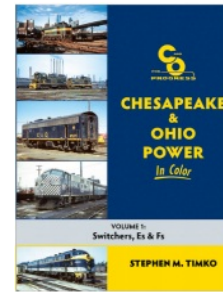


Also new from miniprints is a horse trailer with a horse. Available in HO, S, and O scales, the doors of the unpainted 3D printed kit are separate parts that can be glued either open or closed.



The first kit from miniprints with moving parts is a horse cart with wheels that rotate that looks appropriate for the 1880s. The unpainted kit is available in HO, S, and O scales.

Info: miniprints.com



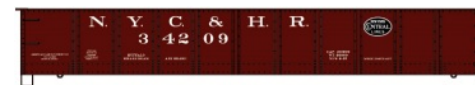
New books from **Morning Sun** include *Chesapeake & Ohio Power in Color, Volume 1: Switchers, Es, and Fs*. Written by Stephen M Timko, the book features switchers from the single GE 44-tonner and EMD switch engines through

the narrow-gauge Atlas and GE dock pushers. Photos of EMD E7s, E8s, F7A&B, and FP7s are included in both passenger varnish and freight schemes.

Also new is *Canadian Pacific Tracksides 1977-2012 with Conductor John Cowan*. John Cowan spent 35 years working for the Canadian Pacific Railway, beginning as a train order operator in Ontario and Quebec, and as a conductor in British Columbia including Revelstoke, the Kettle Valley Railway, and Vancouver Island. CP, VIA, and West Coast Express passenger trains are also included, along with mainline steam trains.

Info: www.morningsunbooks.com

HO SCALE PRODUCT NEWS



New HO scale freight car kits released by **Accurail** include a 41' steel gondola decorated for New York Central & Hudson River. Accurail HO scale freight car kits come with appropriate trucks with Delrin wheelsets.



Also new from Accurail is an HO scale kit for a Toledo, Peoria & Western triple-bay covered hopper. The HO scale model is based on a prototype built in 1964 by ACF.



Accurail is releasing a Norfolk Southern 50' welded boxcar with exterior posts. The HO scale kit will be

available in a 3-pack with different road numbers. All Accurail car kits come with Accumate knuckle couplers.

Info: www.accurail.com



Athearn has announced a new run of GP9 locomotives in the Genesis line for May 2023. The models feature road number specific details such as horns, dynamic brakes, headlights, signal lights, different pilots, beacons, number boards, MU stands, winterization hatches and Canadian specific features.



Road names in this run include Southern Pacific (Kodachrome), Seaboard Coast Line (Split Image),

Northern Alberta Railways, Chesapeake & Ohio, Milwaukee Road, and Great Northern.



All models include body-mounted McHenry knuckle couplers, Celcon handrails, Genesis driveline with a 5-pole

skew wound motor, bi-directional constant LED lighting, and a heavy die-cast frame.



In the Athearn line for May 2023 is an EMD SD40T-2 locomotive in both Sound and DCC-ready versions.



Roadnames in the run include Union Pacific, Rio Grande, Southern Pacific (Kodachrome

and Speed Lettering), and Potash Corp (WRIX). A Southern Pacific Black Widow scheme is offered under the Legendary Liveries line. Roadname specific features include 88", 116", and 123" noses with wheel or ratchet brakes, front L-window variations, ditch lights, plows, air conditioning, beacon, P3, M3, or 5-bell horn, and snowplow variations.



Features of the SD40T-2 locomotive include separately applied air tanks, photo-etched windshield wipers, LED lighting, HTC truck sideframes, welded ECAFB, speed recorder attached to the appropriate axle per prototype, and see-through radiator grilles with a new rear truck gearbox specific for the tunnel motor.

Sound equipped GP9 and SD40T-2 models feature SoundTraxx Tsunami2 sound and dual cube speakers, with the engine, horn, and bell sounds also working in DC mode. DC models include a DCC-ready 21-pin motherboard.



Also in the Athearn line, a Rotary Snowplow with an F7B locomotive is on

the May 2023 schedule. Available DCC ready only, the snowplow features an electric motor to drive the blades, clear plastic cab and portal windows, machined metal wheels with RP25 contours, and a McHenry scale knuckle coupler on the rear.



The F7B model is equipped with a 21-pin DCC plug, 5-pole motor

with machined flywheels, and all-wheel drive and electrical pickup. Roadnames in this run are Alaska Railroad, BNSF, Canadian Pacific, Conrail, Northern Pacific, and Union Pacific.

A single dome tank car, decorated in paint schemes from the late 1930s to the 1960s, will be released in the Athearn line.

APRIL HO SCALE PRODUCT NEWS | 6



Roadnames include Bell Oil (SHPX), Champlin Refining, (HHCX), Nacionales de Mexico, Richfield (ROX), Union Oil (UOCX), and Union Starch & Refining (SHPX).



The models include placards where appropriate, wireform safety handrails, a separately applied brake wheel, and body mounted McHenry knuckle couplers. The tank cars will be available both in single and four-packs.



A 60' Flat Car model is included in the May 2023 schedule both as an individual model and 3-pack. They include separately applied end details and brake wheel, 33" machined metal wheels, and body-mounted McHenry knuckle couplers.



Introduced in the late 1960s, the cars are equipped with stake pockets and were commonly used for lumber and pipe service. Roadnames in this release include Burlington Northern, Chicago & Eastern Illinois, Delaware & Hudson, Frisco, Santa Fe, Soo Line, Trailer Train, and Union Pacific.



Athearn's 1972 Kenworth tractor with a 45' smooth side trailer is also part of this schedule. The models feature clear window glazing, a molded cab interior, and rubber tires.

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The models will be available in six colors – black, white, green, red, metallic blue, and metallic purple. The trailers will also be available separately.



The final product in the May 2023 release is a 53' Jindo container. The containers feature the newest vertical rib front, are stackable, individually numbered, and have separately applied door closure rods.

All Athearn preorders are due by April 29, 2022.
Info: www.athearn.com



Bachmann has released a run of ACF 50'6" outside-braced boxcars with operating Youngstown doors. Equipped with blackened metal wheels on 100-ton roller-bearing trucks and E-Z Mate Mark II body mounted couplers, the car includes a detailed underframe and optional tack boards.

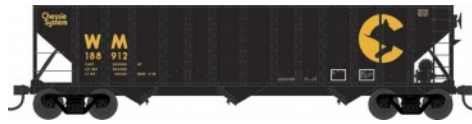


Road names in this release are BNSF, Port Huron & Detroit, and Union Pacific.



Also available now are 85' Amfleet passenger cars with lighted interiors. A café and coach in Amtrak's Phase VI paint scheme have been released. The café car is available in two numbers and the coach is available in three numbers of a coach class and two numbers of a business class car. A minimum radius of 22" is recommended for these cars.

Info: www.bachmanntrains.com



Bowser has announced a run of HO scale H-43 100-Ton hopper cars. Roadnames in this run are BNSF (black 2008

repaint, ex-SLSF), Chessie (CSXT paint-out), Chessie Western Maryland, Conrail, HLMX (rebuilt 1988), Louisville & Nashville, Norfolk Southern (HP30R Horsehead), Pennsylvania, PPLX (one or both ends yellow), Reading & Northern (orange or blue panel), Reading, Black Dimensional Data Only, and Brown Dimensional Data Only.



With delivery expected in early 2023, the cars feature roller bearing trucks with metal 36" wheels, interior &

slope sheet braces, and knuckle couplers.



Also announced is a 40' boxcar model. Roadnames are AT&SF Super Chief slogan, Baltimore & Ohio Timesaver, Buffalo Creek, Central of

Georgia w/hatches, Chicago & North Western, Erie, Lehigh New England, New York Central Pacemaker, Northern Pacific w/hatches, Pittsburgh & Lake Erie, Southern Pacific, Southern w/hatches, and Western Ry. Of Alabama.



The boxcars come with road specific doors, metal wheels, and knuckle couplers. Delivery is expected in early 2023. Preorders for both the

hoppers and boxcars are due May 13, 2022.

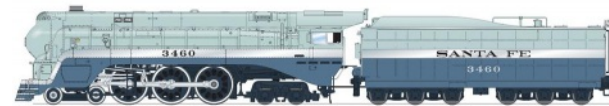
Info: bowser-trains.com



R. Bale

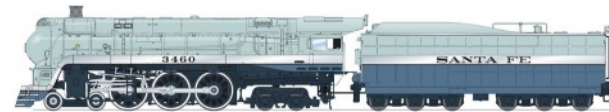
SANTA FE BLUE GOOSE

Baldwin Locomotive Works delivered six 4-6-4 Hudson steam locomotives to the Santa Fe Railroad in 1937. Dubbed the 3460 class, ATSF ordered the high-drivered Hudsons to provide faster passenger service for the relatively flat run between La Junta, Colorado and Chicago, Illinois. The big oil-fired 3460s were equipped with SKF roller bearings on every axle including the huge 84" drivers. The 3460s were equipped with Santa Fe-style telescoping stack extensions that elongated the stack to clear smoke better and could be lowered to pass under low bridges and tunnels. The first locomotive in the series, No. 3460, was built streamlined and painted light robin's egg blue and silver. It became known as the "Blue Goose". It was the Santa Fe's only streamlined steam locomotive and was featured extensively in railroad publicity. To ease maintenance, the skirting beneath the cab and around the cylinders was removed in 1939.

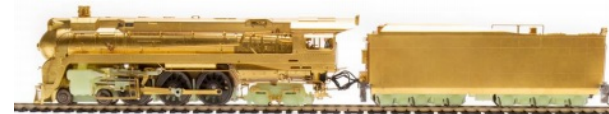


Broadway Limited has scheduled a late

summer delivery for several HO scale versions of Santa Fe's distinctive 4-6-4 Blue Goose. The HO scale model will be available as delivered in 1939 with skirting over the cylinders, below the running board and beneath the cab.



Additional versions representing No. 3460s skirt-free appearance in 1939, 1941, 1950, and 1953 will also be available.



Broadway Limited will offer the Santa Fe 3450 without

skirting in three fantasy schemes: black with stainless trim, black with aluminum lettering, and painted brass.

The HO scale locomotive is composed of a hand-crafted brass boiler, cab, and tender body, mounted on die cast chassis. Each version will be equipped with Paragon4 Sound/DC/DCC sound system with synchronized puffing smoke and integral GoPack capacitors.



Arriving in July 2022 is a GE ES44AC equipped with Paragon4 sound and DCC and integral GoPack

capacitors. Roadnames in this release are BNSF, CSX Pride in Service-Veterans, CSX Pride in Service – Law Enforcement, CSX Pride in Service – First Responders, GE Demonstrator, KCS, Norfolk Southern, Conrail, Southern, Pennsylvania, Union Pacific, ATSF, Great Northern, Canadian National, Union Pacific, Southern Pacific and ATSF.



The models include all-wheel electrical pickup, an ABS body and die cast chassis, and separately

applied details such as handrails, grab irons, horn, bell, wipers, and etched metal grills. Individually controllable lights include the headlight, rear light, cab light, numberboard lights, and front ditch lights.



Equipped with metal Kadee-compatible knuckle couplers, the models have a minimum operating radius of 18 inches.



Arriving in August 2022, BLI is introducing a run of 2-8-0 Consolidation steam locomotives in HO scale. Equipped with Paragon4

sound and control system, the model includes synchronized puffing smoke and chuff sound.



Roadnames for this run are ATSF, Bangor & Aroostook, Canadian National, Canadian

Pacific, Chicago & Alton, Chesapeake & Ohio, Central Georgia, Great Northern, Lake Superior & Ishpeming, Seaboard Air Line, Southern, Toronto Hamilton & Buffalo, Union Pacific, Western Maryland, and painted unlettered.



The model features a 5-pole can motor with skew wound armature, a die cast boiler, tender

body and chassis, prototypical light operation with a separately controllable headlight, reverse light, cab light, and front marker lights. Separately applied details such as handrails, grab irons, ladders, piping, cab glass, whistle, brass bell, and markers are installed at the factory.



A Union Pacific FEF-2/FEF-3 in HO scale is due in

September 2022. Seven different Union Pacific road numbers and paint schemes will be available, as well as an unlettered model.



The FEF-2 model includes a double- or triple-stack

depending on road number, individual side rods, accurately modeled turret casing, centipede-style oil tenders, options for Worthington and Sellers feedwater heaters, wind wings depending on road number, and Walschaerts valve gear.

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FEF-3 #844 includes a Heritage Fleet containment dam on its tender, a Mars light, and a different pilot and front end from the FEF-2 model.



BLI has announced a November/December 2022 availability for an HO scale EMD GP30 model. Roadnames in the

first release will be ATSF (blue warbonnet), BNSF (H3 swoosh), Baltimore & Ohio, Chesapeake & Ohio, CSX (YN2), DRGW, Norfolk & Western, Pennsylvania RR, Seaboard Air Line, Southern, UP, and undecorated.



Featuring Paragon4 sound and control with built-in capacitors and Rolling Thunder, the models will have road specific

details such as truck sideframes, dynamic brake hatch, roof fan arrangement and type, long and short hood detail arrangement, horn type and location, bell location, and many other details. The model will be equipped with metal Kadee compatible couplers and all wheel electrical pickup.

Info: www.broadway-limited.com



ExactRail currently has available the fifth release of the Trinity 64' TRINCool reefer in HO scale. The paint schemes in

this release are Union Pacific/ARMN in the 2005 'as-delivered' scheme and the mid-2010s patched scheme with the road number located high on the body. Each of the two paint schemes is available in 12 road numbers.

The models feature separately applied release valve rods, a safety chain on the A-end platform, reporting marks on the

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truck side frames, etched metal filler caps, separately applied and painted temperature box, and other separate details.



Also shipping from ExactRail is the Bethlehem 3483 hopper in Chicago & North Western (two schemes) and Reading & Northern (two schemes), with multiple road numbers available for each scheme. Two coal loads, heap and flood, are included with each car. The models are equipped with Kadee #158 couplers, ASF 100-ton Ride Control trucks, and CNC machined metal wheels.



Finally, ExactRail is shipping an HO scale PS-2CD 4427 covered hopper in eight paint schemes - Far-Mar-Co. (two schemes), Kansas City Southern, Milwaukee Road, Santa Fe, TLDX - Peavy Co., TLDX - C-G-F Grain Co., TLDX - West Central, and Undecorated.



The Platinum Series model is equipped with Kadee #58 couplers, ExactRail 100-ton ASF Ride Control trucks, CNC machined metal wheels, Apex running boards, and many other details.

Info: www.exactrail.com



Hornby-Rivarossi plans to release an HO scale ready-to-run model of a 50' boxcar in June. Models decorated for

Southern Pacific and Milwaukee Road will have running boards and 10' Youngstown sliding doors.



A Pennsylvania car also has Youngstown sliding doors but no running board.



Completing this release is a Denver & Rio Grande Western car with 10' plug doors and without running boards.



All versions have full height cast on ladders, knuckle couplers and metal wheels.
Info: www.walthers.com



InterMountain Railway is booking reservations for another release of an HO scale 10,000 gallon welded tank car.



Six road numbers will be available for each of the following decorating schemes: ANPX, GATX Dupont, SCJX Gulf, SHPX, UTLX, Anchor, Deep Rock, Frisco SL-SF, Fruit

Industries Ltd, Roma Wine, Skelgas, US Army, and Warren.



The HO scale ready-to-run models will come with Kadee couplers and machined metal wheels.



InterMountain has also announced a new run of Bi-Level Auto Racks, with reservations due by May 31st. Roadnames include CSX-TTGX,

Canadian National, Ferromex-TTGX, SP-TTGX, Canadian Pacific, BNSF (black & white herald), Conrail – TTGX, and TINX-TTGX. Four numbers will be available for each roadname.



The HO scale models feature etched metal panels, formed wire

details, metal wheelsets, and Kadee couplers.

Info: www.intermountain-railway.com



Kadee has released a Baltimore & Ohio 40' PS-1 boxcar. Equipped with an 8' Superior sliding door, the prototype was built in 1957 as part of the 468800-468919

series and shipped in October 1968.

Info: www.kadee.com



KatoUSA has announced plans to release its HO scale version of the GE P42 Genesis

locomotive in several 50th Anniversary paint schemes. The release will include a new Operation Lifesaver Amtrak P42 and a new production of Phase V late locomotives.



Genesis P42 No. 100 in Midnight Blue scheme, No. 46 in Amtrak Phase V, and locomotive No. 161 in Amtrak Phase I paint were all scheduled for release with 50th Anniversary logos in March.



Amtrak locomotive No. 108 in Phase VI paint, and No. 160 wearing the Phase III scheme are scheduled for release in July.



Phase V locomotives Nos 17 and 180 will be available in August along with Amtrak No.

203 in a scheme promoting Operation Lifesaver. The release dates in this report are for DC locomotives. Locomotives with ESU LokSound DCC and sound are scheduled for release one month later.

Info: www.katousa.com



R. Bale

THE UAC TURBOTRAIN

The TurboTrain was a high-speed gas turbine train manufactured by United Aircraft (UAC). It was the first gas turbine powered equipment approved for passenger service and the first tilting trains in North America. The TurboTrain operated in the United States between 1968 and 1976, and in Canada between 1968 and 1982. To participate in the DOT's 1960s Northeast Corridor Project, UAC purchased several patents from the Chesapeake & Ohio Railway involving Talgo cars that shared a single truck between a pair of tilting cars. Although the C&O design used conventional diesel-electric power, UAC's TurboTrain utilized Pratt & Whitney turbine engines. The turbines, which functioned as a torque coupler, did not require a transmission and drove the powered wheels directly. For the heavily travelled Montreal-Toronto run, Canadian National ordered five seven-car TurboTrains in 1966. To promote the new service as an entirely new form of transit, CN's ad agency dropped Train from the name, and UAC's revolutionary trainset with low profile cars that tilted and power units with an unorthodox fiberglass clamshell nose, became known simply as the Turbo. Technical problems, including brake systems freezing in winter, forced a suspension of Turbo service in January 1969. Operations resumed 17 months later, however technical problems again caused CN to withdraw all Turbos from service. During the downtime five seven-car sets were converted to three nine-car sets. The remaining power and passenger cars were sold to Amtrak as two four-car sets. The Turbos operated until 1982, when they were replaced by Bombardier LRC trainsets that employed conventional diesel powered locomotives.



Rapido Trains has announced plans to release a fully revised version of the United Aircraft Turbo Train. Designated Turbo 2.0, the new HO scale model will correct all of the drive system problems that existed in the original Turbo Train that Rapido released in 2008. The release will include three different power dome cars and six different intermediate cars. A newly tooled Canadian Turbo coach with additional luggage space, designated IC-34, will also be available in this new release.



Paint schemes for Rapido's Turbo 2.0 will include United Aircraft/US DOT, Penn Central/US DOT, Canadian National, VIA Rail, and both early and late Amtrak schemes.



Turbo 2.0 features a new drive system and redesigned single axle trucks with needlepoint axles and all-wheel electrical pickup. Additional features include golden-white LED headlights and a redesigned, roof-mounted SMD interior lighting system. Sound will be provided by ESU LokSound V5 decoders with speakers in each power dome car.



Rapido's Turbo 2.0 will be available in three-car and five-car sets, with four-car Canadian add-on sets to make the complete nine-car train. Delivery is planned for mid-2023.





boxcars GN built in 1953 and 1955 in its shops in Saint Cloud, MN.



had diagonal panel roofs, 6' Youngstown sliding doors, and ASF Ride-Control trucks with metal wheelsets.

The cars were delivered in Great Northern's mineral brown paint scheme with a large goat head. Over the years, cars from both groups were repainted into the various colorful schemes that GN developed through the late 1950s and into the 1960s.



Rapido has added another model to its growing list of essential freight cars. The latest addition is a 40' Great Northern 12-panel boxcar with a straight side sill. The new HO scale model replicates two groups of

Cars in the 1953 group (series 21450-21939) received early versions of Improved Dreadnaught ends with smoothly tapered main ribs. Cars built in 1955 (series 5000-5499) had the later version of Improved Dreadnaught ends with the main rib shaped like a rolling pin. Both groups

Models with the early Improved Dreadnaught ends will be available for Great Northern in Mineral Red, Chinese Red, Glacier Green, and Green & Orange.

Decorating schemes for cars with late versions of the Improved Dreadnaught end include Mineral Red, Big Sky Blue, Green & Orange, and

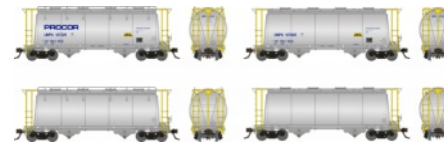
Chinese Red in both angled and standard lettering. Models from both groups will be available undecorated.



Rapido is putting the finishing touches on an all-new Procor 3000 cu. ft. covered hopper. The HO scale model replicates the more than 1,000 aluminum prototypes built by Thrall and National Steel Car to handle sodium chlorate in crystal form.



100-ton Ride-Control trucks with machined metal wheels and HydraShox hydraulic snubbers.



Models available on the initial release will include UNPX / PROCOR cars representing 1998 equipment with handrails, and UNPX post 2000 cars without

handrails. Painted unlettered models will also be available. Rapido is booking reservations now with delivery TBA.

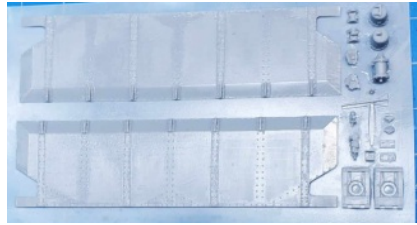
Info: www.rapidotrains.com



Resin Car Works has released a kit for the ATSF Fe-6 through Fe-20 50' Whalebelly rebuilt automobile boxcar with reversed Murphy steel ends. An upgraded release of a former Sunshine Models kit, the kit features a one-piece carbody, Tichy Train Group ladders and brake hardware, Tahoe Model Works #112 USRA 50-ton Andrews truck sideframes, and Microscale decals. Two kits are offered with different decal sets. Couplers are not included.



This Whalebelly boxcar kit represents 1209 wood-sheathed furniture and automobile boxcars that were rebuilt between 1936 and 1940 as double-door steel cars with large underframes, inspiring the nickname "Whalebelly" or "Battleship" cars. The cars had an interior length of 50' 6".



Also from Resin Car Works is a Mini-Kit to modify an Accurail or Tichy USRA hopper into a New York Central 55-ton Enterprise Railway Equipment offset hopper. Built between 1924 and 1927, 2,050 of these cars were originally assigned to the CCC&StL, Michigan Central, NYC, and Peoria & Eastern Railroads. The kit consists of resin car sides, brake hardware, and other detail parts, as well as decals.

Info: www.resincarworks.com



R. Bale

EMD SDL39 DIESEL LOCOMOTIVE

The SDL39 locomotive consisted of a group of just 10 road switchers Electro Motive Division built in 1969-72 for the Chicago, Milwaukee, St. Paul & Pacific Railroad. The prime mover was a 2,300hp EMD 645E3 12-cylinder diesel engine. With a goal of achieving a relatively light weight locomotive to replace its small fleet of aging Alco RSC-2s, CMStp&P ordered SD38s on a short 55' 2" frame and specified FlexiCoil-C trucks. The result was the SDL39, which wore a variety of liveries as their ownership changed due to mergers. In addition to the original Milwaukee Road scheme, one of which was wrecked, the nine surviving SDL39s were decorated for Soo Line, Wisconsin Central, and FEPASA - Ferrocarril del Pacifico, the freight division of the national railway of Chile.



Scale Trains has released its HO scale Museum Quality model of an EMD SDL39 diesel locomotive.



Decorating schemes available on this initial release of the Museum Quality model include Milwaukee Road in six road numbers with a Leslie S-3L-R, Soo Line in three numbers, and FEPASA in two road numbers with security grilles over the windows.



SDL39s decorated for Wisconsin Central are available in four road numbers with variations in cream or yellow paint and with and without operating ditch lights.



The models are available for DC operation (DCC ready) and with ESU LokSound 5 DCC and Sound decoder with dual cube speakers.



A limited run of Rivet Counter HO scale CSX Pride in Service GE ES44 GEVO locomotives are now in production for a summer delivery. The locomotives in the run are the #3194 - "Spirit of Law Enforcement" with either red and blue ditch lights or clear ditch lights, #911 - "First Responders," and #1776 - "Armed Forces."



Available in both DCC & sound equipped and DC/DCC Ready versions, the locomotives feature

operating LED alternating ditch lights, LED front, rear, and side walkway lights, an LED ground light, and numerous factory-applied details.



A portion of the proceeds from the sale of these locomotives will benefit several non-profit organizations – Blue Star Families, First Responders Children's Foundation, Operation Homefront, Operation Gratitude, and the Wounded Warrior Project.



A second run of the Kit Classics line CB&Q Havelock Shops 52' 6" gondola kits is due to arrive in October 2022. Roadnames in this run are Burlington Northern, BNSF, B&O/Chessie System, Chicago Burlington & Quincy, Dakota Minnesota & Eastern, and Milwaukee Road.



The gondola kits can be assembled with a small Phillips screwdriver and include a separately applied handbrake wheel, Barber S-2 trucks with raised lettering and foundry data, and 33" .110" machined metal wheels.

Preorders for the Pride in Service ES44 GEVOs and Havelock Shops gondola kits are due by April 25, 2022.

Info: www.scaletrains.com



Tangent has completed a second production run of its HO scale Pullman Standard 3526/3600/4000 cu. ft. triple-bay coal hopper cars. To

correctly replicate the prototypes, Tangent tooled four dimensionally correct car body variations with both trapezoidal and flat side panels, as well as offset and non-offset truck center arrangements.



The list of road names in this release begins with a black B&O hopper with the Chessie cat logo and Chessie System stenciling in the upper left side panels. Tangent's Southern version of the 3600 cu. ft. hopper represents cars delivered with a low-mounted handbrake housing. Tangent is offering Burlington Northern cars with both the single and double rotary paint schemes.



Completing this release is a Chicago & North Western version from the CNW's 1980s Clinton green and yellow repaint program.



Noteworthy details on all of Tangent's Pullman-Standard triple-bay coal hoppers include scale coupler lift bars, rubber air hoses, see-through brake platforms, hidden weights, Kadee couplers, and 100-ton Barber S-2 trucks with machined metal wheels and rotating bearing caps. Info: www.tangentscalemodels.com

Walthers has announced three new HO scale Mainline items including a locomotive and two freight cars.



Scheduled for release this month is a 60' National Steel Car 5150 cu. ft. triple-bay covered hopper. The HO scale model is based on a car built by NSC in the mid-1990s.

The nicely detailed body features raised panel weld seams. Additional details include a thin-profile roof walk, trough-style roof hatches with handles, and detailed discharge outlets.

The ready-to-run model comes with Proto MAX™ metal knuckle couplers and 100-ton roller-bearing trucks with 36" machined metal wheelsets.

Road names include BNSF, ADMX-Archer Daniels Midland, WFRX-GrainsConnect, ICMX-Cargill, Canadian Pacific, and Union Pacific.



Walthers is quoting a June delivery date for a new Mainline series of modernized 40' AC&F 10-panel welded boxcar with 8' Youngstown slicing door. The model is based on

boxcars rebuilt to comply with updated safety standards including removal of running boards, and shortening ladders on the A end. The B end retained the original tall ladder to provide access to the hand brake. Details include Improved Dreadnaught 4/4 ends, Stanray diagonal panel roof. The model comes with 33" metal wheelsets and Proto MAX metal knuckle couplers.



Road names on this initial release will be Illinois Central, Reading, Penn Central, and Southern Railway.



Also coming from Walthers in June is a new production run of EMD SD70ACe diesel locomotives. The Mainline series

HO scale model features working front ditch lights, constant and directional LED lighting, and headlight housings positioned high or low depending on the practice of the prototype road being modeled.



The economy priced model features the same drive system as WalthersProto series models including all-wheel drive and

electrical pickup. Walthers offers an EMD Detail Kit (Item 910-251) for hobbyists wanting to upgrade the model. Drill starter points molded into the body accurately identify the

location of grab irons. Standard DC versions and units with ESU Sound and DCC will be available.



Road names in the June release will be BNSF Railway (H3 scheme), Canadian National (website scheme), CSX Transportation, Norfolk

Southern, and two versions of Union Pacific with a choice of red or yellow sill striping.

Info: www.walthers.com

N SCALE PRODUCT NEWS

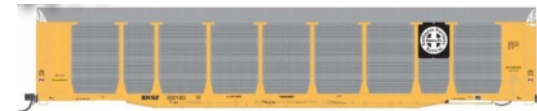


Athearn has scheduled the release of a PS 4427 covered hopper in N scale for May 2023. The prototype was introduced in 1964 and can still be found in service today.

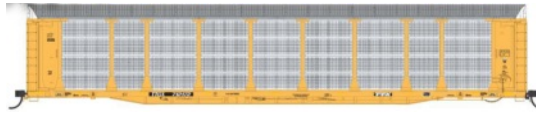


The models feature body mounted McHenry knuckle couplers and screw mounted roller bearing trucks with 36" machined metal wheels. The models will be available in individual and 3-packs. Pre-orders are due to Athearn by April 29, 2022.

Info: www.athearn.com



InterMountain has announced a new run of N scale Fox Valley Models Bi-Level Auto Racks. Roadnames in this run include CSX-TTGX, Canadian National, Ferromex-TTGX, SP-TTGX, Canadian Pacific, BNSF (Black & White Herald), Conrail-TTGX, and TINX-TTGX.



Four numbers will be available for each roadname. The models feature finely molded details, etched metal panels, formed wire details, die-cast underframe, metal wheelsets, and Micro-Trains trucks & couplers.
Info: www.intermountain-railway.com



One of the founders of **Jacksonville Terminal Company (JTC)** has family connections to Ukraine, and in response to the current events there has produced a 2-pack of Ukrainian Liski 40' high cube corrugated side containers. 100% of the sales of this product will be donated to a charity that is providing direct assistance to the children of Ukraine.

JTC has also released two sets of American Red Cross containers, the FMS 10/11 20' standard corrugated container and the FMS 12/13 40' corrugated high cube containers. All proceeds from the sales from these containers will be donated to the Red Cross trust fund that is supporting Ukraine.



JTC's March N scale 40' high cube container releases include MOL, Hapag-Lloyd (HLXU), Hapag-Lloyd (HAMU), Seaco (HJMU), Seaco (SEGU), CMA

CGM, Maersk (MRKU), and Maersk Line (MSKU).
Info: www.jtcmodeltrains.com



Heading the list of new ready-to-run N scale models from **Micro-Trains** is a Canadian Pacific wood caboose with an offset cupola. The model comes with Bettendorf-style solid-bearing trucks.

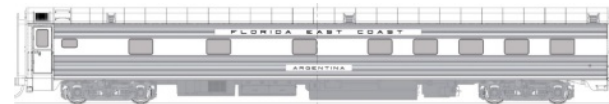


Micro-Train has also released a 3-pack of Deep Rock tank cars.



Micro-Trains N scale model of a Great Northern stock car comes with a load of cattle.

This ex-SCL boxcar patched for CSX, represents a well-traveled car built in the 1950s. It has been updated with the running board removed and ladders lowered.
Info: Contact a dealer.



Railsmith Models is taking orders for the Florida East Coast Pullman

sleepers Argentina and Columbia. Delivered in 1949, the stainless-steel cars were used on trains such as The Florida Special, the Royal Palm, The Southwind, and The Champions.



Railsmith is also taking orders for Milwaukee Road

duplex sleepers. Built to floor plan 4192, the Minnesota River and the Zumbro River were two of the last cars built for The Milwaukee Road in 1955. They served on Overland 'City' trains.



Orders are being taken for Great Northern's Empire Builder 'River' class sleepers. The Spokane River, Pend Oreille River, and Snake River were built by Pullman-

Standard in 1951. The Snake River, which is available separately, was owned by the Spokane Portland & Seattle and was part of the SP&S contribution to the Empire Builder. All cars have an expected delivery of fourth quarter 2022.



Railsmith is taking deposits for N scale F7A locomotive and a F7A & B set decorated for

Northern Pacific. The sound and DCC equipped Broadway Limited locomotives go with Railsmith's 1947 North Coast Limited and Mainstreeter series collections. The F7A will have the number 6510A with the dummy F7B numbered 6510B. Another F7A, available separately, has number 6510C. Photos are of a previous F3 release.

Info: www.lowellsmith.net



Scale Trains has announced a new run of N scale Rivet Counter GE Dash-9 diesel

locomotives. The run will include Santa Fe Warbonnets with new road numbers, BNSF "Pink Bonnets" representing ex-Santa Fe locomotives with faded paint, Norfolk Southern C40-9 "Top Hat" standard cab Dash-9s, and two Union Pacific ex-

Southern Pacific schemes, both the armour yellow and patched bloody nose schemes.



The new run of Dash-9s come equipped with LED headlights, ditch lights, and number boards. Factory-applied details include wire grab irons, trainline hoses, MU cables, uncoupling levers, windshield wipers, mirrors, sunshades, and brake wheels.



DCC & Sound equipped locomotives come with ESU LokSound 5 micro decoders and include road specific horns, bells, and other sounds.

Info: scaletrains.com

NEW STRUCTURES & SCENIC SUPPLIES

Frenchman River Model Works has introduced the HO scale Williams Market, a Thomas Yorke designed resin kit. The kit consists of four resin walls, two resin false front pieces, four



resin roof pieces, a resin concrete foundation, resin details, and laser cut window glazing. Also included are decals and aluminum flashing. The dimensions of the structure are 2.25" wide, 5.675" long, and 4.25" tall.

Info: www.frenchmanriver.com





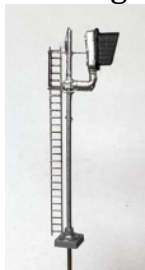
SceniKing® has released four new O scale vintage storefront backdrops. At 72" for each backdrop, they can be assembled into a seamless backdrop of almost 24 feet. The structures on the backdrops are designed to be cut out and rearranged or mounted independently.



Additionally, SceniKing® has introduced twenty new N scale products to its online catalog of scenes, creating a total of 24 linkable Junior scenes and 22 Senior items, which can be combined up to 18 or more feet of city scenes.

Info: www.sceniking.com

Showcase Miniatures has introduced D-Type (Darth Vader) color-light signals in N and HO scales. A complete N scale signal assembly includes a 566 ladder kit, 572 color-light signal head kit, and a 0009 LED assembly. The pictured model is an N scale signal assembled by Peter Borchers, who has also created a step-by-step video tutorial. Showcase Miniatures expects to be creating N scale versions of most of the HO scale signal kits.



Info: www.showcaseminiatures.net



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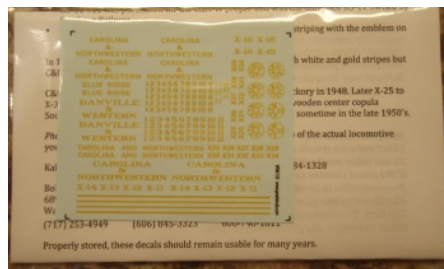
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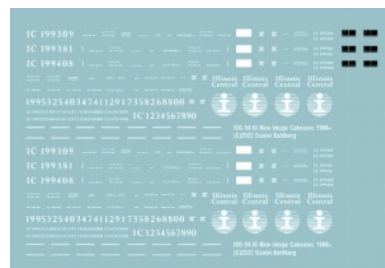
NEW DECALS, SIGNS AND FINISHING PRODUCTS



N scale decals for Carolina & Northwestern Alco locomotives (RS-2's 1-4, RS-3's 5-10 and RS-11 #11) and cabooses (wood X11-X16 and steel bay window X25 to X34) are available now from **Great Decals**. According to owner Bill

Mosteller, each set will decorate one locomotive and two cabooses.

Info: greatdecals.com



Dan Kohlberg has released new HO scale water slide decals for Illinois Central "New Image" gray 100-ton covered hoppers 1988+, and Illinois Central "New Image" gray cabooses. Each set includes enough material to letter three cars. Both of these new lettering

lets are professionally printed by Cartograf in Italy.

Info: www.icgdecals.com



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SELECTED EVENTS



Model Railroad Hobbyist | April 2022

APRIL

Due to COVID-19 restrictions, please check with any organization hosting an in-person event for the latest status of the event.

Ongoing 2022

ONLINE, Zoom, dates vary, see website. Operation Special Interest Group Meetups – limited attendance available.

Info: www.opsig.org/Virtual

Archive: www.opsig.org/Virtual/Past

ONLINE, Zoom & YouTube, Wednesday & Saturday, see Facebook page. "New Tracks" Meetup, hosted by Jim Kellow, MMR.

Info: newtracksmodeling.com

YouTube: www.youtube.com/channel/UCMA_VhPb5pjdkAYTdXLceJA

ONLINE, Facebook & YouTube, dates vary, see Facebook page. "NMRax" organized by Gordy Robinson, Martyn Jenkins, Gert Muller, Jordan Kramer.

Info: www.facebook.com/groups/nmraxgroup

ONLINE, YouTube, every other Saturday. 4th Division, Pacific Northwest Region, NMRA hosts online layout tours and clinics.

Archive: www.youtube.com/c/4DPNRMovies

ONLINE, Zoom, Second Tuesdays, 8pm EST. "Off the Beaten Track" featuring Narrow Gauge layouts, clinics and manufacturers.

Info: groups.io/g/NNG

AROUND THE USA, IN-PERSON, Various dates.

ScaleTrains.com Road Trip.

Info: www.scaletrains.com/roadtrip

April – May 2022

ONLINE ZOOM AND CANADA, BRITISH COLUMBIA, VANCOUVER AREA, May 5, 12, 19, 26, 27, 28, 29, 2022. Railway Modellers Meet of British Columbia 2022.

Queensborough Community Center, 920 Ewan Avenue, New Westminster.

Info: railwaymodellersmeetofbc.ca

CANDA, SASKATCHEWAN, REGINA, April 30-May 1. Regina Railfest 2022. Caledonian Curling Club, 255 Sandra Schmirler Way.

Info: reginarailfest.com/railfest-2022

NEW ZEALAND, CHRISTCHURCH, April 15-18, 2022. Back on Track National Model Railway Convention 2022. St. Andrews College, 347 Papanui Rd.

Info: www.modelrailcon.nz

NEW ZEALAND, DUNEDIN, May 7-8, 2022. Dunedin Model Train Show. Taieri Bowling Club, 12 Wickliffe Street, Mosgiel.

Info: dunedinmodeltrainshow@gmail.com

CALIFORNIA, ROHNERT PARK, April 21-24, 2022. Return to the Redwoods, Pacific Coast Region NMRA Convention. Doubletree by Hilton Hotel Sonoma Wine Country, One Doubletree Drive.

Info: www.pcrnmra.org/conv2022

CALIFORNIA, SANTA CLARA, May 26-28, 2022, O scale - S scale - Narrow Gauge West. Hyatt Regency Hotel, 5101 Great America Parkway.

Info: www.oscalewest.com

INDIANA, INDIANAPOLIS, May 18-23, 2022. Indy Junction 2022, the Midwest, Mid-Central, and North Central Regions NMRA Convention. Indianapolis Marriott East, 7202 East 21st Street.

Info: www.indyjunction2022.org

INDIANA, INDIANAPOLIS, May 18-22, 2022. RPM Conference at Indy Junction 2022.

INDIANA, PERU, April 16, 2022. Mami County Model Train Show & Swap Meet. Miami County Fairgrounds, 1029 W 200 N.

Info: happeningnext.com/event/miami-county-train-show-and-swap-meet-eid3a08glllp

MAINE, WESTBROOK, May 14, 2022. Southern Main Model Railroad Club Train Show. Westbrook Community Center, 426 Bridge St, off exit 48 I-95).

Info: southernmainemrc.wordpress.com

MINNESOTA, SAINT CLOUD, May 14, 2022. Granite City Train Show, River's Edge Convention Center, 10 4th Avenue South.

Info: www.granitecitytrainshow.com

MICHIGAN, NEW BALTIMORE, April 16, 2022. New Baltimore Model Railroad Show. VFW Lempke-Blackwell Post 7573 – 35011 23 Mile Rd.

Info: vfw7573.org/di/vfw/v2/default.asp?pid=105236

NEW YORK, LONG ISLAND, May 13-15, 2022. IslandOps model railroad operations weekend.

Info: www.islandops.org

OHIO, COLUMBUS, April 16, 2022. Buckeye Train Show, Ohio Expo Center, Lausche Building, 717 East 17th Avenue.

Info: ohioexpocenter.com/event/buckeye-model-train-and-railroad-show

OREGON, EUGENE, May 10-14, 2022. Make Tracks to Eugene, PNR 2022 Regional Convention, Valley River Inn, 1000 Valley River Way.

Info: pnr.nmra.org/1div/Eugene2020/home.htm

PENNSYLVANIA, HARRISBURG May 11-14, 2002. Pennsylvania Railroad Technical & Historical Society 2022 Annual Meeting. Sheraton Harrisburg Hershey, 4650 Lindle Road.

Info: www.prrths.org/annual

TEXAS, TEMPLE, May 5-7th, 2022. Where Modeling meets Prototype Convention, Lone Star Region Regional Convention, Mayborn Convention Center, 3303 N 3rd Street.

Info: lsr2022.org

WYOMING, CHEYENNE, May 14-15, 2022. Sherman Hill Train Show. Event Center – Archer, 3801 Archer Parkway.

Info: www.shermanhillrails.org/trainshow

WYOMING, CHEYENNE, May 11-14, 2022, Union Pacific Historical Society Convention. Red Lion Hotel, 204 West Fox Farm Road.

Info: uphs.org/conventions/future-conventions

Future 2022-2023 by location

UNITED KINGDOM, CREWE, November 4-6, 2022, Crewe North Junction 2022, British Region NMRA Regional Convention. The Heritage Center, Emperor Way, Crewe Business Park, CW1 6BD.

Info: convention.nmrabr.org.uk

CALIFORNIA, SAN DIEGO, September 7-11, 2022. Back on Track in 2022, Pacific Southwest Region convention. Four Points by Sheraton San Diego, 8110 Aero Drive.

Info: web.cvent.com/event/1474b6bc-b18a-49ec-9b4e-9f58fb4665cd/summary

COLORADO, LAKEWOOD, June 2-5, (Proposed) Sn3 Symposium. Sheraton Denver West, 360 Union Boulevard.

Info: groups.io/g/NNG/topic/87954737#1335

CONNECTICUT, WINDSOR, September 15-18, 2022. Connecticut Yankee, Northeastern Region Convention 2022. Marriott, Hartford/Windsor Airport, 28 Day Hill Road.

Info: ner-conventions.org/connecticut-yankee

INDIANA, FRANKLIN, August 27-28, 2022. NMRA CID Franklin Train Show. Johnson County Fairgrounds, 250 Fairground St.

Info: www.cidnmra.org

MARYLAND, HUNT VALLEY (TIMONIUM), October 13-16, 2022. Mid-Atlantic RPM meet. Delta Marriott Hotel and Conference Center, 245 Shawan Road.

Info: www.marpm.org

MARYLAND, TIMONIUM, October 15-16, 2022. Great Scale Model Train and Railroad Collectors Show, Maryland State Fair, 2200 York Rd.

Info: www.gsmts.com

MASSACHUSETTS, ORLEANS, December 18th, 2021, Nauset Model Railroad Club Open House. Rear of Hiltop Plaza, 180 Route 6A.

Info: www.nausetmodelrrclub.com

MISSOURI, St. LOUIS, August 7-14, 2022, NMRA National Convention and National Train Show. St. Louis Marriott Grand Hotel, 800 Washington Avenue.

Info: gateway2022.org

NORTH CAROLINA, CHARLOTTE, October 20-23, 2022. Carolina Special Look South 2022, Mid-Eastern Region Regional Convention. Hilton University Place, 8629 M Keynes Drive.

Info: www.carolinasouthern.org/MER2022.html

OHIO, MIDDLEBURG HTS., 1 October 2022. The Great Berea Train Show. Cuyahoga County Fairgrounds, 19201 Bagley Rd.

Info: thegreatbereatrainshow.org

PENNSYLVANIA, HARRISBURG, June 10-11, 2022. 2022 Harrisburg Narrow O Summer Meet. New Hope Church, 584 Colonial Club Drive.

Info: www.facebook.com/modelingevents

PENNSYLVANIA, HAMBURG, September 16-18, 2022. Reading Railroad Modelers Meet X, hosted by the Reading Company Technical & Historical Society and the Anthracite Railroads Historical Society. Reading Railroad Heritage Museum, 500 S. Third St.

Info: readingrrmm.com

TENNESSEE, JOHNSON CITY, June 3-4, 2022, George L. Carter Railroad Museum Big Train Show, East Tennessee State University Mini-Dome, State of Franklin Road.

Info: www.etsu.edu/railroad/events.php

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TENNESSEE, NASHVILLE, June 15-19, 2022. 28th Annual National N Scale Convention, Sheraton Music City, 777 McGavock Pike.

Info: www.nationalscaleconvention.com

TEXAS, GRAPEVINE (Dallas Area), Summer 2023. NMRA National Convention, Gaylord Texan Resort & Convention Center, 1501 Gaylord Trail.

Info: www.2023texasexpress.com

VERMONT, WHITE RIVER JUNCTION, October 16, 2022. Upper Valley Model Railroad Show, sponsored by the Connecticut Valley Model Railroad Club. Connecticut Valley Auto Auction Building, 1567 VT-14.

Info: cvrr.railfan.net/cvmrr

WASHINGTON, TACOMA, September 1-4, 2022. 42nd National Narrow-Gauge Convention, Hotel Murano, 1320 Broadway.

Info: www.seattlenngc.com ■

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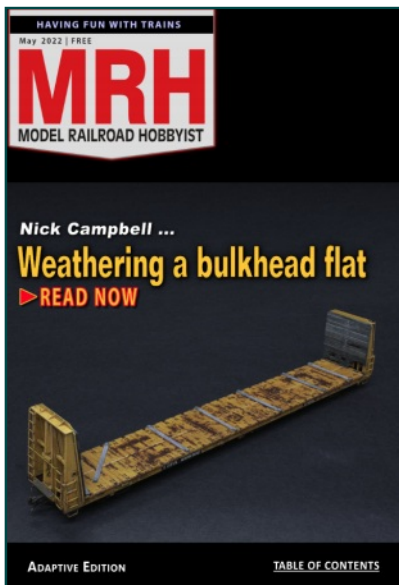
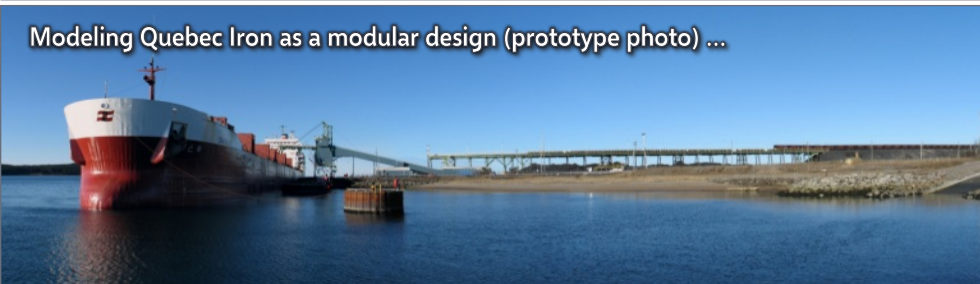
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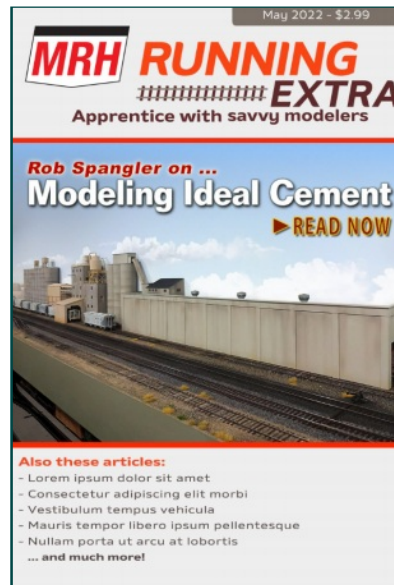
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