

#124 SEPTEMBER 2020

N SCALE RAILROADING

1:160 SINCE 2000

Kim Saign

- Kitbash Bluford Shops
Hoppers into Sand Cars

Kim Saign

- Bonus: Glue syringe for
pinpoint gluing!

Al Lowe

- Module Lighting for
Train Shows

George Hollwedel

- Transition Between Code 80
and Code 55 Track

Duncan Cabassi

- Locomotive wheel
Cleaning tool

Al Frasch

- Modesto and Empire Traction

N SCALE RAILROADING WELCOME!

Cover. A scene from Al Frasch's new Modesto & Empire Traction. See page xx.

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∞
AND SEE WHAT
HAPPENS!**

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Welcome to *N Scale Railroading* #124, the September, 2020 issue.

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Page 21. **New Products.**

Page 32. Often the venues used by trains shows are not well lit. **A Lowe** shares how his group created their own portable layout lighting that works very well. An amazing DIY (do it yourself) project.

Page 38. **George Hollwedel** shares how he transitions between code 80 and code 55 track.

Page 40: **Duncan Cabassi** shares his very efficient DIY mechanism he uses to clean locomotive wheels.

Page 43: **Al Frasch's** Modesto & Empire Traction is a modern switching layout that is relatively rare in N scale. Nice!

Page 56. **NHorizons**
Page 57 **NCalendar** and **Observations.** ▶

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N
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Northern Pacific Sand Cars

by Kim Saign/ Images by author unless noted otherwise



Image 01. Recently there was a discussion about NP sand cars on the NP Tell Tale Groups.io list. Prior to this I was unaware the NP was using somewhat unique cars for sand. Basically they used USRA 55 ton 2 bay hopper clones from NP series 70000-70048. They were built in 1922 by Pressed Steel Car for the NP. At their Brainard shops in 1957 they put a roof with 4 round

hatches and a running board on top. Then changed the outlet bays so a hose for sand could be attached for removing the sand. After the conversion the cars were renumbered into the 2074xx series. As of 4/1974 the BN roster still shows 36 of these listed. Several of these made their way to the Montana Rail Link so they span a long time in service. (Photo by Ron Hawkins, used with permission)

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Atlas Master N Trinity 25,500 Gallon Tank Car - ADMX "Kung Fu Fighters" Graffiti Car



Side 1



Side 2

Atlas' Research & Development Team does a fair share of railfanning before and after work and on their lunch breaks. During one of these outings, Paul Graf, our CEO captured this ADMX tank car with unique and humorous Kung Fu fighter graffiti traversing the tracks in Hillside, NJ. We have recreated this unique car in limited quantities, available for pre-order now from your Atlas Authorized Dealer.



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02

Image 2. This shows what the added roof looks like minus the running board on a retired car. It's fairly basic with 4 hatches and supports for the running board. This car is currently residing in Toppenish Northern Pacific Railway museum. (Photo by Doug Shearer, used with permission)



03

Image 3. Fortunately for us in N Scale, Bluford Shops makes just the right hopper for the base of this conversion. It is listed as a USRA 30' 6" 2 bay hopper, AKA USRA 55 ton hopper. They come in a paint scheme that is correct for the NP 70000-70048 series but is a little older than the scheme used for the 1957 conversions to the 207400-207448 series. The main difference being lines above and below the reporting marks vs. no lines. The factory coal load has been removed in this photo.



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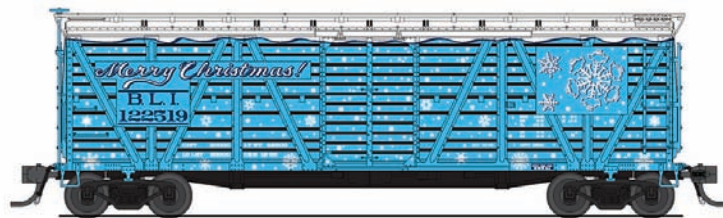
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04

Image 4. I asked my friend, Joe Cox, AKA Depeer N Scale on Shapeways, if he could design a 3D printable sand car roof to replace the coal load. He was happy to give it a shot. Here is a comparison of the underside of the coal load and the sand car roof.



05

Image 5. Here is a photo of the roof partially inserted for a test fit. It's a snug enough fit I had concerns about being able to get it back out, hence only partially in for this test fit. It's not the length that's snug. It's the width of the ends that are slightly wide.



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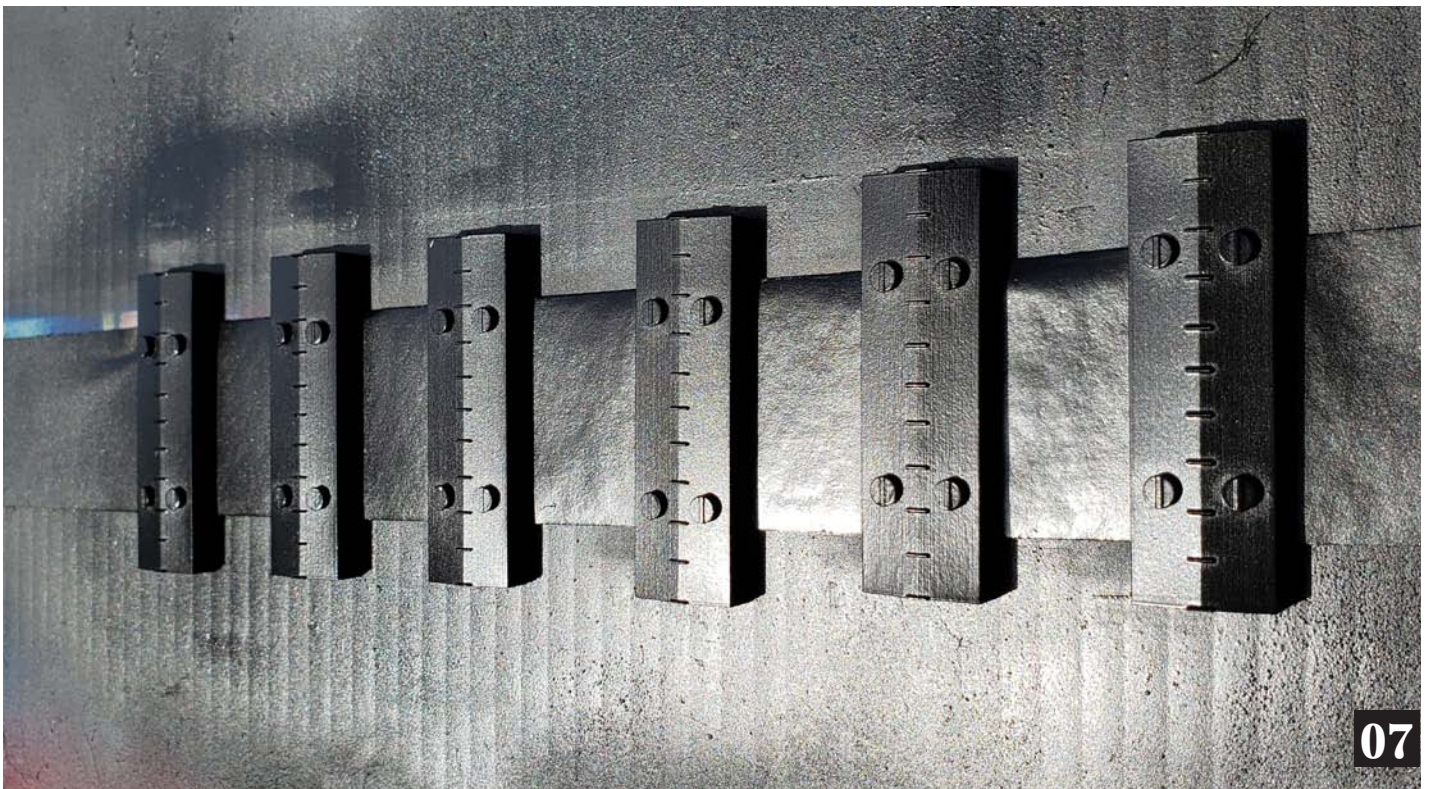
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06

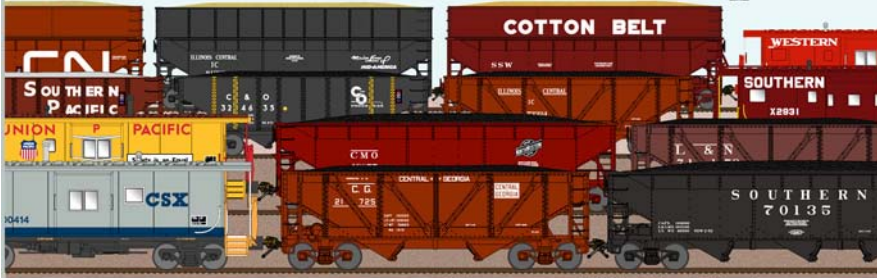
Image 6. For some reason the first batch Shapeway's printed had a bow to the roof. Ribs were added longitudinally on the underside to address that for future printing. The approach I took was to glue a 1/8" piece of square brass tubing on the underside to take the bow out. CA worked good for this application.



07

Image 7. Anything worth doing is worth overdoing. I had 6 different numbers of these cars from Bluford so I decided to convert all 6 to sand service. First I primed the new roofs with Tamiya fine gray primer. Then painted them with the Tamiya semi-gloss black. Don't use the glossy black. It's too glossy for this application. The Tamiya spray cans are a fantastic product. After painting, the detail of the running board supports and the hatches really show up.

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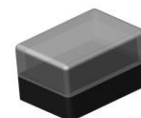
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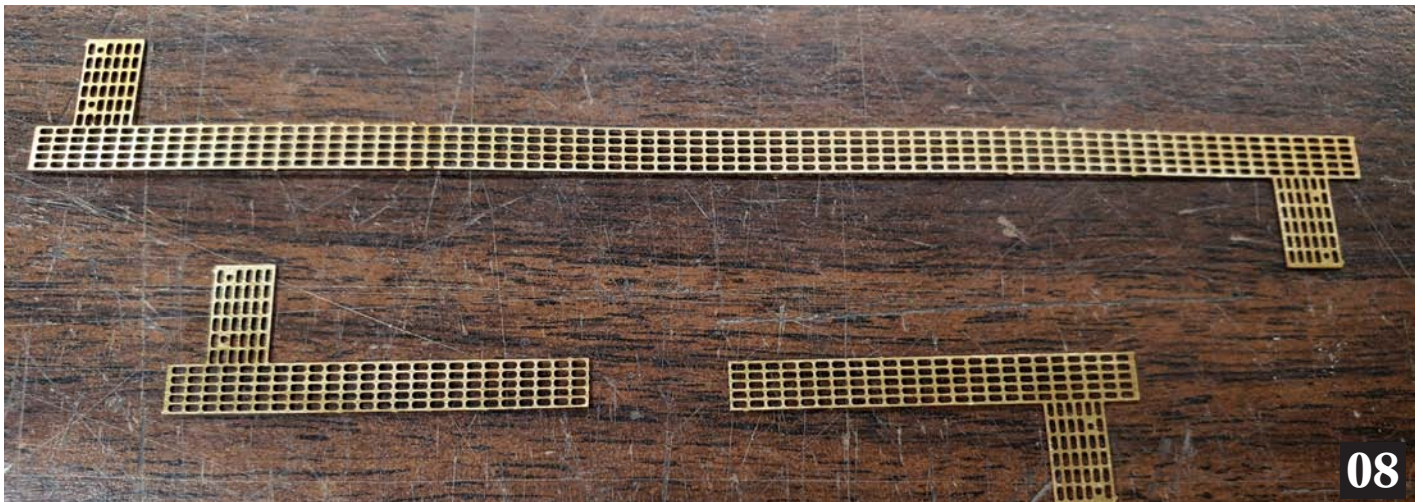


Image 8. When converted in 1957 these cars received running boards. Gold Medal Models makes several different lengths of etched metal running boards. However none are the appropriate length for this project. This is not a problem though because we can cut down a longer running board (RB) to the length needed. This picture shows a full length RB for the Delaware Valley 50' airslide next to two halves shortened from the same style RB. The 2.25" total length of RB was intended to provide a 1mm overhang at each end. It does overhang the new roof but doesn't extend past the end of the car. While this is a little shorter than the prototype it will make the RB less likely to be knocked off while handling and operating.



Image 9. For aesthetics its best to solder the two halves on the underside of the RB. Put a slight amount of flux on the edges of the two halves where they will be joined. Then drag a solder iron with a very small amount of solder on the tip over the joint to make the connection. Use a straight edge against the two halves to keep them in line while soldering. Using this method will keep the top side free from excess solder. File away any excess solder on the bottom.

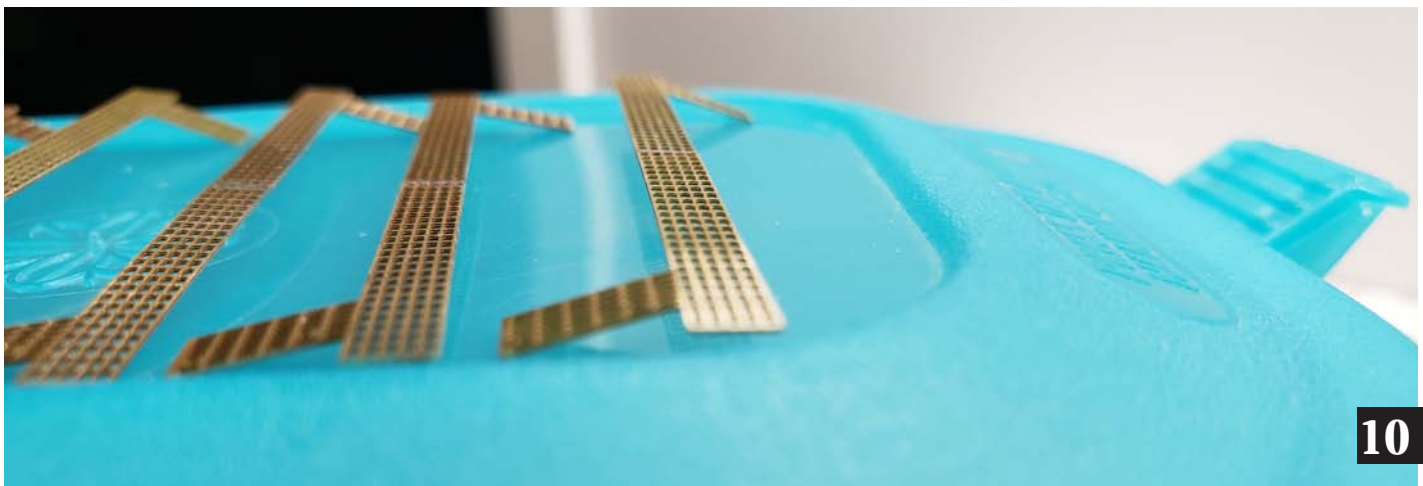


Image 10. The part of the RB that branches to the side where the grab irons are needs to be bent downward. I'd love to tell you how many degrees the angle is but I just eyeballed it. The end lays on the roof near the side as opposed to a support bracket like the main part of the RB does.

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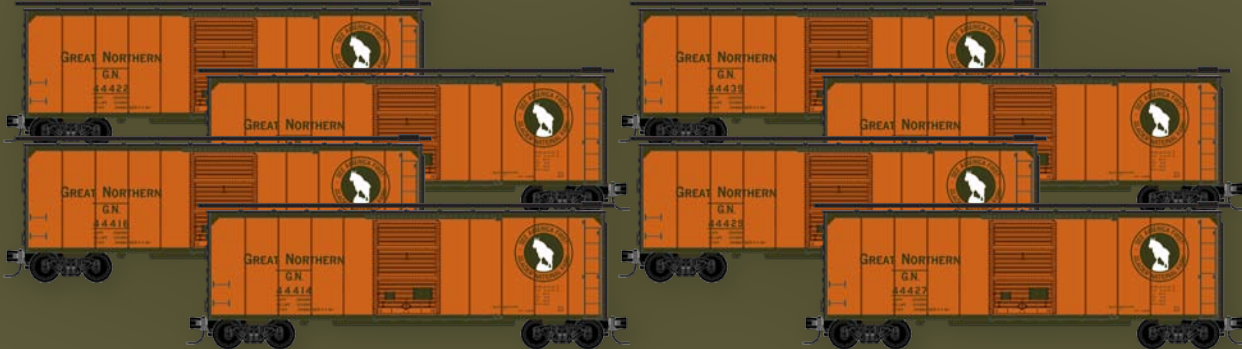


KATO will be bringing back two of their most popular items - the SD40-2 Locomotive and the 5-Unit MAXI-I Well Car Set - in Maersk livery. In addition there will be some brand new variations offered on the MAXI-I Well Car Sets such as BNSF and TTX liveries with new "ONE" containers in both the magenta and gray colors. Santa Fe SD40-2's are also on offer. Both the NS/Maersk and Santa Fe units can be reserved with optional DCC or ESU LokSound. Delivery is estimated to take place December through March. Reserve yours today!

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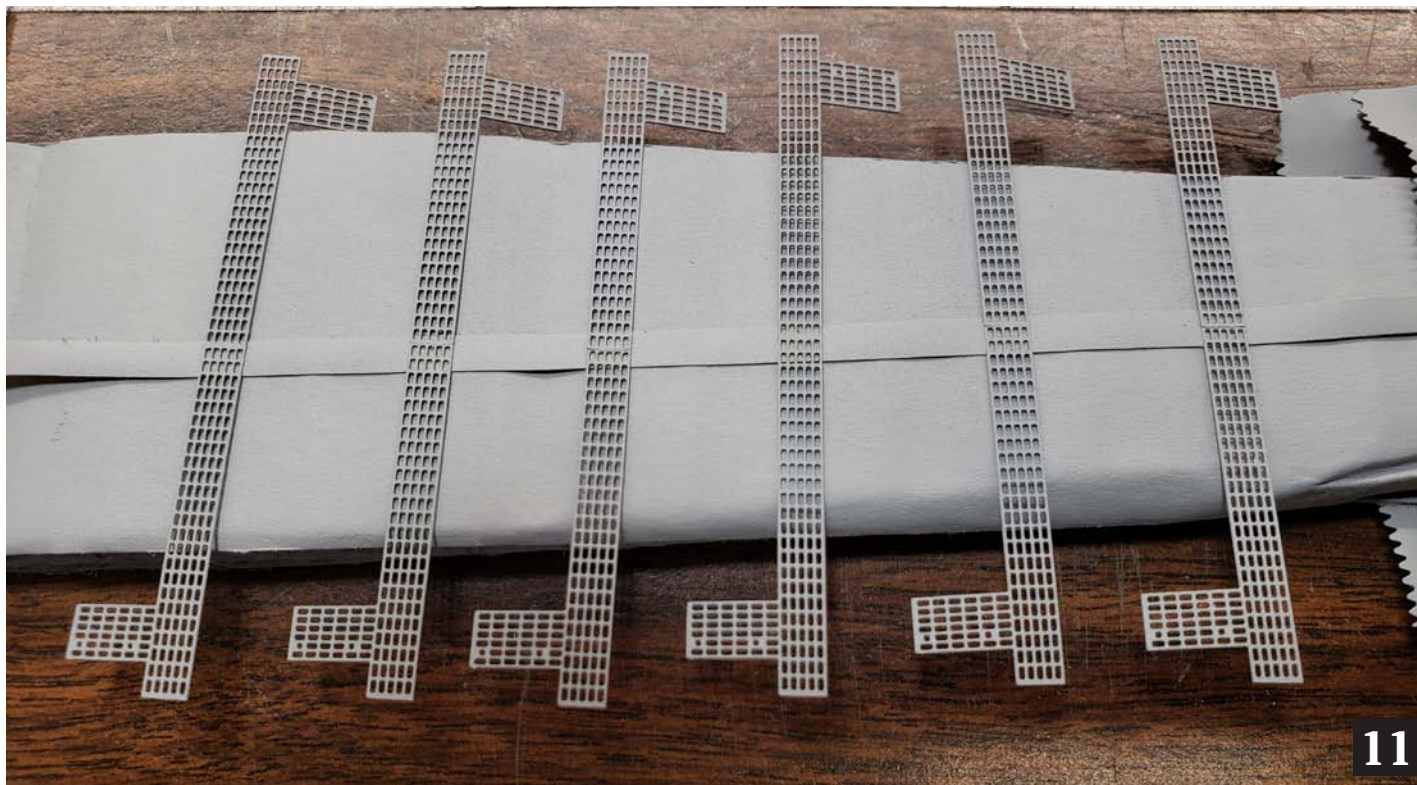
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11

Image 11. I try to do all painting in bulk. Here I used a strip of cardboard with 3M fine line masking tape upside down to hold all 6 RBs at once. Paint the underside of the RBs first. Then use a new piece of tape and flip them over to paint the top of the RBs. For this I used the Tamiya gray primer as opposed to the fine gray primer because I wanted a bit more texture on the RBs. My goal was to try and simulate the look of galvanized metal on the RBs. However straight primer wasn't quite it as it turned out.



12

Image 12. There is a possibility of some flex or contraction/expansion due to dissimilar materials. So you want a glue with a bit of give for the RB attachment such as Aleene's tacky glue. I see it is offered in a 64 oz. family size now which is just about the right size for the average N Scaler. I loaded a syringe with some then put a small line of it on each RB support, then placed the RB on the roof. See sidebar for how to make a pinpoint applicator.

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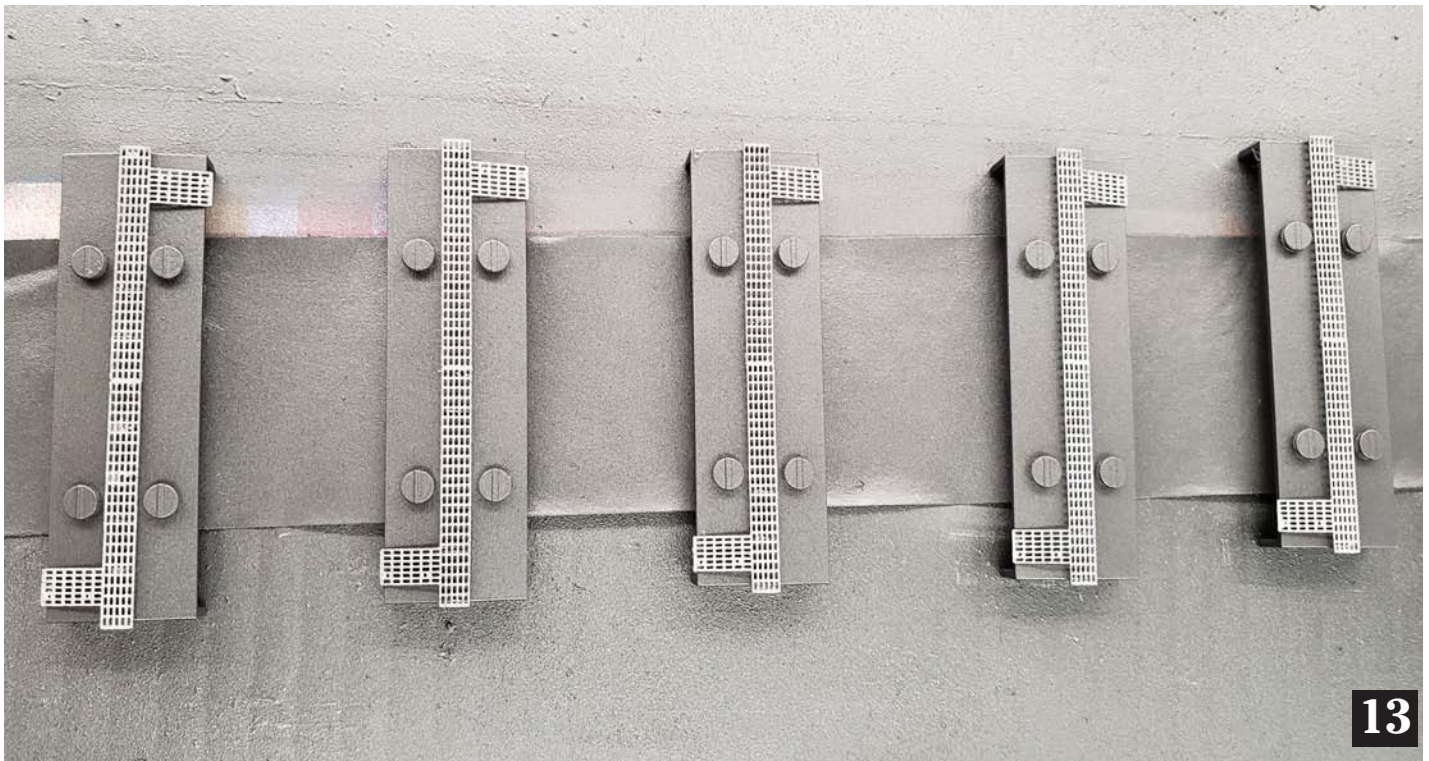
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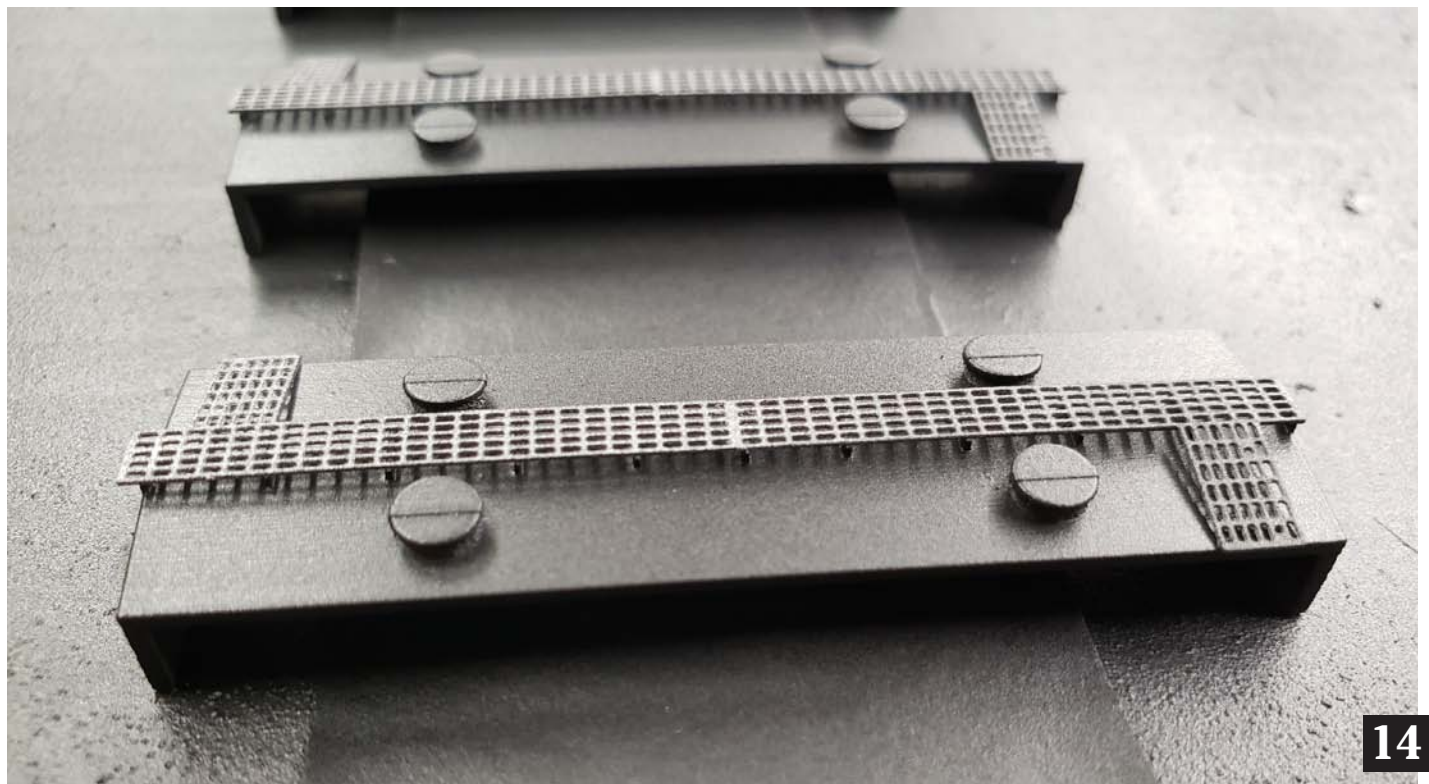
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13

Image 13. I was just test fitting here because the roofs were still in primer fine gray. After the roofs have been painted black it's OK to glue the RBs on. Center the RBs on the roofs when gluing. Each support gets a line of glue as well as the edge where the RB branches off to the side and rests on the roof. You can see there is a bit of overhang on each end. Once the roof is plugged into the hopper it won't extend past the side or end of the car.



14

Image 14. There was too much contrast between the gray RBs and the black roof so I misted black over the RBs to blend them in better. Notice how you can't see the Aleene's tacky glue even though it is on every contact point on the roof.

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Image 15. There was one change I made to the lettering. Microscale set 60-1011, NP MOW has the decal “restricted to company sand service”. I added this to the NP decorated hoppers because it’s noticeable. Other changes you could make would be to remove the bars above and below the reporting marks. Also the correct road numbers are in the 207400 to 207448 range. I chose to do neither because the visual payoff did not offset the effort required.



Image 16. Here is the roof being inserted in the hopper. On the edge of both ends I scraped some of the paint off to reduce the width a bit to make it easier to slide in.

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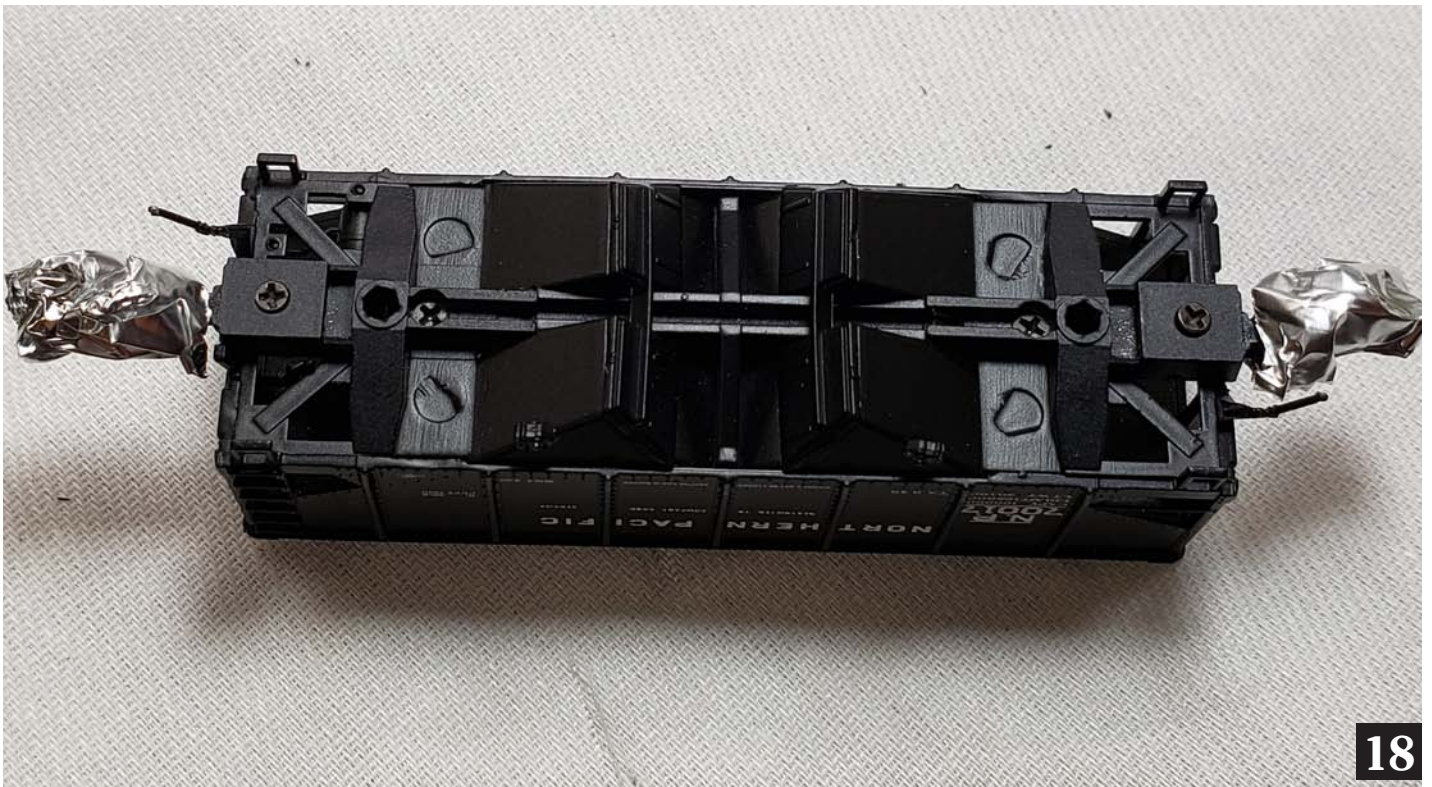
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TRADITION AND PASSION



17

Image 17. This shows the roof inserted. It shows the Tamiya Semi-gloss black is a close match to the Bluford paint.



18

Image 18. Prior to shooting the car with a flat clear, wrap the couplers with piece of aluminum foil to prevent paint from getting in the working parts of the coupler.

N SCALE RAILROADING NEW PRODUCTS

01

Right. Heavyweight passenger cars were built in many lengths. Atlas offers five body styles in 60' length: RPO, Express/ Baggage, Baggage/Coach Combine, Coach, and Coach/Observation.

The 60' cars are modeled off of short length prototypes found some railroads. An advantage short length prototypes have on many model railroads is they look better on tight curves because the center of the cars don't hang so far away from the centers of the track.

The 60' Express/ Baggage car and the RPO are similar to cars of that length on many railroads and look right on the head end of trains with longer coaches. They are also different prototypes than the Micro-Trains and Wheels of Time heavyweight cars. The heavyweight Express/Baggage cars could show up all over North America on the head end of many trains.

Yea for Atlas of offering these cars in such a wide variety of roadnames and colorful schemes. It is much easier to purchase these cars decorated than finding the right colors of paint, buy decals (if you can find them), and painting and decalling the cars. Note the cars with heavier loads have 3



axle trucks.

Atlas 50 005 126 is a five car Chicago Great Western set. Among the main cities served by the CGW were Chicago, Omaha, Minneapolis, and Kansas City. All cars are available separately and often in multiple road numbers.



Above. Chicago Great Western 66 is the Railway Post Office from the five car set Atlas 50 005 126.



Above. CGW 46 is the Express/ Baggage car from the five car set Atlas 50 005 126. These cars usually carried more express than baggage.



19

Image 19. After shooting the cars with Tamiya flat clear the roof blends with the factory paint, the decal film disappears and the sheen is gone as you would expect with cars this old in sand service.



20

Image 20. A comparison of an un-weathered vs. weathered roof. To simulate the look of a used sand service car I used Bragdon weathering powders to give the look of sand and dust on the areas you would expect it to be. It also toned down the remaining sheen on the running board.

N SCALE RAILROADING NEW PRODUCTS

02



Above. Chicago Great Western 282 is the express/ baggage coach from the five car set Atlas 50 005 126. Note the 2 axle trucks.



Above. Chicago Great Western 280 is the coach from the five car set Atlas 50 005 126.



Above. Chicago Great Western 99 is the coach/ observation car from the five car set Atlas 50 005 126. Sometimes these cars had parlor seats.



21

Image 21. A side view comparison. BLMA, now Atlas, ACI plates were added prior to weathering.



22

Image 22. I'm not in the metal wheel fan club due to their relentless ability to get dirtier faster than the MT plastic wheels. Decades of testing on my prior layout proved this, but that's another story. So I replaced the original trucks and metal wheels with MT trucks and version 1 low profile wheels. After painting and weathering they were ready to install. Here we see a cut of the NP sand cars at Sheyenne Sand and Gravel being loaded. BTW the new layout is still being built, hence no scenery, yet.

N SCALE RAILROADING NEW PRODUCTS

03



Above. Conrail PD-1 is Atlas 50 005 029. The car is in service to train personnel in Conrail's police department.



Above. USFR 1 the current membership car for the N Scale Enthusiast. The car is from Micro-Trains and a tribute to the First Responders.



Above. Santa Fe 186205 is Atlas 50 005 267. These DIFCO dump cars were usually found in strings of similar cars.



Above. Northern Pacific 89134 is Atlas 50 005 276.

Bonus: Glue Syringe For Pinpoint Gluing!

by Kim Saign/ Images by author



Bonus Opening Image. lead. Back in the March/April 2018 of N Scale Railroading on page 49 I mentioned how to make a glue syringe. I've since come up with a better way. Here is a 1 cc syringe loaded with Aleene's Tacky Glue. Depending on what you are building this could last through several projects before reloading. The yellow cap to seal it is from a tie tack or lapel pin back.



Bonus 1

Bonus Image 01. Here we see the 3 stages of the syringe. Front is an unaltered insulin syringe. Middle has the needle removed. Back has a 20 Gauge blunt tip dispensing needle attached. If you need to use a thin glue such as CA you can use the insulin syringe as is. But it will basically be a one project needle before it dries in the needle. Plus you are sure to stick yourself with the needle so I wouldn't recommend it.

N SCALE RAILROADING NEW PRODUCTS

04



Above. Delaware & Hudson 28122 is Atlas 50 004 457



Above. Seattle & North Coast 1017 is Atlas 50 005 255. As "per diem" cars, they were served on railroads across the United States.



Above. Union Railroad of Oregon 1505 is Atlas 50 005 263.



Bonus 2

Bonus Image 02. In the M/A 2018 NSR the approach I took was to drill out the yellow tip on the 20 Gauge needle to fit the nozzle of a 1 cc irrigation syringe. The better approach is to use 1 cc insulin syringes because the dispensing needle will slide right on. The insulin needle is too small and you are guaranteed to stick yourself. However we have a fix for that. Just pull out the needle with a pair of pliers and SAFELY discard the needle.



Bonus 3

Bonus Image 03. The OD of the 20 GA needle is .025. I wanted the hole in the nozzle to be at least that. I selected #69 bit to drill out the end of the syringe. After drilling attach the yellow tip needle.

N SCALE RAILROADING NEW PRODUCTS



Above. The package of three gum trees is Woodland Scenics TR3525.



Barbed Wire Fence is Woodland Scenics A2990.



Chain Link Fence is Woodland Scenics A2993.



Log Fence is Woodland Scenics A2991.



Picket Fence is Woodland Scenics A2994.



Privacy Fence is Woodland Scenics A2995.

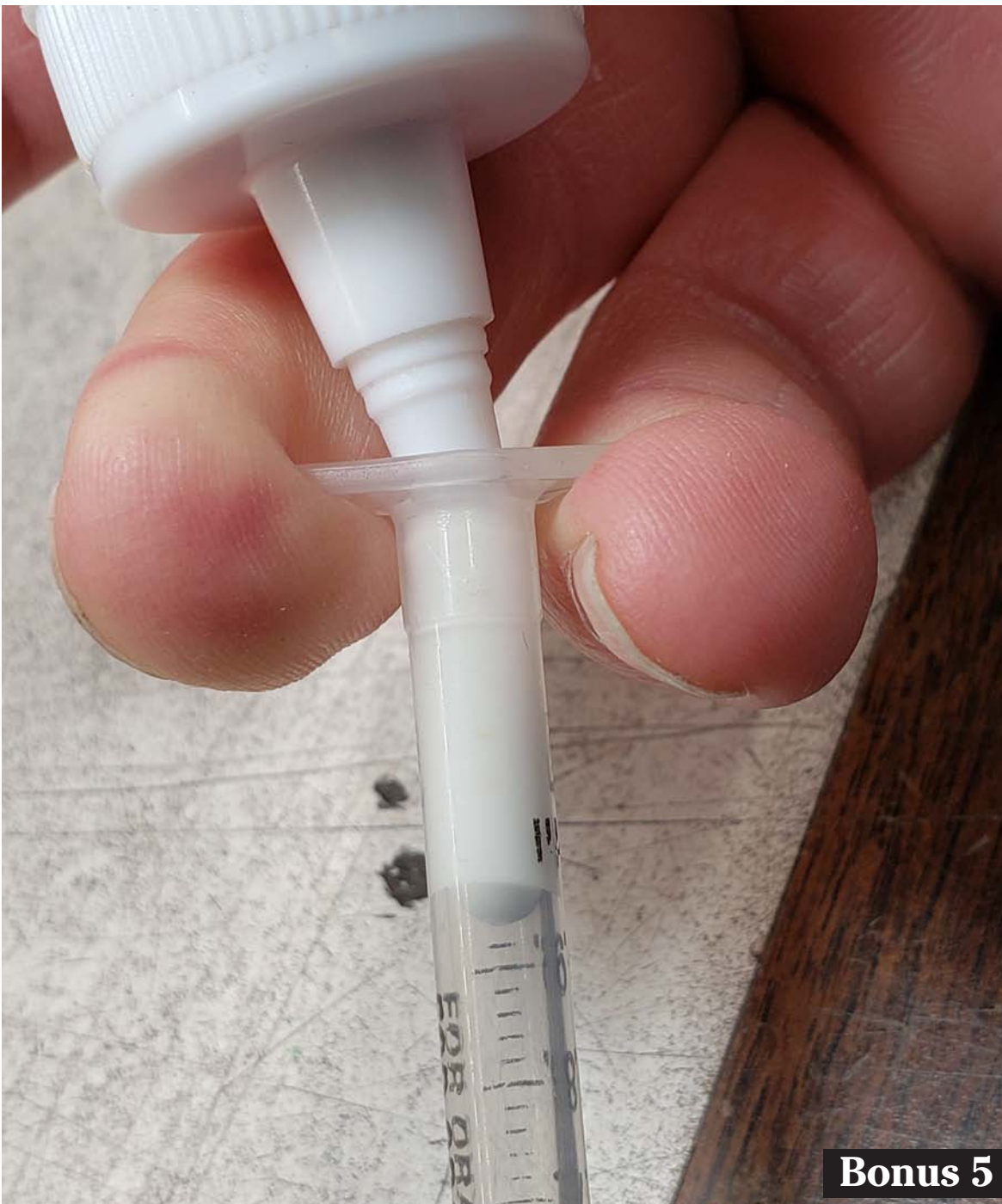


Rail Fence is Woodland Scenics A2992.



Bonus 4

Bonus Image 04. Testing with water we can get a pretty good stream.



Bonus 5

Bonus Image 05. Load the syringe with Aleene's Tacky Glue. Insert the plunger and you are ready to put glue where you need it, in the quantity you need. Cap it with the pin back to keep it from drying out. I purchased the 20 GA gluing needles at Woodcraft. There are online sources as well. The insulin syringes came from Walgreens.

N SCALE RAILROADING NEW PRODUCTS

06



Above and below left. The Dash 8-40CM "Draper Taper" unites are out! CN 2430 is Rapido 540513 and has Rapido's usual unit specific details.



Above and Upper Right. CN (BCR) Dash 8-40CM 4615 is Rapido 540526. Differences include the website and BCOL markings.



Above. More unit specific details show up on the locomotive's front and rear. 2430 has its number above the cab. 4615 has yellow stripes above the porch and two black circles and a large black rectangle. The rear back lights, reporting number locations, and grab iron colors are different.

Better Module Lighting

by Al Lowe/ Images by Doug Bulger

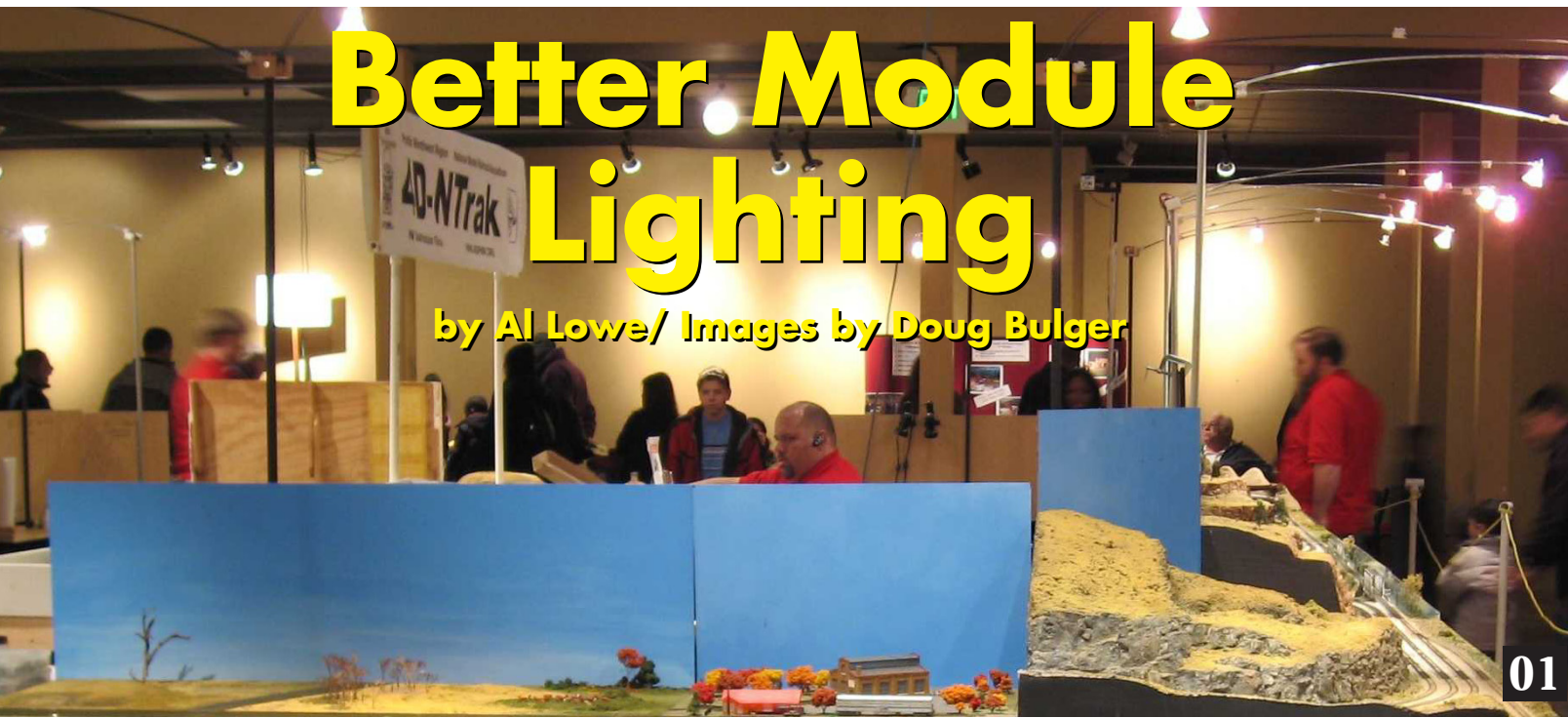


Image 01. In an ill-lit hall, our layout is a beacon of light.

Eighteen years ago, our 4dNTRAK group realized our modules needed lighting. Tom Knapp's article in the July-August 2002 issue of *N Scale Railroading* inspired us. We took some of Tom's ideas and added some improvements of our own, creating a system that has worked reliably for many years, at low cost, and garnered our modules many compliments.

We decided to use readily-available, low-voltage, outdoor lighting transformers to power a 12-volt AC bus running under each of our modules. We use the same PowerPole connectors used on our track buses, but assembled to be incompatible.

Our group typically fabricates dozens of these lamps in an afternoon work party. The trick is find someone to procure the many components in advance. We form an assembly line, with each person doing one step, and construction goes quickly.

Goals

Coverage: We wanted to light our modules evenly, without dark spots.

Direction: We wanted light that fell from above the audience's shoulders. I hate staring into lights. Too many modules lit by office lamps, for example, shine into your eyes—at the *audience* instead of at the *modules*. See **Image 01**.

Portability: Since everything gets moved every show, it should be compact and lightweight, quick to set up and tear down. No 120-volt power cords.

Color: We wanted a normal warm light, not cold blue or fluorescent green.

Low Visibility: The lights shouldn't block our view of the audience, or their view of us. We like to be able to chat with the public.

Cost: Less is better.

Our Solution

So we grabbed some conduit, suspended ceiling hanging wires, terminal strips, MR-16 LED bulbs, clamps, and an outdoor lighting transformer. *Voila!*

What? Not enough information? Okay, here are the details!

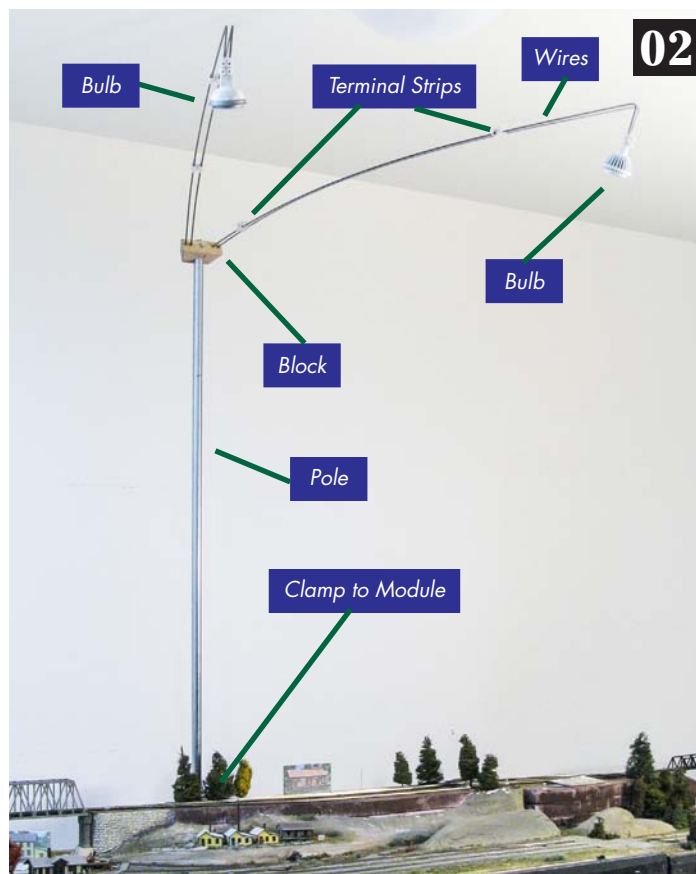


Image 02. Lamp parts and terminology.

Definitions

First, since this is a custom-engineered product, there's no standard terminology for its parts. **Image 02** shows the vocabulary I use throughout this article:

Lamp: a completely assembled light Pole with two Bulbs.

One Lamp lights one 4-foot module; use two Lamps for longer modules.

Pole: the vertical piece of $\frac{1}{2}$ " conduit. The bottom is C-clamped to the rear of a module.

Block: a wooden junction at the top of the Pole that holds the Wires.

Wires: two suspended ceiling hangers that extend out from holes in the Block to place the Bulbs above the audience.

Bulbs: two 12-volt MR-16 LEDs. (Yes, I'm aware that LEDs are really diodes, but everybody I know still calls these things Bulbs.)

Terminal Strip: a two-position Euro-style terminal strip holds the MR-16 LED bulb at the end of the Wires. Two more terminal strips separate the Wires.

Transformer: a 12-VAC low voltage outdoor lighting transformer provides power to the lighting system.

Parts

The following parts are needed to make one Lamp, although the links are often for packages with extra parts. An advantage of non-paper magazines like *N Scale Railroading* is that links like these are live. No more need to type them in; just click. See? Progress!

Home Depot

1. 48" galvanized $\frac{1}{2}$ " [conduit](#). Galvanized is cheaper; aluminum is lighter.
2. 1 each [conduit coupler](#)
3. 1 each $\frac{1}{2}$ " x $1\frac{1}{4}$ " [hose clamp](#)
4. 1 each 2" x $1\frac{1}{2}$ " [C-clamp](#)
5. 1" x 3" x $1\frac{1}{2}$ " [hardwood](#)
6. 4 each 40" 12-gauge [suspended ceiling hanging wires](#). Buy straight, not coiled.
7. 7' 12-gauge low-voltage [outdoor lighting wire](#) for each module's lighting bus
8. 9' [16-gauge lamp zip cord](#) for each Lamp
9. 16" of $\frac{3}{16}$ " [heat shrink tubing](#)
10. 1 each #10 [Type F \$\frac{3}{4}\$ " sheet metal screw](#)
11. 4 each $\frac{3}{16}$ " x 2" steel [slotted spring pins](#)
12. 2 each 12-volt MR-16 [LED bulbs](#). Get straight pins ("GU 5.3 base") to fit terminal strips. We prefer 3000K color.
13. 1 each fused 12-volt AC [lighting transformer](#) (link is for a 600-watt unit, enough to power 40 Bulbs on 20 modules). It doesn't need a timer but does need a circuit breaker.

Elsewhere

14. 6 each Euro-style, 10mm 2-position terminal strips [Jameco](#), large enough that the #6 Wires will fit through. Note that some strips are blocked internally, which prevents the Wires from passing through them. Don't buy those by mistake! When cut, each 12-position strip produces 6 2-position strips, enough for 2 Lamps. See [Image 03](#). Note different sizes.
15. 1 each Euro-style, 12mm 2-position *heavy-duty* terminal strip [Jameco](#). Similar to previous item, but larger. When cut, each 12-position strip produces 6 2-position strips, enough for one module.
16. 8 each 45-amp Anderson Powerpole housing (6 per module, plus 2 per Lamp). Choose a color your club doesn't use for anything else. We chose violet. [PowerWerx.com](#) Buy extras; you'll also need some for your transformer power source.
17. 8 each 45-amp Anderson Powerpole contacts (6 per module, plus 2 per Lamp). [PowerWerx.com](#) Here again, buy extras.
18. 1 Plano double shotgun case to transport Lamps. Each gun case will hold up to 4 Lamps. [Amazon](#)

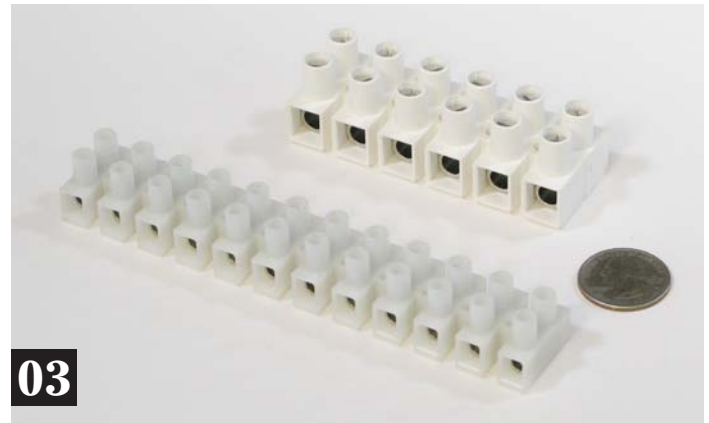


Image 03. Two sizes of terminal strips: #14 10mm small and #15 12mm large.

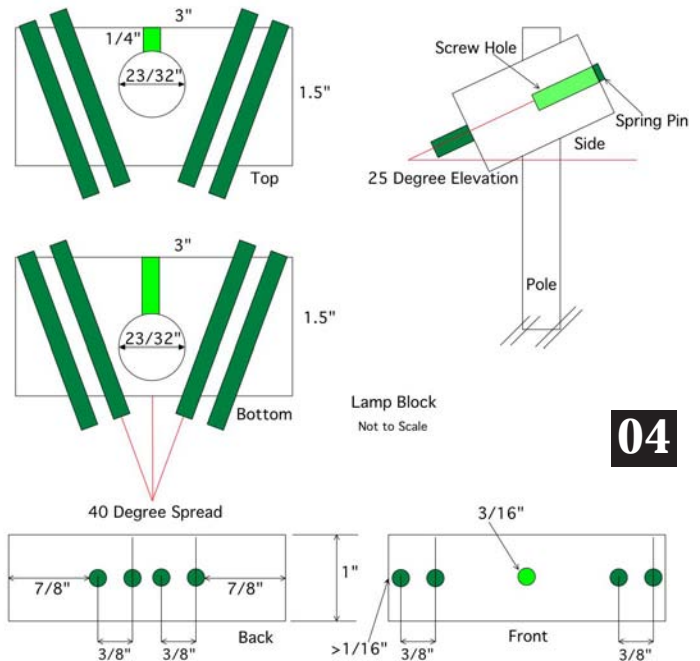


Image 04. Dimensions of the wooden Block at the top of Lamp, showing the angles of the holes.

Assembly

Fabricate the Blocks

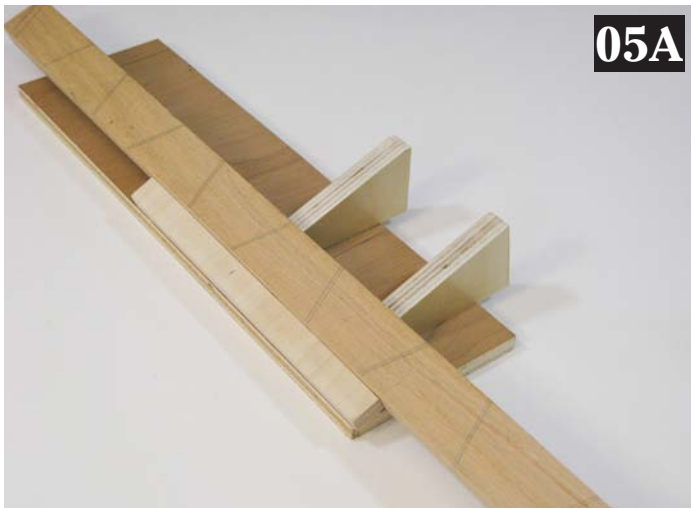
While our group has used both high-density plastic and hardwood, hardwood is cheaper and adequate. See [Image 04](#) for dimensions and angles.

Use a drill press to drill the holes at the precise angles shown. Create two quick and dirty jigs to ensure accuracy. See [Images 05A & 05B](#).

We've found it's easier to lay out and drill multiple Blocks on one long piece of stock. Once all the holes are accurately drilled, slice it into individual Blocks.

Step by step instructions:

1. Machine whatever #5 hardwood you bought until it's 1" x $1\frac{1}{2}$ " x whatever length you have.
2. Create a jig to hold the #5 hardwood at a 25° angle. See [Image 05A](#).
3. Use the jig to drill a $\frac{23}{32}$ " hole at a 25° angle. This should fit the #1 conduit. This angle raises the height of the Bulbs and counteracts the tendency of the Wires to sag. This hole is the large white circle in [Image 04](#).
4. Drill a $\frac{3}{16}$ " hole horizontally through the hardwood, cen



05A



07

Image 07. Block, front view



05B



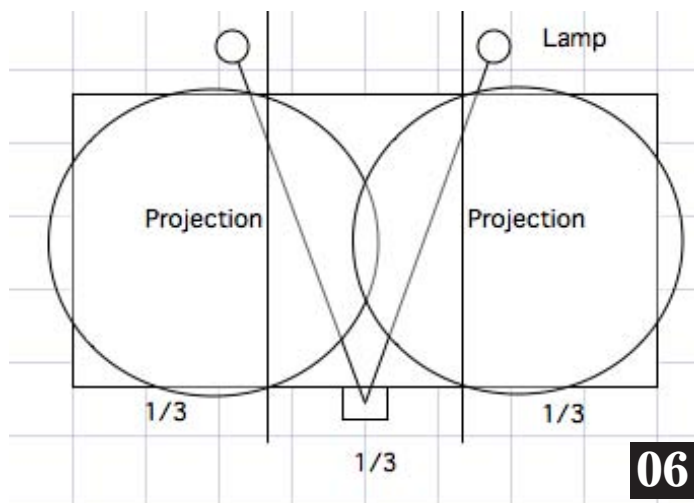
08

Image 08. Block, rear view

Image 05A and 05B. Make two quick jigs to drill consistent angles.

tered on the previous hole and $\frac{1}{4}$ " from the top of the Block.

This hole is for the #10 sheet metal screw that holds the Block to the conduit and is colored light green in Image 04. 5. Create another jig to hold the #5 hardwood at a 20° angle. See Image 05B.



06

Image 06. The angle of the Bulbs, aimed off axis, evenly illuminates a 4-foot module

6. Drill two $\frac{3}{16}$ " holes as shown in Image 04, then reverse the wood and drill the other two $\frac{3}{16}$ " holes. These should fit the #11 slotted spring pins and are colored dark green in Image 04. This angle spreads the Bulbs to light the module from left to right. See Image 06.

7. Once all holes are accurately drilled in your long piece of wood, cut it into 3" lengths to form a finished Block. See Images 07 & 08. While the Blocks shown are pentagonal, you can cut them off at 90° to form a rectangle; the pentagon shape is just for looks.

Assemble the Poles

1. Cut the #14 Euro-style terminal strips into pairs. Each 12-position strip yields 6 pairs, with 4 screws each. A bandsaw works well for this.
2. Cut the #1 conduit to 48" to create the Pole. File the cuts smooth; especially ream the inside. Sharp edges here will cut your wiring and cause shorts. Be sure the length of Pole you choose fits inside your #18 transport (gun) case.
3. Drill a $\frac{3}{16}$ " hole through *one side only* of the conduit, $\frac{1}{2}$ " from the top of the Pole. This fits the #10 sheet metal screw that holds the Block to the conduit. This hole is colored light green in Image 04.
4. Straighten, if needed, the #6 suspended ceiling hanging Wires. Cut 4 Wires to 40" in length. Alter this length to adjust the Lamp's coverage if your modules are not 24" deep.
5. Cut $5\frac{1}{2}$ " of #8 16-gauge zip cord. This equals the height of the Pole plus 18."
6. Cut 2 6" pieces of #8 16-gauge zip cord. Separate the pairs of wire. Strip all 8 ends.



Image 09. Connections to spring pins

7. Solder a #11 spring pin to one end of each 6" wire. (You'll need a high-wattage iron or a flame torch.) See Image 09. Note: the image shows red and black wires for clarity but zip cord works just as well.
8. Slide #9 heat shrink tubing over the wires. Note: the image shows butt crimp connectors which work just as well.
9. Solder the two marked 6" wires to the marked 5.5' wire.
10. Solder the two unmarked 6" wires to the unmarked 5.5' wire.
11. Slide the heat shrink over the junctions. Apply heat. Or crimp.
12. Put epoxy glue in the 4 angled holes in the Block.

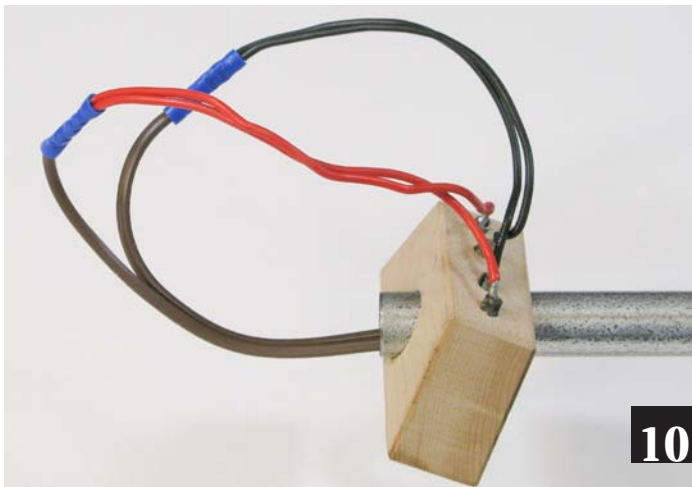


Image 10. Insulated wiring at top of Pole

13. Insert the #11 spring pins from the back side of the Block (where the holes are lower). Be sure to put one marked and one unmarked wire on each side of center. See Image 10. Note: This is AC so polarity is not an issue. We put the black wires together in the center.

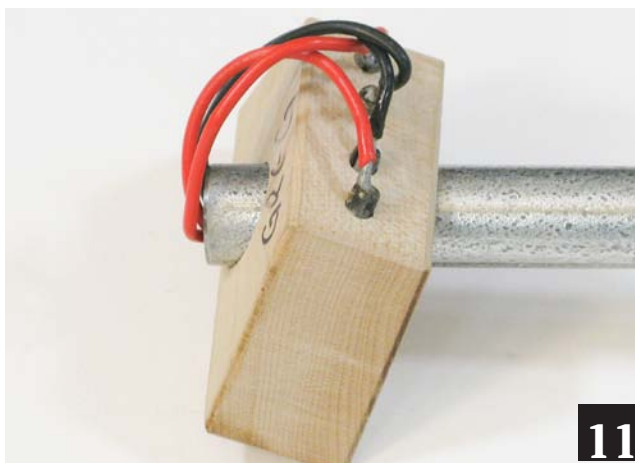


Image 11. Stuff extra wiring into Pole

14. Thread the zip cord through the large hole in the Block and then down through the Pole. See Image 11.



Image 12. A sheet metal screw holds the Block to the Pole

15. Attach the Block to the Pole with #10 sheet metal screw. See Image 12.
16. Fasten #2 conduit coupler to bottom of Pole. Tighten screw.

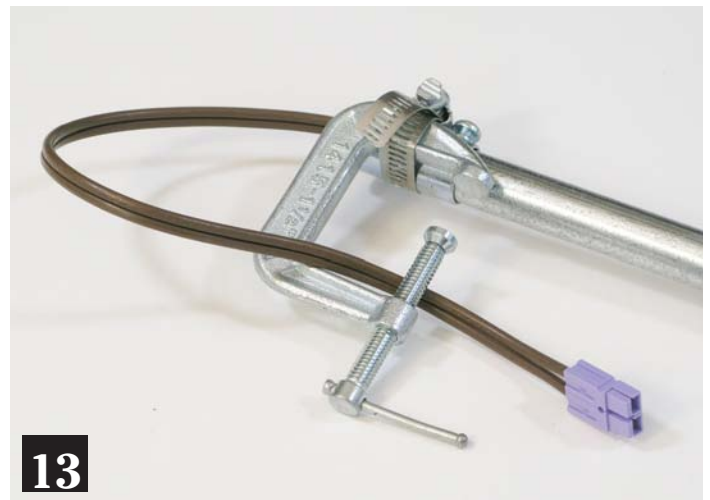


Image 13. Clamp assembly at base of Pole

17. Align #4 C-clamp at the bottom of the Pole so the front of the Block (without the wires) is aimed towards the front of the module. See Image 13.
18. Put #3 hose clamp over the coupler to attach #4 C clamp to the Pole. Doublecheck this angle; it affects your lamp's aim from left to right.
19. Crimp two #17 45-amp Anderson Powerpole contacts on the ends of the Pole's 16-gauge zip cord. A Powerpole crimping tutorial is [available online](#) as are many YouTube videos.
20. Slide two #16 Anderson Powerpole housings over the contacts. Slide them together in a unique formation so there's no way they can mate with any other cables. We use side-by-side since our track power buses are over-and-under.

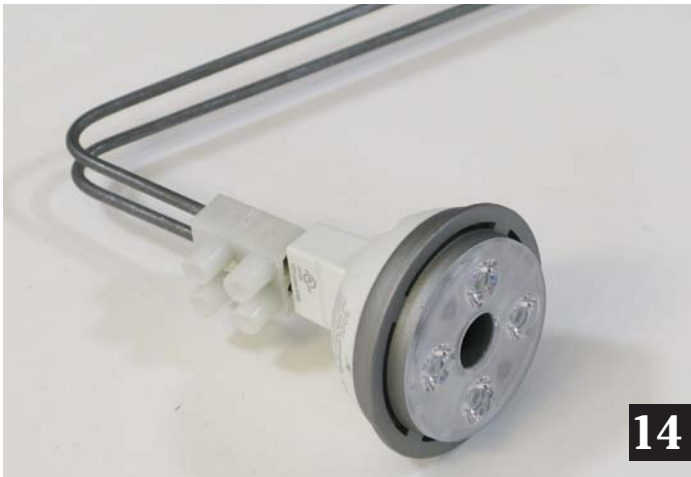


Image 14. The Bulb end of the Wires from shorting

Assemble the Wires

1. Bend 4 of the #6 40" 12-gauge suspended ceiling hanging wires around a scrap of conduit to form a 120° angle about 1½" from one end. See **Image 14**. Varying this angle adjusts how the Lamp illuminates your module from front to back.

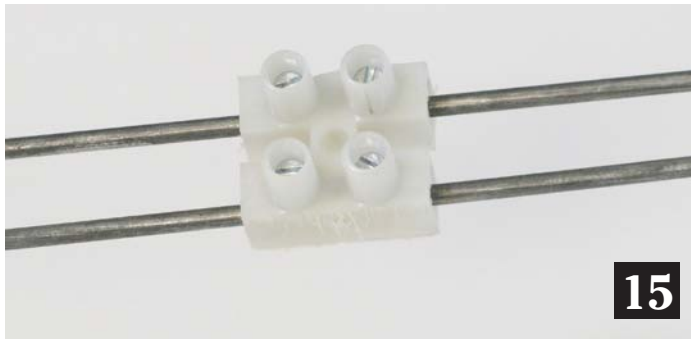


Image 15. One of the two terminal strips that prevents the Wires from shorting

2. Insert the unbent end of 2 of the #6 Wires into 2 #14 terminal strips. Slide one terminal strip until it's about 6" from the bent end of the Wires. Slide the second terminal strip until it's about 6" from the unbent end. Tighten all 8 screws on the terminal strips. This prevents the Wires from touching each other. See **Image 15**.



Image 16. Remove the web between terminals to fit spacing of MR-16 bulb

3. Repeat step 2, using 2 more #6 Wires and 2 more #14 terminal strips.
4. Take yet another #14 2-position terminal strip and remove the web that separates its terminals so it fits the spacing of the MR-16 bulb's 5.3mm pins. See **Image 16**.
5. Insert the bent end of the Wires into the modified terminal strip. Don't insert it too far or it will block the Bulb. Tighten those two screws.
6. Insert a #12 MR-16 bulb into the terminal strip. Tighten the remaining two screws. If the bulb does not insert easily into the strip, trim the web between the connectors. If the bulb's pins are not long enough to reach the screws, trim a little off the end of the terminal strip. If the bulb's pins won't go in, your Wires may be inserted too far.

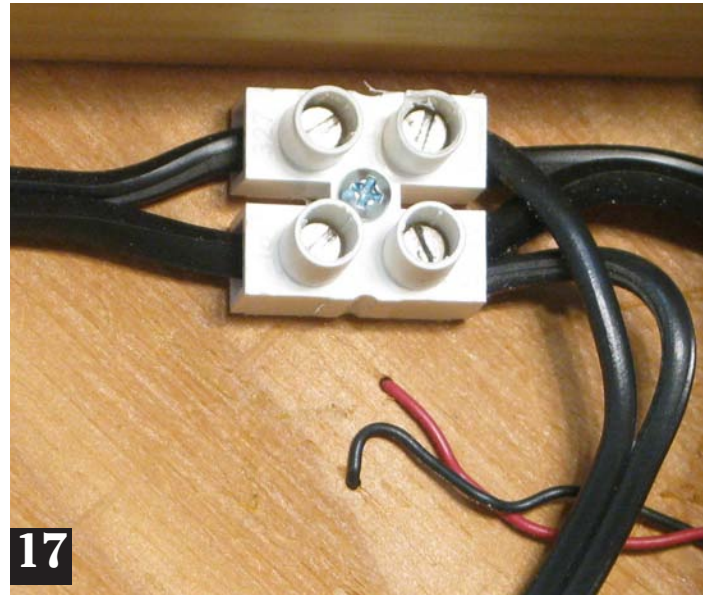


Image 17. Underside of a module showing the light bus

Add the Power Bus to Your Modules

1. Attach the #15 2-position Euro-style heavy-duty terminal strip, to the center of the underside of your module. See **Image 17**. Try to keep it away from your track buses and/or Loconet cables.
2. Attach one 3.5' long #7 12-gauge low-voltage outdoor lighting wire to each side of the terminal strip. This should be long enough to reach at least a foot past the ends of your module. This carries the light bus power through your module to the rest of the layout.
3. Attach one 1.5' long #8 16-gauge lamp zip cord to one side of the terminal strip. This is the "outlet" into which you'll plug your Lamp. See **Image 17**.
4. Strip all 6 of the remaining wire ends and crimp a #17 45-amp Anderson Powerpole contact onto each.
5. Slide a #16 Anderson Powerpole housing over each of the #17 contacts. Configure them to match the plug on your Lamp.

Add Power

1. A 600-watt #13 lighting transformer is actually two 300-watt transformers. Attach enough #7 12-gauge low-voltage outdoor lighting wire to reach your modules. Do the same for the other half of the transformer.
2. Crimp a #17 45-amp Anderson Powerpole contact on the end of each wire.
3. Slide a #16 Anderson Powerpole housing onto each contact. Configure them to match.



Image 18. A loaded gun light case, ready for transport.

Usage

1. We transport our Lamps by putting the Poles near the bottom of a #18 gun case and the Bulbs and Wires near the top (handle). Each case will hold up to 4 Lamps. See **Image 18**.

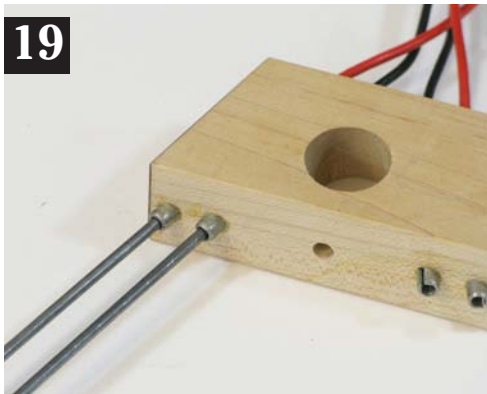


Image 19. Insert the Bulb's Wires into the Block before mounting to the module

2. To use, insert a Bulb's Wires into the left pair of spring pins in a Pole's Block. See **Image 19**. Repeat with another Bulb into the right pair of spring pins.
3. Use the C-clamp to attach the Lamp to a module's rear frame. See **Image 20**. Tighten clamp securely. They have a tendency to swivel around their pivot point (the C-clamp). This can cause one Lamp's Wires to touch another Lamp's Wires and is an excellent way to test your transformer's circuit breaker! (Our club calls this "crossing the streams.")
4. Plug the Lamp into the module's pigtail.
5. Connect the module's power bus. *Caution:* carefully count the number of Lamps per transformer circuit. Do not exceed 10 Lamps per 300-watt circuit. See Sidebar.
6. Connect the Transformer to the power bus.
7. Power up the Transformer and look at all the details on your modules!

Power, Watts, Resistance

Only use transformers with a circuit breaker or fuse. Never connect two transformers together. Simple math might convince you that, since the LEDs are 7 watts each, you could power 42 of them, but every connection and every inch of wire adds resistance. Limiting your 300-watt transformers to power "only" 10 Lamps (20 Bulbs) is safe!



Image 20. How the Lamp attaches to a module

Conclusion

Our 4dNTRAK group has successfully used these lights for over 15 years. Although we began with halogen bulbs (that used 7 times the current!), when LEDs got cheap, we easily switched. In the process, we eliminated several power transformers and now easily light even our largest layouts.

So, if you're tired of always being "in the dark corner" of a show or seeing your modules in some weird color, spend a few hours now and transform your layout's appearance with great light. Stop hiding your modeling in the dark. You'll be glad you did!

I want to thank fellow 4dNTRAK Group members Doug Bulger and Scott Marshall for their knowledge in designing and building our lights and for their help in writing, and especially proofreading, this article. ▸

Code 80 to Code 55 Transition

by George Hollwedel / Images by author

I am building my layout with good old sturdy Atlas Code 80 track. However, I like to have my spurs and sidings lower like the real guys do it. I accomplish this by transitioning my roadbed from the cork to 1/16" basswood and using Code 55 track for all spurs and sidings. I use both Atlas Code 55 and Micro Engineering Code 55. Years ago I found a fairly simple way to make the track transition.



Image 01. First step is to take a code 80 rail joiner and flatten one half of the joiner with a pair of pliers. Make sure the flattened part is relatively level with the bottom of the unmodified half.



Image 02. Here is a side by side comparison of a modified joiner with a standard joiner.



Image 03. This is how they look on a piece of code 80 track.



Image 04. Get out the soldering iron and tin the flattened side of the rail joiners.

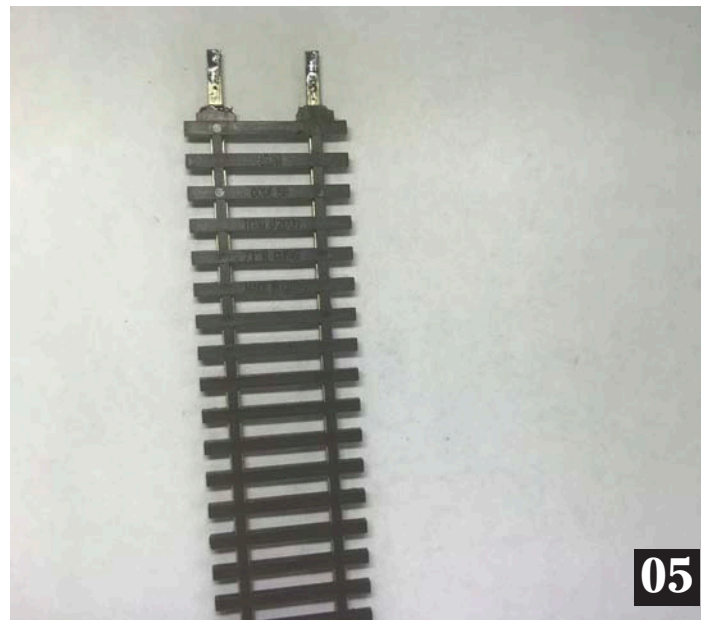


Image 05. Tinning the bottom side of the code 55 track is a big help as well.



Image 06. Solder the code 55 track to the flattened rail joiners. It is easy to keep the track aligned side to side as the solder adheres and the tops of the rails will match quite well. If there is a slight variation, or bump, a couple of swipes with a file will get you on the right track!



Image 07. Here is a view of a finished (except for ballasting) transition. It shows both the roadbed transition and the track transition. Once ballast is applied the tricks are all hidden. ▶

Locomotive Wheel Cleaning Tool

by Duncan Cabassi/ Images by author

I'm a stickler for great running equipment. I operate in N scale, and if there is one thing that will ruin good operations its dirty wheels on locomotives.

My favorite method had always been to put a piece of dry soft paper on the track, wet it with a cleaning solution such as Isopropyl alcohol, drive the engine up to the paper and after placing 1 set of driven wheels on the wet paper I would turn the throttle right up and hold the engine whilst the wheels spin on the wet paper, thus cleaning the wheels. The spinning action of the wheels on the paper helps spread the cleaning solution to the wheel tread and then acts like a scrubber as the wheels rotate. This also requires a movement of the wheels laterally on the paper to clean all the grime and muck from the tread.

This in my opinion is the most effective wheel cleaning method for locomotives. However, it has always been a little cumbersome especially in the scale that I model in which is N Scale. Having to hold the locomotive and turn the throttle knob, then the paper wants to slide under the locomotive and scrunch up. To further exacerbate the issue, I use Micro-trains couplers and those darn steel hooks keep getting caught on the paper. So for some time now, using the same methodology of wheel cleaning I've been wanting to build a more effective locomotive wheel cleaning tool.

I sat down and thought about the process that were required for the paper wheel cleaning method and I realized that with some simple household items that can be procured at the hardware store and a little ingenuity I could fabricate a nice permanent wheel cleaning tool.



Step 01: Getting the hardware together! This project requires a toilet roll holder, a square of wood (Scrap from another project?), Toilet Roll, length of track, cork for the track, some printed circuit board about the width of the sleepers and a length of brass round bar about 12mm wider either side of the toilet roll, wood glue, viciously drawn (Parallel to the bottom)



Step 03: Mark out the center line of the piece of wood sheet you are going to use. Mine was rectangular and about 500mm long by 300 mm wide. On the center line at about 50mm in from the top drill and screw on the toilet roll retaining bracket



Step 02: The tools required: Drill, Soldering Iron, flux, solder, screw driver, pencil, square, sharp knife, cutoff tool



Step 04: On the center line at about 50mm in from the top drill and screw on the toilet roll retaining bracket.

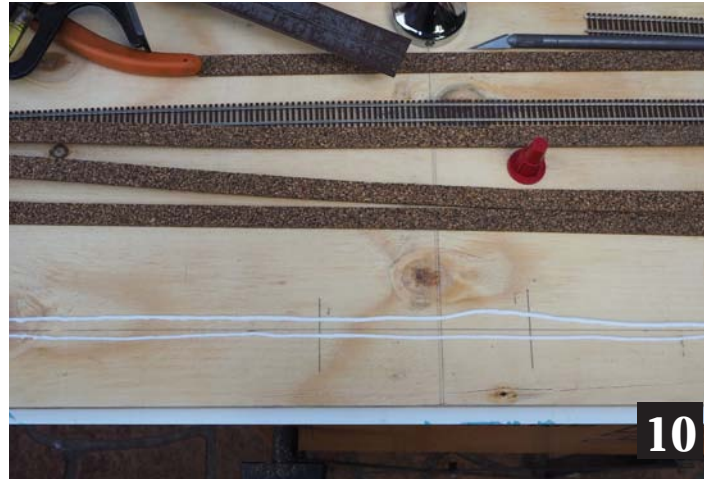


Step 05: Align and place the toilet roll holder over its retaining bracket.



06

Step 06: Then tighten the attachment screw.



10

Step 10: Run 2 beads of glue parallel and to the side of the track center line. Place the cork on the glue with each half's inside edge against the center line previously drawn (Parallel to the bottom)



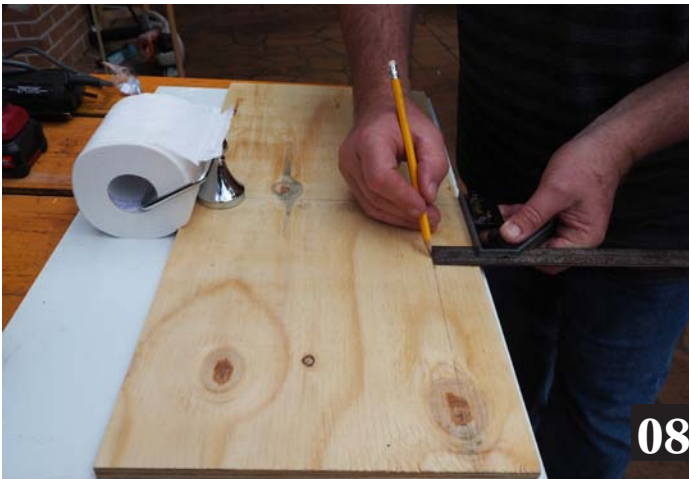
07

Step 07: Then test fit the toilet paper.



11

Step 11: Whilst the glue is drying from the previous step, place a piece of track over the cork and remove the sleepers across the width of the two marks made earlier



08

Step 08: Using the square as an alignment tool mark a line parallel to the bottom edge of the base. This is for the track center line, so make it at a comfortable distance in from the bottom edge but not too far. Mine is about 50mm



12

Step 12: Cut two pieces of Copper clad printed circuit board and solder these to the rails just inside of where you removed the sleepers. This will hold the rail gauge more rigid.

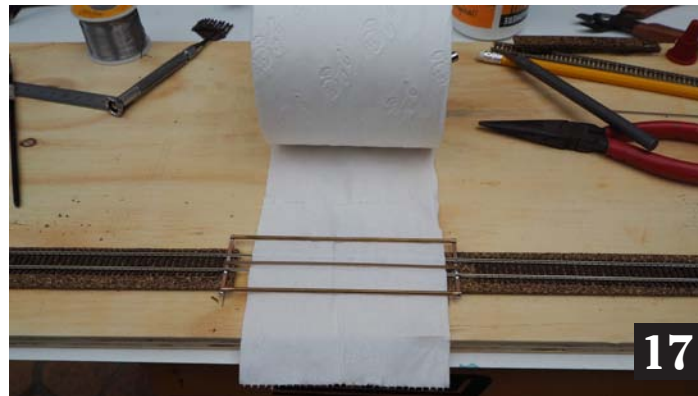


09

Step 09: Mark 2 lines across the center line about 12mm wider than the toilet paper on either side. Mine is slightly off set. These will be where the ties will need to be removed from the rail in a later step.



Step 13: Place a length of copper clad printed circuit board parallel with the track center line and across the top of the 2 previously installed printed circuit board sleepers. Mark this to length and cut. Place this down the centre of the track and across the two copper clad sleepers. Center between the rails and solder to the two sleepers



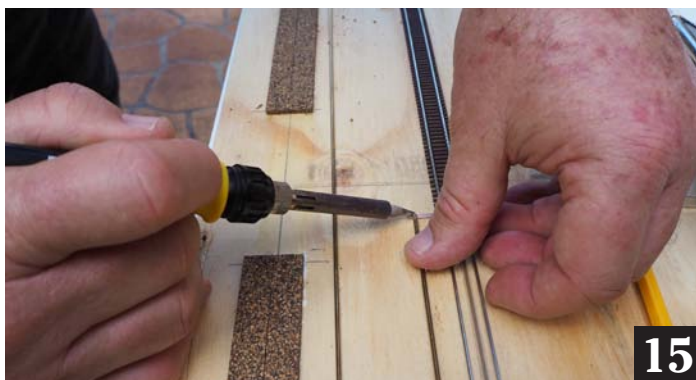
Step 17: This is where all your hard work comes together! Roll out the toilet paper to just short of the jig. Feed the paper under the round brass, over the rail, under the centre copper clad spreader, over the rail and then under the outer brass round bar.



Step 14: Oh don't forget to cut a groove in the copper coating of the two sleepers in between the rails and the centre piece otherwise you'll have a dead short (Ask me how I learnt this!). My advice is to cut both side of each sleeper.



Step 18: NOW YOUR READY TO CLEAN WHEELS
Apply your track power to the rails as per your normal process. You can use alligator clipped leads for a temporary fixture or hard wire as I've done for a more permanent solution. Place a locomotive on the track and run it forward to the paper. Apply your cleaning solution and away you go. This will speed up your wheel cleaning process by double and be so much simpler and easy to use. As your paper gets dirty just pull it through to a clean section.



Step 15 and 16: Measure the brass round bar and cut to length of the two sleepers and parallel with the track. Then solder these on the outside of each sleeper.



Step 19: I've placed my wheel cleaner in front of my computer that has JMRI running. I create a throttle in JMRI and put the slider to 90% speed and then my hands are free to hold the engine so it doesn't run away and I can move it laterally on the track for more effective cleaning of the wheels. Its amazing how effective this method is! ▶

Downsizing to

The Modesto & Empire Traction

by Al Frasch/ Images by author

Layouts come in all sizes and shapes to meet their builder's desires, (sometimes grand), space availability (usually not nearly large enough) and budget (mostly limited). In my case, after the 2004 NMRA Seattle Convention bus tour left my house, the little voice in my head said that the little (300 sq ft) layout would surely be better if I could dig out and finish an 800 sq ft basement under my home. This I did with shovel and buckets and lots of effort over the next 10 months and thus, the space limitations were taken care of - but the budget got blown all to heck! That layout, The Pilchuck Division of the BNSF, had a great 14 year run, hosting operators from all over the US, Canada, Australia and Europe. But all things do come to an end and off to the Arizona desert I went in 2018.

Once one has done his or her "dream layout," now what? Thankfully, I had thought through that aspect for several years. While at the 2011 NMRA Convention in Sacramento, I took the prototype tour to the Modesto & Empire Traction in Modesto, a little switching/industrial district that runs from Modesto to Empire, a total of about five miles. What a great little railroad to model. The M&ET began operations in 1909 as the Modesto Interurban Railway - the predecessor to today's Modesto and Empire Traction Company and is still owned by the Beard family. I thought at the time that with only a 5 mile wide "footprint," it would make a terrific layout if only I had a 180'X50' building to model it to scale! My primary interest in model railroading is operations and the social interactions around operation sessions. Therefore, a layout in a small space with lots of operation potential made the idea of adapting the M&ET to my new one-bedroom space a natural prototype to model.

Research led me to the two-part *Railroad Model Craftsman* article "The Modesto & Empire Traction: Modeling a busy California shortline" from Oct/Nov 2007 by Trevor Marshall. With this as a starting point, I began looking at satellite images of the area. The large number of industries became evident - the M&ET website lists over 100 businesses which call the Beard Industrial District (BID) home (see Image 01). After printing the BID diagram at 300%, I then began trying to find out which businesses used all those buildings. It may not be a surprise to anyone else who has tried to do this kind of 'research,' but no one site, Google, TerraServer, Bing Maps, etc. has all the buildings labeled. Using several websites and lots of zooming in, I was able to identify about 40 of the industries that are or were in the BID.

So, prototype: check; room (one bedroom with closet): check; land management okay (me): check; and materials (5 times as much as needed, salvaged from old layout): check. The old lay-

out provided many times the needed rail, switches, structures, freight cars, locomotives and details to build the new layout which went together from move-in to ready to operate in less than 18 months. Before that however, planning was needed to squeeze as much of the prototype into that bedroom as was practical. One given was that it would be double decked, with an elevator between decks - see the April 2020 *N Scale Railroading* issue for how the elevator was constructed.

Since the M&ET is a 100% switching prototype, there wasn't a need to worry about through trains, passenger trains, elaborate signaling (all within yard limits) or even a mainline. I did find a resource (Mapzen, but may not be available now, but its url is: <https://sensescape.github.io/morphology/#lat=37.6364&lng=-120.9698&z=14.3302&form=rail>) that allowed me to look at a region and only see the railroad tracks. I could take a look at the locations of the rails and switches to within a few meters (see Image 02). Google maps can be zoomed down to "track level" also, showing tracks and nearby buildings, but seeing only track is nice. Using a model railroader's license to abridge, cut, slice and even relocate, I chose 8 "streets" of industries to model. Yosemite Blvd is the northern border of the BID and the M&ET runs along the south side of Yosemite almost from the Union Pacific yard on the west to the BNSF yard on the east. Tracks run due south (stub tracks mostly) with two wyes off of Yosemite Blvd. This made it ideal to use a thin peninsula off of Yosemite since there would be no need for an end loop. I did incorporate one of the wyes on each level which makes any run arounds easy without having to use the elevator to go to a single wye (see Image 03). For structures, most are warehouse style and were reasonably easy to scratch build using Google Earth and it's street view ability.

I used the names of an adjacent street as "locations" on the layout, but of course, the trackage doesn't run down the streets. In the prototype, the tracks are running between industries, which for the most part, are on both sides of the trackage, with the streets outside of them (see Image 04). In order to make the maximum use of the limited space, I consider the aisle to be the streets, using all the space for industries - 39 to be accurate. Some of the prototype trackage runs south almost to the airport and then turns east or west to connect to other tracks running back north. I took modeler's license and made them all stub tracks. There are a couple of cases where I wondered why the trackage was laid out as it was, but I tried to be as true to the original as was practicable, so followed the prototype when I could. Using both leading and trailing point stub tracks means some extra running for the crews, but I did use that strategy in some areas and we found that it works fine in practice during operation sessions on my M&ET.



Image 01. The Beard Industrial District from the Beard website.

For operations, I use JMRI Operations Pro to make switchlists and its versatility makes it a very good choice for this layout. For staging, I used three IKEA 6 drawer HELMER metal cabinets, about \$40 each, easy to put together and a great size for N scale cars and locomotives. Each drawer represents a destination stub track of a different car type in OperationsPro, and therefore the outside world.

An important consideration was interchange with the Union Pacific and BNSF. The UP prototype yard is about 1 mile west of the BID and the BNSF yard abuts the BID on the east end of the prototype in Empire. My interpretation of the yards was for a four track UP (see figs. 05/06) and three track BNSF (see Image 06) altered from the prototype due to space and capacity needs.

With the prototype M&ET being a switching shortline, all operator jobs are local, in yard, switching jobs. Operations involve two crews - one person or two, as engineer and conductor - the preferred situation, to be run for an operation session of from 2.5 to 3 hours. One job runs from the UP yard on the west side across the two levels to the other end where there is a BNSF yard. The other job is the reverse. They run at the same time and will meet in either of the three track yard areas just off (or going to) the elevator (see Image 08). Being a 100% within yard limits layout, the two crews can work out any meets on their own. Once they end their job at either the UP or BNSF yard, they then return their motive power to the engine house just off Riverside. Obviously, if an operator doesn't like switching, they will not like operating on the M&ET.

Each job starts in their origin yard with the train already to go, all cars taken from their staging file drawers prior to the session. Using their switchlist, the crew goes consecutively or not, their choice, from "street" to "street." The elevator holds only about 12 cars (approx 900 scale feet), so small switchers will work just fine, especially since the layout is quite flat - just like the prototype. Just like the prototype until about 10 years ago, I use GE 70-tonners, but I supplement them with UP and BNSF SW15's due to lack of availability of the 70-tonners in N scale in M&ET livery. After taking the elevator to the other level, the crew continues to the opposite yard where cars are left to be interchanged with the UP or BNSF according to which class one railroad works that end. After a session, the interchange cars are returned to their respective drawers in staging.

With the layout almost finished for operations, guests have indicated that the Modesto & Empire Traction provides a good experience and thus I consider it to have been a good choice as a prototype.

Moral of the story, after a large, successful layout, moving to a small layout doesn't have to mean having less enjoyment of the hobby!

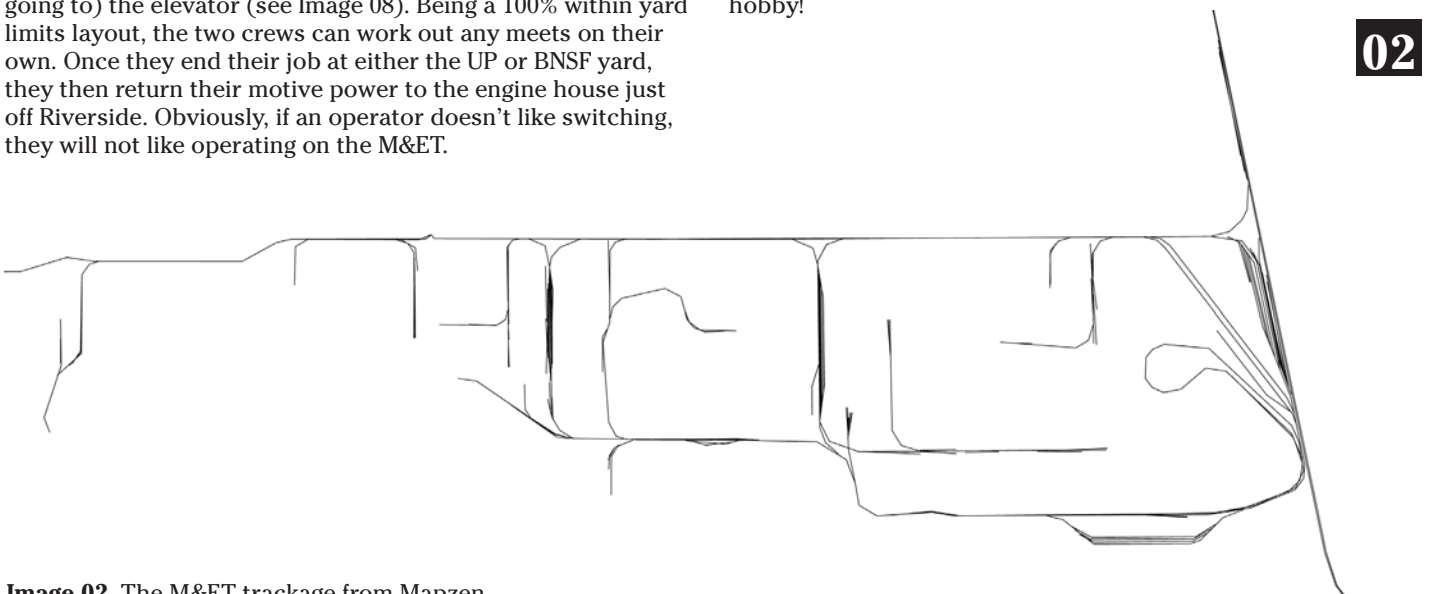


Image 02. The M&ET trackage from Mapzen.



Image 03. The wye off Yosemite Blvd next to Garner Road on the top level with the south (left) leg of the wye running down the peninsula past Ring Container and others. The peninsula makes it real logical to place the wye here.



04



MODESTO AND EMPIRE

TRACTION COMPANY

Image 04. Three stub tracks run down the middle of the industrial area between Mitchell Road and Spenker Ave. The middle track makes a good place to “hide” cars during operations until needed.



05

Image 05. The big plant is the Gallo Glass bottle plant, making wine and spirits bottles for customers around the country - said to be the largest of type in North America. The UP yard is in the back.



Image 06. The West end of the M&ET with the Union Pacific yard on the far left and the Gallo Glass industry in the middle. To get to the Gallo plant which is about 0.5 miles from the yard, the job that comes from the UP yard needs to run to the far end, around the curve behind the town and push back into the industrial trackage for the four industries.

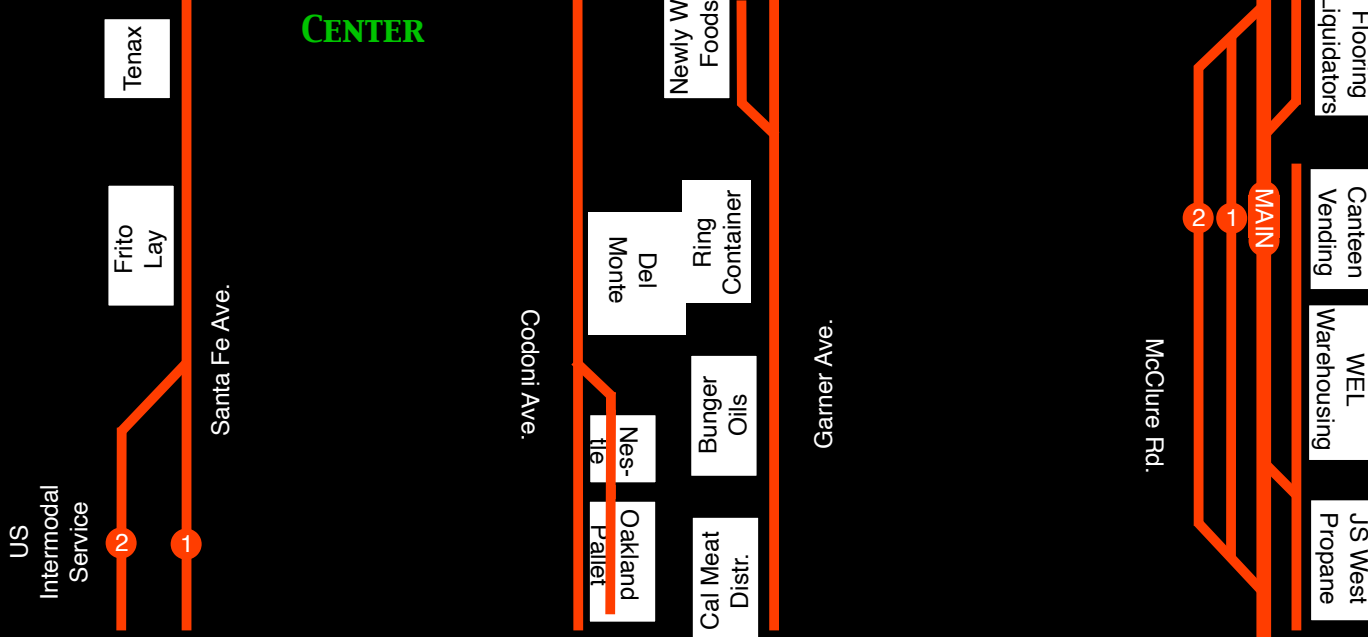


Image 07. On the upper level and at the far east end of the M&ET is the BNSF yard on the left and three industrial locations on the right. The Intermodal area and the other two businesses are accessed by running north, around the curve and backing into the industrial area.

BNSF YARD MAIN



BNSF AUTO DISTRIBUTION CENTER

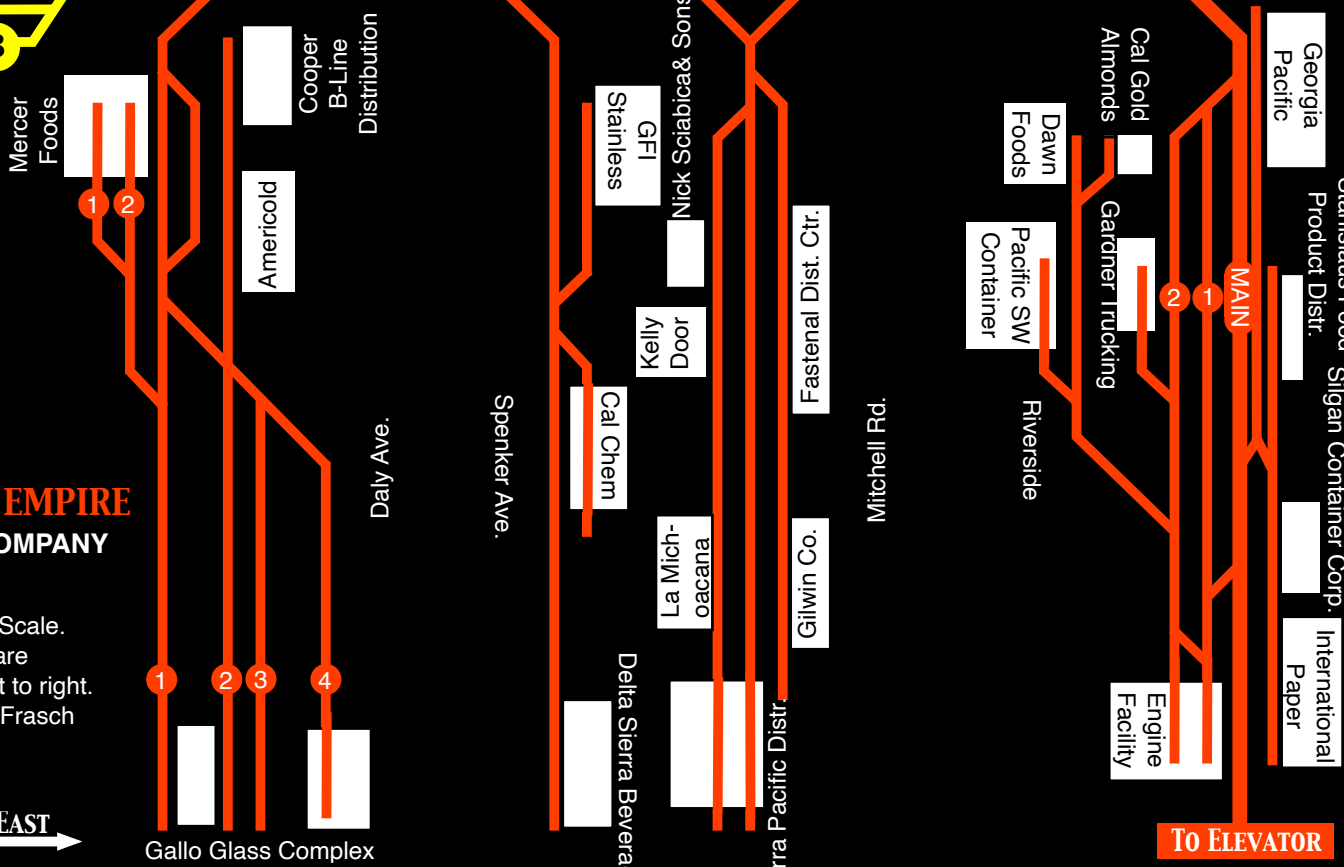
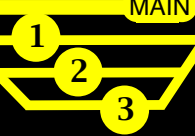


UPPER LEVEL

TO ELEVATOR

LOWER LEVEL

UP YARD MAIN



MODESTO & EMPIRE TRACTION COMPANY

Note:
Schematic Not To Scale.
All building doors are numbered from left to right.
Copyright 2020 Al Frasch and Kirk Reddie



TO ELEVATOR



Image 09. There was adequate space on the transition from Daly Ave. (on the left) to Spenker Ave. (right), to model a small residential and business area - it really doesn't look like Modesto, but it fits the space and gives the flavor of the layout being in a populated area.

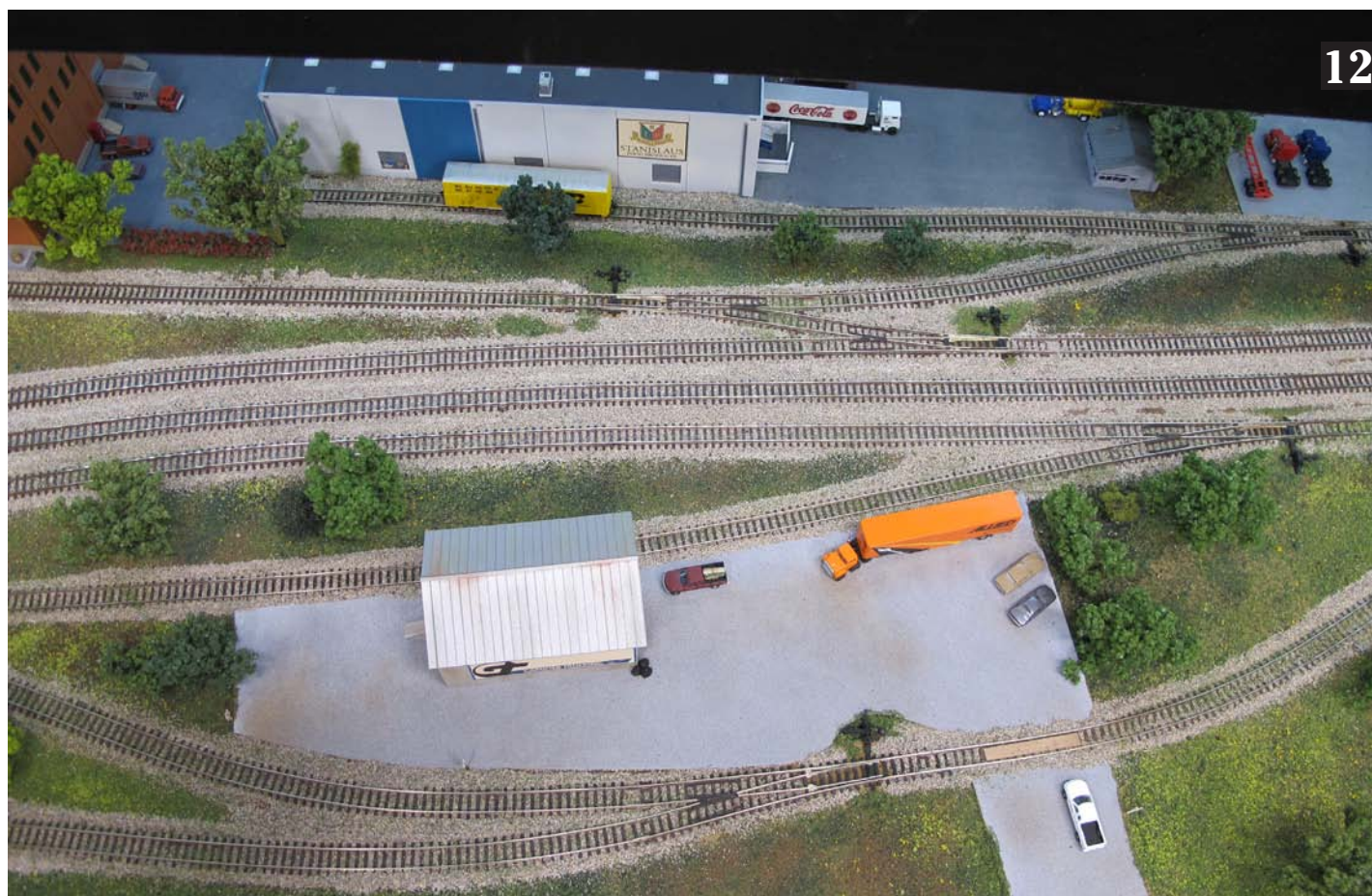


Image 10 & 11. The Del Monte plant above and the Ring Container Technology building (Image 11), are the same building. The two sides seen from Codoni Ave for the Del Monte load/unload area are a slightly different color than the Ring Container side, and the Ring Container side has that distinctive "stripe" which was quite visible from the Google street view. Since each side can only be seen if a person is in the aisle for that side - it works.



11

Image 11. The other side of the Del Monte plant (Image 10) is Ring Container Technology.



12

Image 12. The three track yard at Riverside on the lower level just before the elevator allows space for the two jobs to meet during operations. There is a similar yard at the other “end” of the elevator in case they meet on the upper level. This is not a firm meet since the number of moves for each job varies greatly and, besides, this is a 100% yard limits layout and the crews can work out how they want to meet and where.

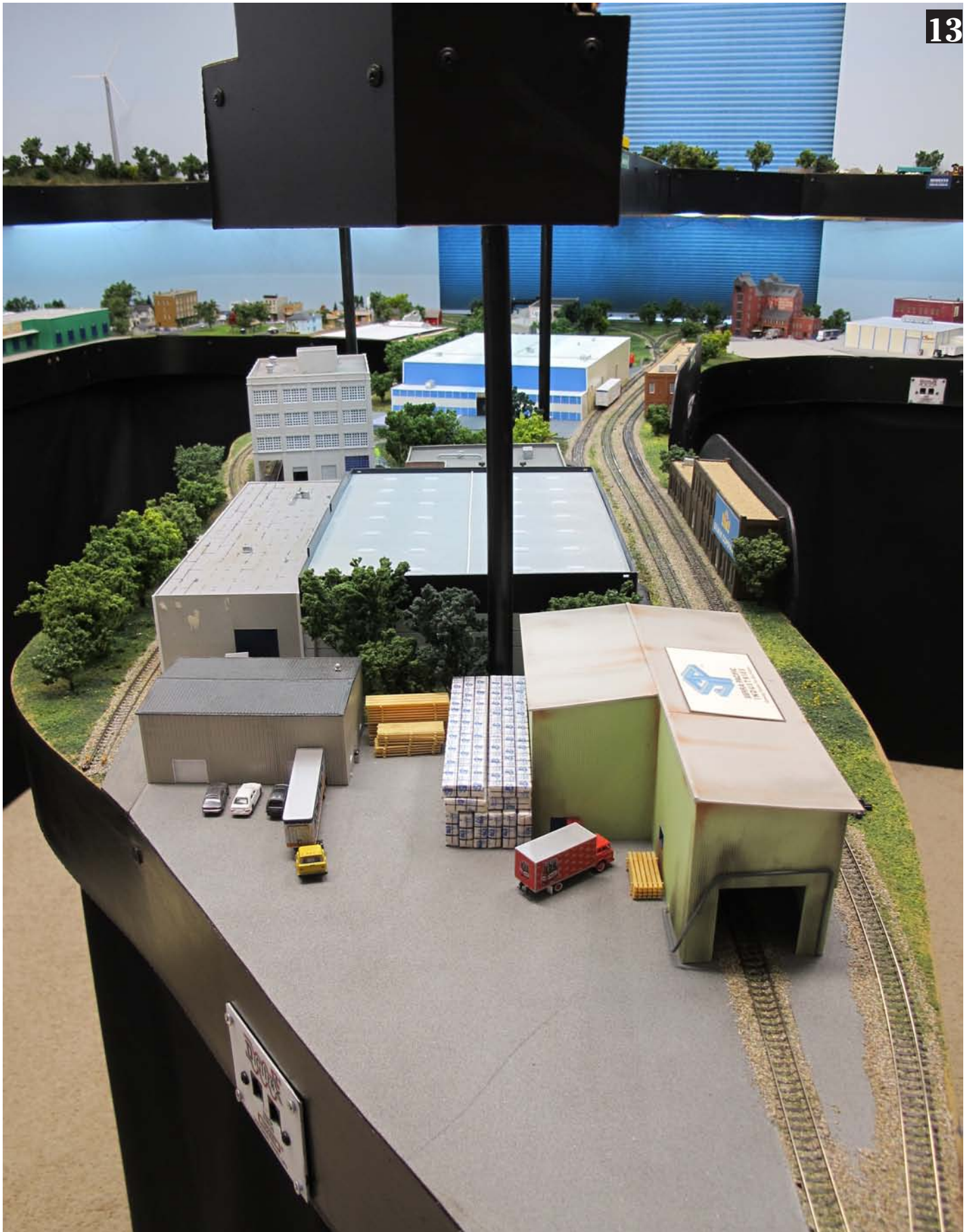


Image 13. Looking down the lower level peninsula between Spenker Ave. and Mitchell Road - remember, Spenker Ave. and Mitchell Road are actually in the aisles (left and right in this picture).



14

Image 14. An overall picture from the door into the layout with both UP and BNSF yards on the left wall.



15

Image 15. The peninsula with the right side ending at “tunnels” in the wall on the way to the elevator in the back.



Image 16. These three IKEA 6 drawer HELMER metal cabinets work great for holding the 18 stub end staging tracks that OperationsPro thinks are at the end of both the UP and BNSF Yards, each holding a different freight car type. They are hidden behind the skirting during operations.

28th Annual



RENO ATTRACTIONS:

- THE DISCOVERY - TERRY LEE WELLS NEVADA DISCOVERY MUSEUM
- NATIONAL AUTOMOBILE MUSEUM
- TRUCKEE RIVER WALK
- RENO RIVER WALK
- RENO AIR ASSOCIATION - STATIC AIRPLANE DISPLAYS
- NEVADA HISTORICAL SOCIETY
- W.M. KECK EARTH SCIENCE AND MINERAL ENGINEERING MUSEUM
- NEVADA MUSEUM OF ART
- FLEISCHMANN PLANETARIUM
- RENO ARCH
- RENO ACES (AAA AFFILIATE OF MLB ARIZONA DIAMONDBACKS)

CARSON CITY ATTRACTIONS:

- NEVADA STATE MUSEUM
- NEVADA STATE RAILROAD MUSEUM
- NEVADA STATE CAPITOL BUILDING
- CARSON CITY MINT MUSEUM
- VIRGINIA AND TRUCKEE RAILWAY

NEVADA MINING CITIES:

- VIRGINIA CITY
- SILVER CITY
- GOLD HILL

NEAR BY HISTORIC PLACES:

- EMIGRANT GAP, CA - SCENIC VISTA
- TRUCKEE, CA - HISTORIC DOWNTOWN AREA
- DONNER PASS - HISTORIC PASS
- DONNER LAKE
- LAKE TAHOE

RENO
NATIONAL
- N - SCALE -
CONVENTION



CHECK OUR WEB SITE FOR MORE DETAIL
National-N-Scale-Convention.com

Contact: Dick Ollendorf, Convention Chairman
(610) 923-7535 • Dick@NScaleEnthusiast.com

N HORIZONS

Atlas. Atlas has purchased some of the molds and tooling from True Line Trains of Ontario, Canada. Train Line started as LifeLike of Canada and offered H0 and N models of Canadian and US prototypes. Of the N scale models, Atlas has acquired the tools for their Alco C424 and EMD GP9 locomotives.

RailSmith Models. Lowell Smith started by commissioning special runs back in 1992. Then three years ago Lowell purchased the nice Walters N scale line of lightweight passenger cars and are now sold under the RailSmith Models name. Lowell made upgrades on the original tooling such as simulated stainless steel window frames.

Keeping contacts with almost every N Scale rolling stock producer, helps Lowell with his 'Build-a-Train' concept. For example, his *Texas Special* train offers special run Micro-Trains cars mixed with RailSmith Models' to expand the variety of cars needed to create that specific train consist.

RSM just announced their first original tooling: A Pullman-Standard plan 7510 smoothside coach/chair car with both skirted and non-skirted versions and built to the standards of current RailSmith models. This is a car that has not been offered in N scale until now. What makes this car important for many of us, is that it has smaller windows. The Northern Pacific coaches 500-517 were exactly this P-S 7510 car. This new car is also a very good stand-in for many other coaches with similar window sizing.

The first are arriving in January 2021. The plan for releases include:

Great Northern. *Empire Builder* and "Big Sky Blue".

Illinois Central.

Northern Pacific. Both the Loewy two-tone green and the 1947-1952 Pine Tree scheme.

Spokane Portland & Seattle. Broad-Stripe, Four Stripe, and *Empire Builder*.

Union Pacific. Yellow and Gray, and *The Challenger* is possible.

Southern Pacific. Yellow and Gray, as well as general service silver with red letterboard.

Amtrak.

Why do the windows matter? On the Great Northern's 1947 *Empire Builder*, the first coach (for short haul passengers) had big windows like the current RSM smoothside coach, (which is currently offered in the *Empire Builder* scheme). The next three coaches in that consist had small windows, like this coach, with fewer seats so each passenger had more leg room. When the Budd dome coaches were added to the GN consist, the long-haul flat top coaches were bumped to other trains as well as being used in reserve for the *Empire Builder*.

RailSmith.net

Trainworx. They are probably all sold out by now, but Trainworx just released matching tractors and gas tank trailers in Esso, Gulf, Mobilgas, Shell, Texaco, Chevron, Hess, Philips 66, Sinclair, Sunoco, and Union.

Kato USA. 2020 October should see the all-new 9-car *Twentieth Century Limited* set, 4 car add-on, and matching E7s. The Kato website has images of art work, test shots and preproduction models. 2020 November should see the passenger cars with factory installed lighting and Digitrax DCC or ESU Locksound installed in the locomotives.

2021 FEB should see a new run of 8-pack sets of Bethgon Coalporters in Union Pacific, CSX, BNSF "Swoosh", Canadian National, and Norfolk Southern. ▀

TRAVEL GUIDE N EVENTS

2021 FEB 27-28 WA Monroe The Annual UNW Show will skip a year. See you in 2022.

2021 MAY 15-16 OH Hilliard/ Columbus area. 12th Annual Ohio N-scale Weekend at the Franklin County Fairgrounds, 4100 Columbia St., Hilliard, OH <http://www.centralohiontrak.org/>

2021 JUN 22/23-27 NV Sparks/ Reno area. 28th Annual National N Scale Convention host-

ed by the N Scale Enthusiast. The main venue is the Nugget Hotel that has free parking. An early bird visit to the Western Pacific Railroad Museum in Portola is planned for June 22. The plan for the convention includes layout tours, Convention Banquet, Welcome Reception, Manufacturer's Breakfast, Live Auction, Swap Meet, and more!

2022 JUN ??-?? TN Nashville. 29th Annual National N Scale Convention ▶

OBSERVATIONS

Thoughts by Kirk Reddie

N *Scale Railroading* focuses on North American N scale. Is this because we don't like non US or Canadian railroads? No. Because we don't understand overseas railroads? Partially. Insecurity? Hopefully not. We have featured early Japanese T-TRAK and a DB layout in BC.

Distance and language make accurate modeling of foreign railroads tough for everyone. No matter how great European and Japanese prototype models are, how they operate?

There has never been a mass marketed US made N locomotive. We have always been dependent on US firms importing OEM locomotives.

How did this happen? Treble-O-Electric by Lone Star (1:152) was probably the first successful commercial scale close to N. Arnold Rapido was the first continental firm to popularize 1:160 and created, copyrighted, and allowed all manufacturers to use the Rapido coupler. It was way oversize but N, unlike other scales, everyone's couplers worked together. Today's knuckle couplers look better but for the most part everyone's knuckle couplers should work with Micro-Trains couplers but not necessarily with each other.

Among the first models for US railroads were Arnold and Lima Wagon-Lits cars painted and lettered for Pennsylvania Railroad. Early US prototype N were OEM products from Germany (Rapido, MiniTrix, Rowa, Fleischmann), Austria

(Roco), Japan (Kato), UK (Peco track), Italy (Rivarossi, Lima), Yugoslavia (Mehano), etc. The tooling for many of those lines hold up well, though often the graphics were very crude.

Structures were a problem. Most available were repackaged European models. I later realized that some tunnel portals offered by Aurora were very specific models of the BLS's Simplon Tunnel. I fully realized this during my first visit to Bill and Wayne Reid's layout. Where did they get all the US structures? Many were modified kits the rest of us had. Few of us are Bill Reid. I think it was Bob Lunde's kits in the early 1990s that made it easier to model typical brick buildings.

OK: The market has supported US N and often at prices less expensive than models of other countries's prototypes. How does one learn about foreign railroads? Awhile ago I decided to learn Ebay, Google Translate, and more about European railroads. I used Google translate on Wiki and decided I liked TEE trains, the Swiss SBB Goddard Line (They started electrifying the same time the Milwaukee was wrapping up their electrification), and period Wagon-Lits cars. I used Ebay to get inexpensive green SBB electrics such as Fleischmann Ae 6/6s and Re 4/4s (and the German 103s), Kato made Re 6/6s and Re4/4s, and HAG Ae 4/7s. Kato's *Orient Express* set is in its own universe. I haven't figured out (yet) what combination of wonderful German TEE cars from Fleischmann and Arnold to I need to model *TEE Grand Fenwick* yet. I stopped when i started my layout but I still am fascinated by them. ▶

SEE YOU NEXT ISSUE!



Bill Edgar

- Operating the Milwaukee Road's Wisconsin Valley Lines

Over the next several issues the plan is to feature articles on an all-new layout, another article on Kato F Unit chassis, kitbashing structures for small cityscapes, modeling a riverbank, ...

- ...And More!