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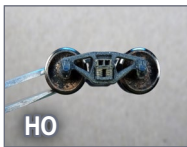
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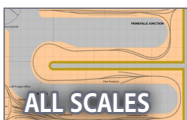
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Compiled by JOE FUGATE



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RICHARD BALE and JEFF SHULTZ

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PUBLISHER'S WELCOME

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MRH Running Extra | July 2019

JOE FUGATE: WOULD YOU BELIEVE POWERED PIN VISE TAKE 3 ...

★★★★★
RATE THIS ARTICLE

OVER THE LAST COUPLE OF RUNNING EXTRA ISSUES

I've been refining the idea of a powered pin vise tool using various slow-speed cordless screwdrivers. The feedback on these tool ideas has covered the gamut from delighted to disappointed.

Last issue, I recommended a more commonly available Black & Decker cordless screwdriver and a standard 1/4" hex shaft microchuck from Rockler that takes bits down to an amazing #97.

Unfortunately, that Rockler microchuck with its four jaws makes it very difficult to get tiny bits centered – and even then they wobble some. So off to search for a better small chuck with a 1/4" hex shaft!

WEB*: 3-Jaw mini-chuck 1/4" hex shaft (close down to #80):
amzn.com/B072FMW3GP?tag=mrhmag-20

The Black & Decker screwdriver (take 2) also has a bit of slop in the 1/4" hex socket, which can allow the chuck to wobble slightly. So while I was at it, I also looked for a small powered screwdriver with a zero-slop 1/4" hex socket to grip the mini-chuck and have zero wobble [1]. I found one that includes the ability to bend 90° for a more secure grip as well: the SpeedHex FlipOut.

Take 1 in the May issue remains the best choice if you can find it. But if not, take 3 this issue is darn close. Take 2 is my least favorite. ☑

* mrhmag-20 on the end of the Amazon link gives MRH credit for the visit and a small percentage of the sale if you do make a purchase. This helps MRH fund more helpful articles and videos when you use this link.

PUBLISHER WELCOME | 2

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1. The SpeedHex FlipOut allows rotating the top third of the tool at a 90 degree angle, making it easier to grip and support the tool when using it with tiny bits. The 1/4" hex shaft socket on the SpeedHex uses a collar ring that locks the minichuck securely with no slop. The slop in the 1/4" hex socket that many powered screwdrivers have can allow the chuck to wobble.



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THE LIMITED MODELER

column



MRH Running Extra | July 2019

JIM SIX WONDERS IF IT IS TIME TO RESET?



MANY MODEL RAILROADERS GET TO A POINT

WITH their layouts where they question their accomplishments and where they are headed. Building a layout is a learning experience where you improve as you work at it. There comes a time when your current work is much better than what you completed in the early stages. When this happens, we tend to question our layout direction. Should you rebuild some of the things you did earlier? Should you keep going and tell yourself what's done is good enough? Or should you simply start over again?

These are tough questions to answer.

There are other reasons to start over with your layout. You may need to pack up and move to a new home in a new location. You may experience a natural disaster that will necessitate serious re-work of the layout. This has happened to me.

A BASEMENT DISASTER

Last summer I posted on the *MRH* Forum that I had experienced a "water event" in my basement, specifically in the train room.

▶ DOING MORE WITH LESS

THE LIMITED MODELER | 2

At first, I planned to fix the leaks and then continue layout work. However, the water intrusion was worse than I had thought. The fix would require removal and repair of the concrete wall. I had not built the layout with mobility in mind. It was permanently attached to the concrete wall. Repairing the wall would mean destroying the layout.

This was a major setback impacting me and my hobby. I stopped work on everything to brood about my predicament. I wondered if I should remain in the hobby. Should I sell off my trains and be done with it?

I have been building this layout in an unfinished section of the basement for twelve years – probably the most stupid thing I have done in the hobby was to build the layout in an unfinished space. The unfinished room has caused more dissatisfaction than anything I have experienced as a model railroader. The only way to fix my basement leaks and overcome my layout dissatisfaction would be to remove the entire layout and finish the basement in order to restart my hobby activity.



1. A New York Central Mikado drifts through a scene on Jim Six's HO scale layout.

Today, I sit in Florida for a long vacation with my wife Joanne. When we return home, I will pack the trains and clean up the basement. I will dismantle the layout and save parts worth saving. Repairing the basement wall will be the focus, before finishing the basement space and before starting a new layout.

LOOKING AHEAD

The many months since the water event have given me time to think about what I have done right and wrong. Building in the unfinished basement was a big mistake. Another mistake was placing realistic appearance ahead of operability. I had laid code 70 rail for the main tracks and code 55 for sidings. While this looks realistic, the code 55 track has not worked out as expected. Scenery applied to the track overlaps the short rail height, causing the trains to ride on the scenery. Because of this, I've decided not to use any rail smaller than code 70. I've not had any issues with the code 70 track, and it does look good.

I plan to use code 83 on main tracks and code 70 for sidings. Switches in the main will be #8, with #6 switches used for sidings. Switches beyond the main tracks will be code 70. I plan to break with typical model railroad construction and not use rail joiners anywhere. Rails will butt together, and all rails will be electrically fed from the DCC electrical busses. Track will be super-glued to the ceiling tile layout surface. I experimented with this and it worked perfectly with no separation at the joints and no buckling.

DESIGN THOUGHTS

Another mistake I made was to follow long-time wisdom that states track should not parallel a straight edge of the layout. Track on my current layout angles away from the fascia then back toward it. This makes it difficult to fit industry buildings in



2. Jim's New York Central Mikado wears a lettering style that came into use in 1936. He will need to re-letter his locomotive fleet with decals to reflect earlier practices.

the remaining space – even at 24 inches wide. I will not repeat this mistake. The new layout will be no wider than 16 or 18 inches, with tracks closer to the fascia, allowing industry placement between the tracks and the backdrop. Will there be industries on the fascia side of the tracks? Probably not. I feel there are too many inherent problems with that. It is difficult to spot cars at buildings sitting between the track and aisle.

Another serious flaw in building my current layout was a lack of a track plan before starting. I just laid track that met my needs at the time, but my needs kept changing. This time I will probably use the Sturgis Sanborn Fire Insurance Maps I have, and stay with my plan.

OPERATE OR FINISH?

Another point with the current layout occurred when operation started. I began operating the layout with friends once track was installed and functioning. These operations delayed completing the structures and scenery. That work dragged on for years because operating the layout became my focus. That will not happen again. I will not declare the new layout operational until it is nearly complete.

Another error I repeatedly made was changing my modeling era. I started modeling Conrail in 1980, then NYC in 1958. I kept backdating my focus: 1954, 1943, and finally 1927. I will stay with 1927, as I sold off or gave away models that would fit other eras. Figuratively speaking, I burned the bridges behind me with the move to 1927.

ERA CHALLENGES

The ever-changing layout era has caused problems with my locomotives and fleet of freight cars. My NYC 2-8-2 #1890 is a completed locomotive [2], but it is resplendent in the post-1936 paint scheme, not 1927. This and all my NYC steam locomotives need to be re-lettered in the pre-1936 scheme. Sigh . . .

Many of my finished freight cars have a similar issue. I have sold or given away several but kept the ones with the most personal meaning. They will need to be re-lettered. Every model that goes through re-lettering will need to be touched up and re-weathered. Fortunately, my Pennsylvania Railroad locomotives do not have this issue [3].

Unfortunately, most of my Pennsylvania freight cars wear the famous Circle Keystone herald. This herald was first applied to PRR freight cars in 1931, four years after my 1927 setting. I must remove



3. A Pennsy H-class 2-8-0 with a Lines West tender awaits assignment on Jim's layout.

the Circle Keystones and touch-up the paint. This is a simple process. The PRR lettering for several years prior to 1931 was identical without the Circle Keystone. Three of my Pennsy coal hoppers are seen in [4]. The Circle Keystone has been removed from the car at the left, with two others needing this modification.

MORE CHANGES?

Since I will start again with a new layout, the opportunity for change presents itself – again. I have a nice plan for Sturgis, Michigan, and will likely stick with it in a simplified track arrangement. But also I plan to investigate other settings and find one that could replace Sturgis. If I like it enough, I will again use Sanborn maps to determine a layout plan for the location. I'll select either the new location or Sturgis when I arrive at that point.

I have always enjoyed coal hauling railroads. It is why I added a power plant that never existed in Sturgis – so I could run some coal trains. The new layout will allow for coal trains, which means it may have a power plant. I need to think about this more, as I have enough hoppers and gondolas for coal train operation. I would have a hard time parting with these models, which is why I'm considering a coal country location. It would offer interesting hill country scenery but would eliminate grain elevators and several factories.

A FINAL LAYOUT

As an aging hobbyist, I see what lies ahead as my last big opportunity to build a dream layout, so it must be right. I am very concerned with losing my model-building “touch” with diminishing eyesight. Most of all, I am alarmed that a loss of interest may throttle the hobby for me. These are not current issues. I just need to stay active and start working on my goals.



4. Three weathered Pennsy hoppers. All three hoppers are Bowser models.

I will remain focused on 1927 and retain most of my locomotives and freight car fleet. All the reasons I chose 1927 remain valid and unchanged. I will stay with either the New York Central or the Pennsylvania, as I have too much invested in these railroads to change. The question is which of these railroads will it be, or can I do both? Staying with Sturgis means I can do both.

Do I hear you telling me to stick with Sturgis? That would be logical and make sense. An image taken on my current layout leads this column [1], but with a new photo backdrop. I feel it looks better than anything else I have tried to this point. While this new backdrop photo is of West Virginia, similar terrain can be found in northern lower Michigan, southeastern Ohio, or north-central Pennsylvania. The NYC and the PRR operated in all these locations. All three areas are within driving range for a backdrop photo safari. I need to determine if a hilly setting is enough to abandon Sturgis and start researching another area.

Another possibility is to stay with the Pennsy's GR&I line that ran north from Ft. Wayne to Mackinaw City. The scenery north of Grand Rapids looks very much like my current layout [1]. This scene could be any number of places there, but what of the New York Central? It too ran north to Mackinaw City, and some towns were served by both railroads. Would one of them work for me?

Facing diminishing resources, finances, time, and abilities, I should probably emphasize simplicity. My 12 x 24-foot train room is a lot of space compared to many model railroaders. I don't have to cram it full of layout. Narrowing the layout shelf depth and simplifying the track plan will reduce the dollars and time to build anew. It sounds smart to me. I hope you understand what I am going through. You may find yourself in a similar situation someday.

TO SUPERDETAIL OR NOT?

Removing cast-on grab irons was recently discussed in a group. Replacing these with individual formed wire grabs is a superdetail undertaken by quite a few model railroaders. Many prototype modelers feel they cannot do without these separate details. I ought to know, since I was one of them.



5. A Pennsy GS class steel gondola with upgraded details.

For most of the past several decades I promoted this kind of upgrade. I wouldn't display a freight car with cast-on grabs. It wasn't good enough for me. However, I did not have a layout to build and operate. I was building models for personal satisfaction and to display at RPM meets. It was a satisfying endeavor that I thoroughly enjoyed.

The gondola model in [5] is a factory-painted Bowser model. I added separate grab irons, new metal stirrup steps, air hoses, Kadee semi-scale-size couplers, metal wheel sets, and weathered the car. It looks great to my eye, but I'm not sure I'd do this again. I installed 18 grab irons and 36 Detail Associates nut/bolt/washer castings. I drilled 72 holes to install these details. I no longer feel it was worth my time, as my models are for the layout and not a contest.

My superdetailing thoughts changed after I started building a layout. I now realize a larger layout needs more freight cars and time to build them. I don't feel I can superdetail enough

freight cars in this lifetime. When ready-to-run cars came along,

TO SUPERDETAIL OR NOT? *CONTINUED...*

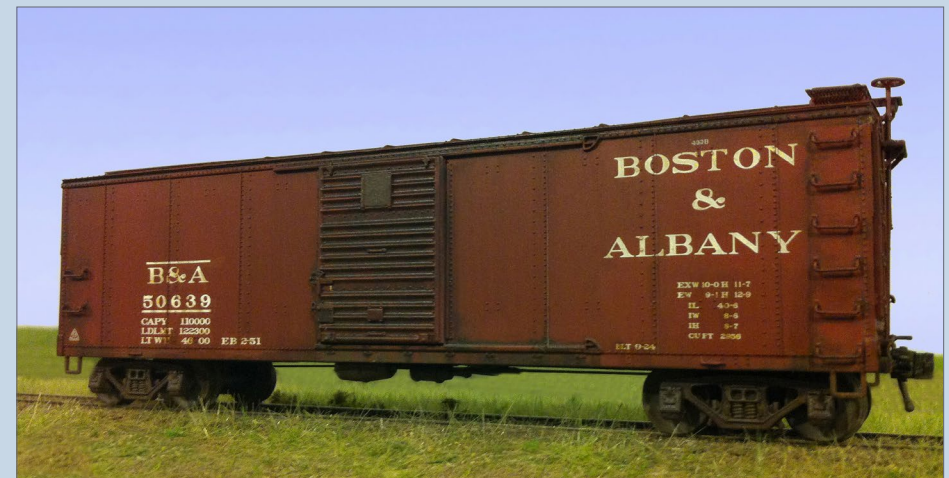
6. The Circle Keystone has been removed from this PRR hopper. Ladder grabs have been carved off and replaced with wire details.



7. Another of Jim's Pennsy hoppers with the Circle Keystone removed, but the model retains the cast-on grab irons. Can you see the difference?

I thought heaven had bestowed a great solution. Ha! I found the costs greater than my resources. They also were not ready for layout duty without considerable work on couplers and weathering. Few of these are equipped with my coupler standard, the Kadee #153 short-shank scale couplers. I found some ready-to-run cars equipped with wheelsets that don't meet my standards. Additionally, duplicate cars need alterations to car numbers with decals or dry transfers.

I needed to reduce the time to prep a freight car for the layout and to reduce the costs. I decided to focus on Accurail freight cars, as they offer several kits that work for 1927. I've been impressed with the quality and detail fidelity of Accurail models.



8. B&A 50639 represents a USRA-design steel-sheathed boxcar built in the early 1920s. Broadway Limited produced these HO scale models several years ago with separate grab irons and other fine details.

TO SUPERDETAIL OR NOT? *CONTINUED...*

They have improved tooling on recent models to the point that I prefer their cast-on grab irons.

A tale of two hoppers can be seen in [6] and [7]. These Bowser cars have cast-on grab irons. However, the hopper in [6] has had the ladder grab irons carved off and replaced with formed wire and nut/bolt/washer castings. The car in [7] has the original cast-on details. Frankly, I like the cast-on versions a bit better than the separate grab irons.

I have seen many superdetailed freight cars at RPM meets and elsewhere. In my opinion, the grab irons are typically a bit oversized and rarely, if ever, line up perfectly. The Accurail cast-on



9. Jim added a few details and weathered this Omaha Road USRA double-sheathed wood boxcar. These Accurail models are solid representations of a classic boxcar design. Compare the grab irons with the B&A boxcar [8].

grabs are more appealing to my eye. They look better than separate grab irons when weathered properly. The same can be said about freight car ladders. Accurail has improved those details over the years. Bowser detail quality has also improved, maybe not quite as much.

Let's compare a couple of freight cars with separate grab irons and cast-on grabs. A Broadway Limited ready-to-run model with formed wire grabs is featured in [8], while [9] shows an Accurail shake-the-box kit model with cast-on grab irons. I added running board corner grabs and formed wire cut levers.

I want my freight cars to have scale-size running boards and brake wheels, decent under-body brake equipment, short-shank scale couplers, and maybe coupler cut levers. I may even add support braces under the ends of running boards. Appropriate lettering and a good weathering job is what it takes to make me happy. I feel these details are possible with a 100-car freight fleet. ☒

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The Lehigh Line Expansion

MIKE ROSE *reports progress made on his Lehigh Line build-out ...*

1. The road power from ALCG runs a monster train out of staging, shown here crossing the river at Towanda PA.

GETTING REAL

column



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MRH Running Extra | July 2019

MY JANUARY COLUMN DETAILED THE EFFORTS to bring an addition to the house to fruition, new space dedicated to the layout for the most part. As promised, a pleasant pair of op session/open-house sessions concluded on Saturday, January 5.

Believe it or not, I was already taking steps *that evening* to begin relocating Pittston Yard and a staging yard to go underneath it, along with changing the route to access staging underneath the planned paper mill at Ransom, PA.

To say that I had been chomping at the bit to start this undertaking is an extreme understatement!

The first thing I had to do was undertake a serious relocation of rolling stock. Everything in Pittston Yard, in the industry at Ransom, and in the 22-foot, eight-track staging yard, all had to be moved.

Half went into A-Line storage boxes. When those filled up, I did a couple of long trains and just ran them onto the layout. One was 52 cars long!

When most of the supporting benchwork was in place, it was time to turn our attention to getting Pittston Yard back into proper location.

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► MODELING REAL RAILROADS AND WHAT THEY DO

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2. The tail end of "the last train out of Pittston," at least from this location. The new room is in the upper rear of this photo.

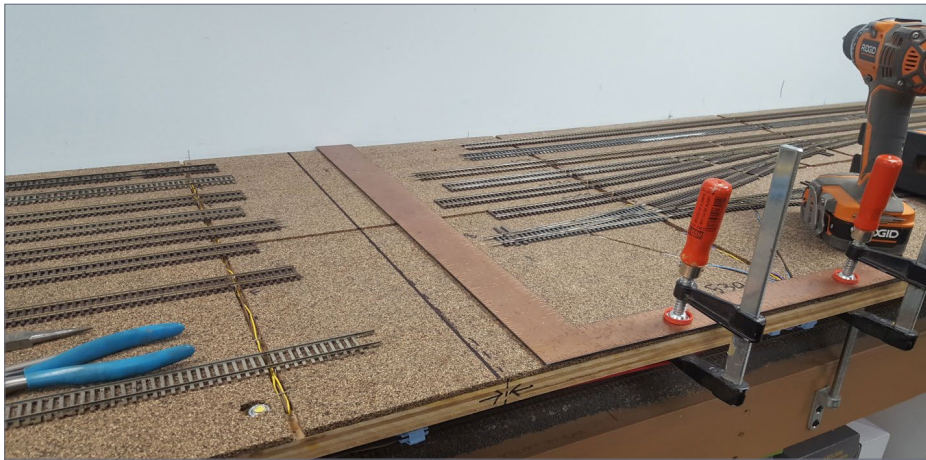


3. The Pittston Clearance Train runs the length of the back wall of my basement. In the foreground is the soon-to-be-removed Ransom, and Tunkhannock is toward the rear.

GETTING REAL | 5



4. Destruction of the Pittston Yard and staging approaches commenced immediately.



5. I had previously determined the best spot to cut Pittston Yard in half (meaning the *least disruptive* to restoring the tracks later). So with those sections removed, I laid out the cut line. A handy cordless Ridgid jigsaw made quick work of this cut.

GETTING REAL | 6



6. My buddy Dave had arrived (this is Sunday, the next day) and helped me remove the first section of Pittston Yard and store it in the new room.



7. Hard to believe that 24 hours earlier we were running an op session here! Pittston Yard is simply gone, revealing Allentown and Sayre staging underneath. The yard is evenly split between them. Note the dual approaches – the ladder will be modified to create one staging yard for just Allentown in the new scheme.



8. A bit disturbing seeing both halves of Pittston Yard and the entire Ransom section leaning upright against the front wall of my workshop. The wall used to be the outside front wall!



9. This is where Ransom used to be. That staging track curving to the left was later totally removed so the new path to staging could swing out to the right, through the wall.



10. For perspective, I am standing at the former Ransom site in [9] and turned left to look toward the new space through the wide doorway in the distance. My largely finished old layout and basement are behind me.



11. Cutting through the plywood at the location in [9] reveals the already drilled holes through the house foundation into the former oil tank room, now Crestwood.



12. Next I began the process of relocating the staging yard. Since it was too long to move as a unit, I first removed this end section.

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13. There was much discussion at the last op session about how to move this giant section of benchwork into the new building. A conversation with Dennis Drumheller spawned the idea of using the existing A-Line carts that I'd made as the conveyance vehicle. Here I've made an adapter to fit up into the benchwork of the yard, and temporarily screwed it to the cart. I located them to just clear the underside so the drop, once disconnected from the wall, would be as short as possible.



14. The yard is now fully disconnected and supported entirely by the carts and adapters!



15. Here's the entire assembly, rolled into the new room. It was a bit dicey doing this with two guys, but it went pretty well overall. Note that we had to disconnect the curved section of the yard to complete the turn. It was amazing for us to see it in a different location and to be able to view it from the opposite side for the first time. Frankly, it looked so big that there was no way it could have come out of the old location!



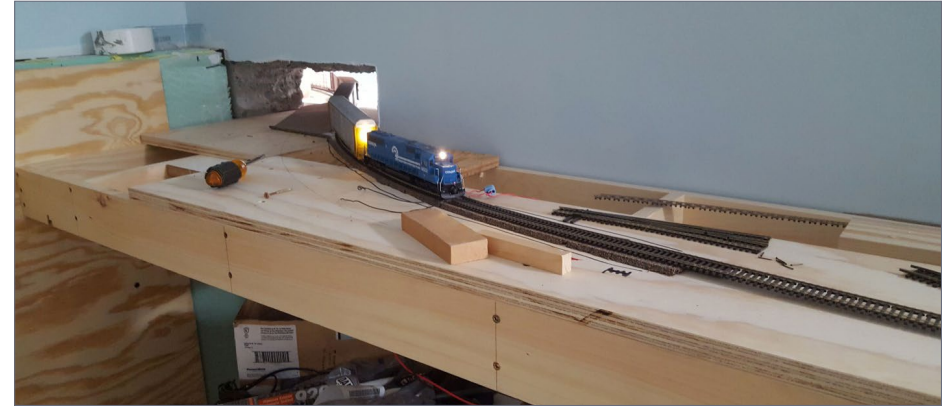
16. This is the old staging and Pittson yard location – and future home of Dupont. Mehoopany is under wraps to the left.



17. With everything cleared out, it was time to start building! I constructed some new benchwork under the old Ransom spot you saw in [9]. The first thing I wanted to check was that I had enough clearance through the drilled holes for the new mainline route.



18. Here's a different perspective of [17], showing how the gentle S curve handles long cars with ease. Eventually none of this will show so it needs to operate perfectly.



19. The best way to test operation is to liven things up! Here's the first test train through the scene in [18] from the old basement into the former oil tank room, now Crestwood. An industrial park will be created here.



20. With the new hidden tracks in place and everything tested, it was time to reinstall Ransom at its new location. We took the opportunity to move Ransom another foot and a half or so away from Tunkhannock, something my friend Dave had been pushing for since it was built.



21. Closeup of the right end of the scene in [20]. The extra space will give a much better feeling of distance between Ransom and Tunkhannock, since you really need that negative space before you get to the bridge.



22. March was devoted to new benchwork. Here the relocated staging yard gets connected to what will support Pittston Jct.



23. Back in the former staging/Pittston location, new benchwork went up to support Dupont.



24. This is how we handled the curved corner benchwork connecting the two sections.



25. In the new room, we extended the Pittston Jct. bench-work towards the "window" into the original basement. This will support the Lehigh Line from Pittston Jct. behind us, through the opening and taking a right for the D&H crossing/interchange at Dupont. The Conrail Taylor secondary also travels this route for a while (former EL "Bloom" line).



26. For clarity, here's the opposite angle view looking towards Pittston Jct.

This was an important step because everything keys off this vital spot on the railroad.

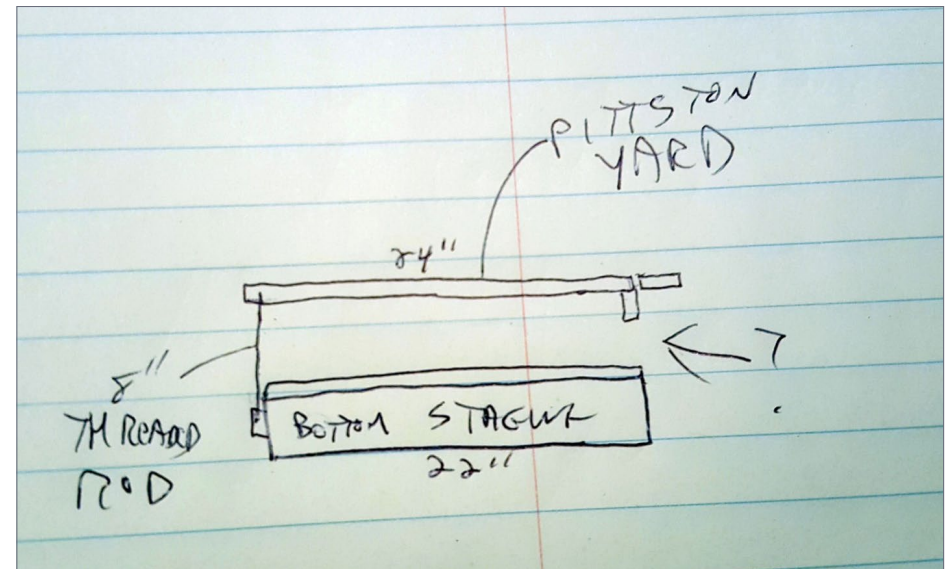
I had some issues here since I was adding a mainline track that needed to be cantilevered off the edge of the yard. I decided to use square steel tubing with threaded rod to give me the flexibility to do pretty much anything I needed to do.



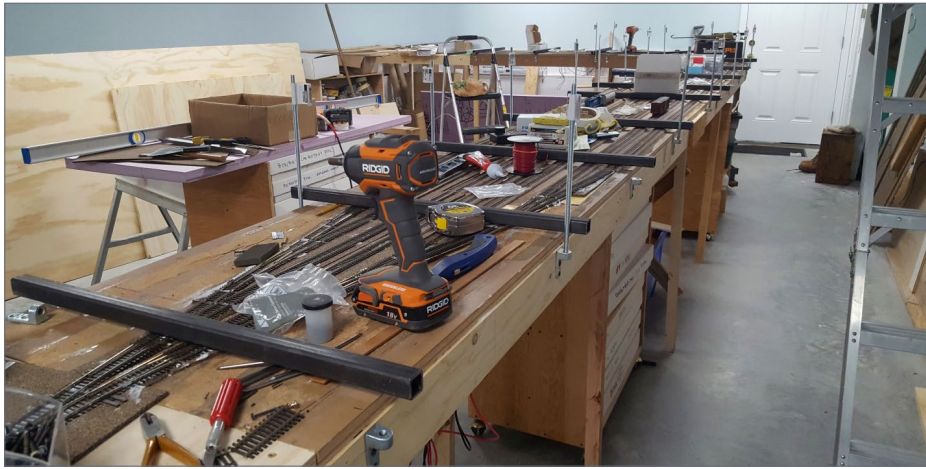
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27. Here's the "engineering drawing" I worked up to illustrate what I needed to do.



28. A forest of threaded rods sprang up, with the supports – plumbing pipe hangers from Lowes – in place.



29. After the laborious task of drilling 3/8" holes in each end of the square tube at precise locations (using a drill press) – and the even more tedious job of threading all of the nuts and washers on the rods in the right sequence, I was ready for some help to restore the yard to its proper location.



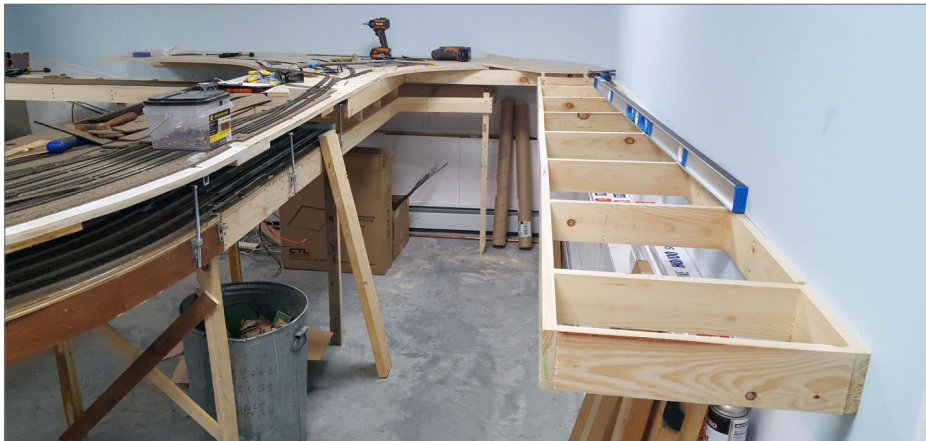
30. My buddy Mike Confalone came down from New Hampshire to help Dave and me move the yard. Fortunately, he got the "blue plaid memo ..."



31. Not a bad day's work. It took some time to level the entire yard but since it was infinitely adjustable, it was just a matter of working from a starting point to get it right in each axis.



32. Here's the opposite angle view, showing how the extra plywood lip for the additional main line was attached. Even now it's interesting for me to view the yard from this perspective, since this is the side that used to be up against a wall. Way off to the left rear is the former oil tank room, now Crestwood. The far end of Pittston Yard will bear right into the darkened large opening at Ransom. The future Pittston Jct. sits off to the right.



33. Here the plywood surface for Pittston Jct. has been installed, and the benchwork for the Pocono Northeast short-line hangs from the wall on the extreme right.



34. With Pittston Yard on the left edge of the photo and the Lehigh Line off to the extreme right, I used a tape measure and my central vac hose to get a feel for the dimensions of the peninsula that will be Taylor and the D&H.

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35. This view shows the four front tracks of Sayre staging going off under Pittston Jct. and then curving to the right towards the ladder. The four rear tracks are Binghamton staging and extend under the junction to the extreme left rear.



36. In this view, the spine of the D&H peninsula has been built, and the main line to staging for the D&H is being planned. Note the curved ladder at left. We've found that using Peco #7 curved turnouts works great for this kind of thing, because they're so reliable.



37. The support for Pittston Jct. included another square steel tube and threaded rod support, since there was a cantilever involved here. (Sayre staging is in front; Binghamton staging is to the rear.)



38. Here the final arrangement for Pittston Jct. has been established. The double track Lehigh Line (former LV Mountain Cutoff) sits to the front, and the Taylor Secondary is to the left (the connection to this track just behind the little blocky yard office is something that Conrail added). The Pocono Northeast (PNE) curves off to the center rear.



39. I wanted to see how some photos I'd taken from Pittston Jct. (with permission) would work in this location. I think the perspective seems to be just what I was hoping for. Now it's time for Mike Confalone to do some Photoshop magic for me!



Not a bad effort for four months, but there's much to be done before trains run again on my Lehigh Line.

The most challenging portion of the build is coming next. It includes a lot of things that I simply have yet to figure out.

I have no doubt though that my next Getting Real will talk about how it all eventually worked out. ✓



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email response)**

40. Right before deadline we managed to get the plywood origami in place for Dupont Jct. The D&H track forms the upper rear and you can see the graded cross-over from the Lehigh line to it. The grades have yet to be finalized and the slope of the connector will probably be about half of what you see here. I plan this to be an eventual Signature Scene on the railroad so I'm taking much care to get *this right*.



Easy freight wheel weathering

Running Extra | July 2019

BILL KENNEDY adds rust and grime the “quick and dirty” way ...

WE ALL KNOW THERE HAVE BEEN MANY ARTICLES ON weathering freight wheels. We’ve seen everything from a quick painting of “Rail Brown” to a dusting with Pan Pastels.

Although both techniques (and others) can do credible jobs, no article that I’ve ever seen addressed the grease build-up on weathered freight wheels that is associated with solid-bearing trucks. You won’t see this same build-up on roller-bearing trucks.

The goal then, becomes simulating the build-up of this gook on a rusty wheel. To be convincing, this effect needs to have *texture*.

EASY FREIGHT WHEEL WEATHERING | 2

1. Trucks using journal boxes packed with oily waste often got covered with grease and grime, but that’s seldom modeled. Bill shows you how to easily get this look on your wheels.

★★★★★
RATE THIS ARTICLE

Also, I wanted this to be fast and easy because I had already spent too much time weathering the trucks themselves!



J. Fugate

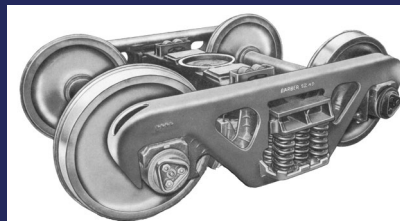
ROLLER BEARING TRUCKS

Don’t use Bill’s greasy buildup weathering technique on cars with roller-bearing trucks.

Wheels in roller-bearing trucks tend to just be rusty, without any grease or grime to speak of. The level and color of the rust can vary. But for the transition era and earlier, where plain bearings packed with grease-soaked cotton waste were common, the wheels had a lot of oily grunge thrown onto them that attracted lots of line-side dirt.

Roller-bearing trucks have been around since the early 20th century. They began to see common use in the 1930s on passenger cars, and later became adopted on freight equipment at the end of the 1950s and throughout the 1960s.

New cars built after about 1967 generally had roller-bearing trucks – and the railroads banned plain-bearing trucks from interchange service after 1991.



RUSTY WHEELS

I remembered reading an article where the author first sprayed the trucks with a rattle can of RustOleum's "Rusty Metal Primer" #7769 and then airbrushed a thinned layer of grimy black to get a fair representation of rust and grime.

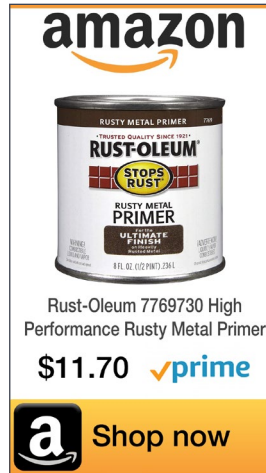
I like the shade of rust but since I wouldn't be spraying the wheel faces with a rattle can, I bought a can of brush-on paint. The smallest available size in a paint can is ½ pint (8 ounces).

WEB: RustOleum Rusty Metal Primer (8 oz. can) on Amazon: amzn.com/B000C013P4?tag=mrhmag-20.

You could use any color of rust you like for this technique, but if you don't use this RustOleum primer, I recommend at least using an oil-based paint. I don't recommend a latex, acrylic, or lacquer-based paint for this method. You'll soon see why.

NOTE: Use this product in a well-ventilated area.

I apply the paint to the wheel face with a #1 natural bristle brush, using just enough paint to cover the surface.

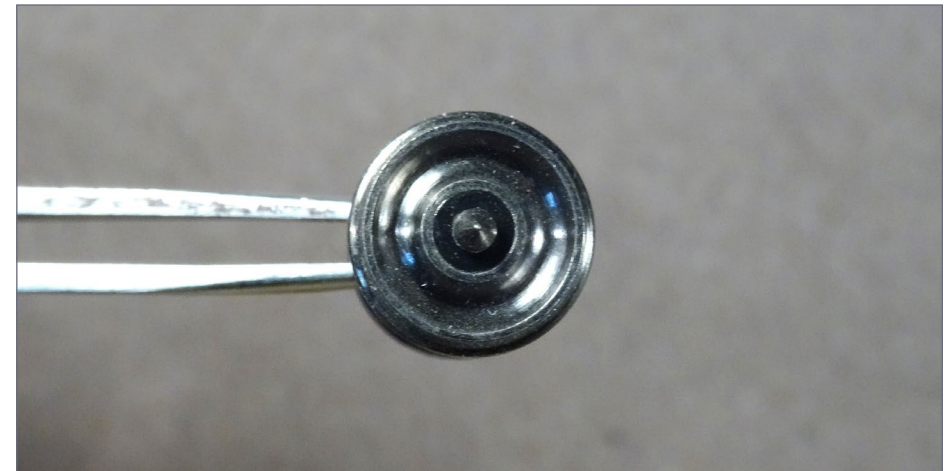


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2. All the tools and materials you'll need.



3. Unweathered wheelset.



4. Applying RustOleum Rusty Metal Primer.

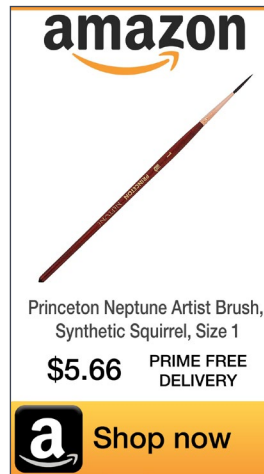
WEB: Size #1 natural hair paint brush on Amazon: [amzn.com/B005Z3SN4M?tag=mrhmag-20](https://www.amazon.com/B005Z3SN4M?tag=mrhmag-20).

With this, my wheels now have a good rust color. For roller-bearing wheels, this is often enough.

REALISTIC BUILT-UP GUNK

Simulating the greasy gunk texture turned out to be a tougher nut to crack.

On my first two attempts, I allowed the Rustoleum primer to dry. As the next step, I tried dry-brushing relatively thick straight craft paint with a color close to oily black. It didn't work. Even though I used dry brushing, it still looked like dried blobs of paint and it lacked the texture I wanted.



Next, I tried dabbing it with black PanPastel. This was better – the color was close and better than the craft paint. Yet, it didn't have the built-up texture I envisioned. So, what was close to the PanPastel but would show more texture?

I thought an actual weathering powder might work. The one I had on hand came from Micro-Mark's "Pastel Weathering Kit" as a stick. Maybe here's my gunk!

THE TECHNIQUE

I shaved some of the black powder off the stick. Next, using a regular size Microbrush – the one with the green handle (2.0mm tip size), I loaded up the brush with powder.

WEB: Microbrushes (4 sizes x 100 ea.) on Amazon:

[amzn.com/B071F8WSW8?tag=mrhmag-20](https://www.amazon.com/B071F8WSW8?tag=mrhmag-20).

I then held the brush about an inch above the upturned wheel set that had dried completely and then by tapping the brush handle, dropped the powder onto the wheel face and began to build it up. It worked!

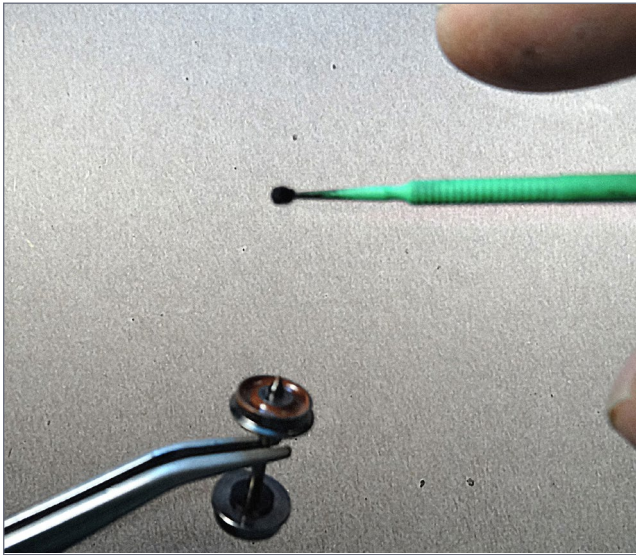
But how could I keep the powder on the wheel? Testors Dullcote, of course!

While still holding the wheelset, I sprayed the Dullcote on – and 90% of the powder blew off! Well that didn't work either.

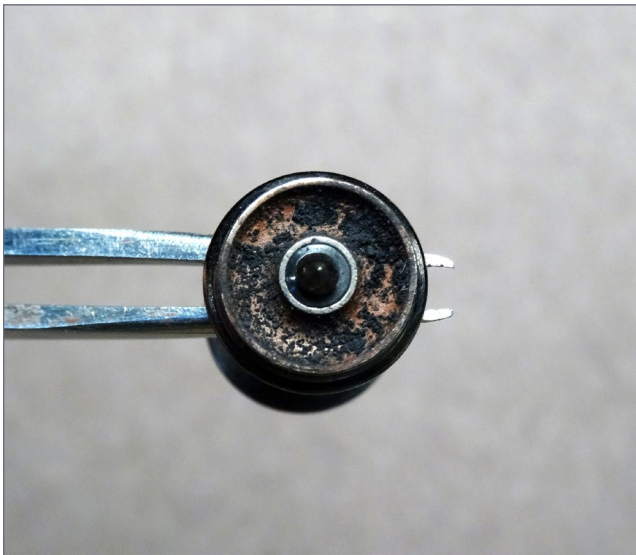
The answer was right in front of me and I finally saw it. All I had to do was let the powder drop on the primer *while it was still wet*. It works!

After the paint dries fully, I just tap the wheelset lightly on the workbench to knock off the excess.





5. Tapping on the black weathering powder.



6. All done – easy-peasy.

★★★★★
RATE THIS ARTICLE



J. Fugate

BLACK WEATHERING POWDER

One great alternative to getting black weathering powder is to use my Zip texturing weathering powders I discussed way back in the *November 2010 MRH*. For this you need some powdered tempera paint – you can get a lifetime supply online at the link below.



WEB: Black powder tempera on Amazon: amzn.com/B01HZMPI5W?tag=mrhmag-20

You can use the tempera powder straight, or if you want to lighten the color, you can mix it with plaster as I describe in my November 2010 MRH article [mrhmag.com/magazine/mrh-2010-NovDec/weathering-powders].

Dry tempera paint is available in other colors, such as brown, yellow, or blue (links below) and can be blended to make all manner of grunge dirt colors.

It also works great for making your own scenery dirt custom colors too!

WEB:

- Brown powder tempera on Amazon: amzn.com/B01HZMPLEK?tag=mrhmag-20
- Yellow powder tempera on Amazon: amzn.com/B01HZMPY7Y?tag=mrhmag-20
- Blue powder tempera on Amazon: amzn.com/B01HZMPJLK?tag=mrhmag-20

amazon



Colorations Powder Tempera,
Black - 1 lb.

\$10.30 prime

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WHAT I LEARNED

Since the total time to paint and powder one wheel is under one minute, the goal of a quick technique was met. Although I used Micro-Mark's, I think any brand of powdered pastel will work as long it is just plain black.

PanPastels could work but they tend to cling to the brush more than the dry pastel powder.

Also, for painting the basic rust color, any brand of slow-drying flat paint will work. Varying the color of the paint a bit would be a good idea.

I do find that sometimes a little clean-up is necessary on the axle points. Using a clean Microbrush dipped in paint thinner, I clean both the paint and powder nicely.

I also need a technique for weathering wheels in roller-bearing trucks to give them a little more variety, but that's another article! ☒

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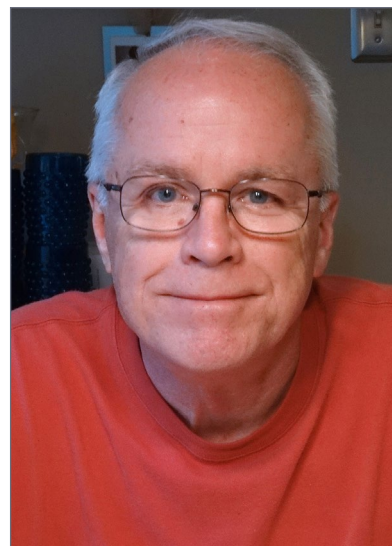
Chance to win \$125 worth
of these cool products!

click here (takes ~5 min)



Seems like almost everyone wants a chance!

BILL KENNEDY



Bill is a retired wholesale hardware salesman who lives with his wife, June, in Shamong, NJ. Because of the time demands of family and work, Bill only had time to build cars and structures before retirement. The layout is now designed, and construction will begin soon. It's a freelance design using the Western Pacific as the prototype and set in the steam/diesel transition era.

Besides trains, Bill also spends his time with family, two grandsons, his pool, yard and a 1967 GTO. Bill is also active in his local NMRA division. ■

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Making model bushes Using rope

Running Extra | July 2019

NICHOLAS KALIS demonstrates simple scenic techniques ...

I NEEDED TO MAKE BUSHES FOR MY LAYOUT, SO I turned to YouTube and found several tutorials that apply to any scale. I followed the techniques in this video youtu.be/e3zj-pADOGgw to make great bushes for my Fn3 (1:20.3) Oahu Sugar Company.

MAKING BUSHES WITH ROPE | 2

1. Creating airy-looking bushes is a challenge in any scale. Here's one of Nick's creations on his Fn3 layout.

★★★★★
RATE THIS ARTICLE

MATERIALS



2. I found manila rope at Home Depot. Depending on your layout size, this roll might be all you need. I used sisal rope for first efforts, but I thought a natural-color manila would work better if every part of rope isn't covered with paint or leaf material.



3. These are the paint and glue I used. Elmer's Glue-All keeps the rope from unraveling and stiff enough to plant the final bush in the scenery. A heavier-duty glue might be preferable. The paint and matte clear are used to adhere the leaf material.

MAKING BUSHES WITH ROPE | 3

FORMING THE BUSH



4. Cut the rope to length. The length you choose depends on your scale and what effect you want. A manicured bush needs a shorter length than one growing wild. Leave quite a bit of rope intact so the modeled bush does not fall apart, to plant it in the scenery. I cut my rope with a Friskars pruning shear. If your rope is curled, straighten it at this step.



5. I glued one end of my rope so that it would not unravel. Be patient and allow the ropes to dry overnight. Hot glue would speed this step.

MAKING BUSHES WITH ROPE | 4



6. Unravel the end of the rope that wasn't glued. This can be messy. Work over a trash receptacle or outside to let the wind blow the debris away.

PAINT AND LEAVES



7. Spray gray paint onto the plant structure and immediately sprinkle flock onto it. I used flock that was very short. I recommend using the longer needles seen in the video, but I had only shorter lengths on hand. Allow the work to dry overnight so the flock will adhere to the paint. Any flat or primer gray spray paint should work. I used black paint on my first try, but was disappointed with the results.

MAKING BUSHES WITH ROPE | 5



8. Use a plastic tub to hold the leaf material. Fine ground foam is an option, but it is common on many layouts. Try something different and more realistic.



9. A second coat of material gives depth to the bushes. Spray clear coat onto the bush and sprinkle leaf material over the tub. You can dip the bush into the tub to add material, too. When the bushes are dry, you will find some branches have clumped. De-tangle and spread the branches over the tub to catch leaf material that drops. If too many leaves drop or did not stick, apply another clear coat and repeat the process.

I used Scenic Express SuperLEAF (SE6222) material,

and was careful to apply the leaves evenly. I also used medium ground foam but did not like the results. I recommend using fine ground foam, and experiment. If you are satisfied, then experiment with other Superleaf and ground foam colors. I think we can achieve better results by using more than one color of leaf material. Keep the colors similar so the results are subtle, avoiding any garish and unnatural results.

MAKING BUSHES WITH ROPE | 6



10. Bushes have a variety of color and textures. Careful work can result in effective scenes. Take photos of various bushes to use as inspiration.

FINAL PLANTING

Let everything dry overnight. Go back and trim the bush base, then plant it on your layout. You can also use scissors to trim the bush to your liking – just be sure not to give it a manicured look. The bush should look wild, unless you are intending it for a manicured model yard.

I drilled a hole in my layout surface and used a bit of glue to hold the bush in place. I spread newspaper under the layout to catch any glue drips.

MAKING BUSHES WITH ROPE | 7

While I model in Fn3, this technique can be applied to any scale. Modeling in a smaller scale will require experimenting with different rope thicknesses. Unraveling a larger rope into strands offers different sizes of material for scale bushes.

Be patient when using these techniques. Things can go wrong when too much adhesive or paint is applied, and your bush looks



11. Here are some completed bushes installed on my layout. When installing these bushes, leaves might fall off. If too many leaves fall, wrap a sheet of copy paper around the bush, spray clear coat, and sprinkle on more leaf material.

MAKING BUSHES WITH ROPE | 8

like an ugly matted dog. If a result is disappointing, just toss it away and start again. Your results will be worth the disappointment of throwing away a few. I had beginner's luck and created a superb first bush. Others that followed were not as good. Have fun with this technique. I've enjoyed creating many bushes for my layout. ☒



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I used scissors to trim the bush after it was installed. A few bare "branches" reflect nature, so don't fret about that look. If you just can't stand to see a bare branch, snip it with your scissors.

MATERIALS

- Rope (scrounge some from a friend if you don't have any)
- Flat gray primer - Rustoleum or Krylon
- Matte clear - Rustoleum or Krylon
- Scenic Express SuperLeaf SE6222 Eucalyptus 15oz shaker
- Woodland Scenics Flock
- Elmer's White Glue
- Hair spray (any brand)



12. Here are two colors of SuperLeaf scale leaves. Note that Scenic Express sells this product in two different containers – the Eco-Pack for more value and the shaker bottle for ease of use. The Scenic Express warehouse is open to the public www.sceneryexpress.com.

NICHOLAS KALIS



Nick's LIRR Lower Montauk Branch was a front cover feature of the September 2007 *Railroad Model Craftsman*. His love of railroading started about 1958 when he appeared in New York's Daily News as a model in a photograph of the last trolley to operate in Manhattan. A Lionel set was under the Christmas Tree when he was nine years old.

Nick has written several articles for the Pennsylvania Railroad Technical and Historical Society's Keystone. His current project is the Fn3 Oahu Sugar Company set in Waipahu. It was a cover feature of the July 2018 *Narrow Gauge Downunder*.

Nick is a father of three and stepdad to one. He resides in Virginia. ■

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Building a Riverside Oil Co insulated tank car

Running Extra | July 2019

ALAIN KAP, MMR, applies two methods to build an early tank car ...

A PROTOTYPE PHOTO OF THIS INSULATED TANK car sparked my interest. The Riverside Oil Company was originally along the Ohio River in West Virginia. The 1891 oil boom hit this part of West Virginia and nearly 15,000 people rushed into the Sistersville area to find their fortunes.

INSULATED TANK CAR | 2

1. Alain's model was inspired by an old prototype photo and an Ambroid kit.

★★★★★
RATE THIS ARTICLE

A CLASSIC MODEL

During my research, I found Ambroid had released a craftsman kit of this tank car. I was fortunate to acquire a near-mint kit. The decal sheet showed the build date, October 1914, and the builder was American Car & Foundry.

The kit parts reflect the prototype car details. This was a tank car covered with a corrugated metal shroud that acted to protect an insulation layer. I consulted the 1915 and 1919 *Official Railway*



2. The Ambroid tank car kit components were in great condition but sparse. I used the parts to scratchbuild a new model.

Equipment Registers (ORER) respectively to confirm the ROTX reporting marks and car number 118. The Riverside Oil Company was headquartered in Pittsburgh, Pennsylvania, with 37 tank cars rostered as numbers 101 to 137. The 1919 *ORER* listing noted 10 more tank cars had been added, extending the series to 147.

An index of AC&F car orders can be found in the John W. Barriger III National Railroad Library, part of the St. Louis Mercantile Library at the University of Missouri St. Louis. The AC&F orders are listed by lot numbers revealing ROTX cars. Lot number 7210 from 1913 lists 10 steel-underframe tank cars. Car 118 must have been one car of this lot but there were no specific details about an insulated car. (See the sidebar for additional fleet details. – ed.)

I reviewed the kit parts and hoped a piece of scale lumber ear-marked as the frame would match a styrene tank car frame. I wanted more detail for the model, and a few pieces of wood were not to my satisfaction. It seems the model frame was identical



3. I found only this reference picture, but it shows most of the components I needed to build and detail the model.

TANK CAR TARIFF BOOKS

by David Parker

Tank car tariff books were published periodically and are an additional resource. These contain more individual tank car fleet details than the *ORERs*. The 1919 version is available from Google books: books.google.com/books?id=4y0wAAAAYAAJ.

RIVERSIDE EASTERN OIL COMPANY.											
Cars marked: R. O. T. X.						Used for transporting Gasoline.					
						Address: Pittsburg, Pa.					
CAR No.	FULL CAPACITY		CAR No.	FULL CAPACITY		CAR No.	FULL CAPACITY		CAR No.	FULL CAPACITY	
	of Shell	of Dome		of Shell	of Dome		of Shell	of Dome		of Shell	of Dome
	Gallons	Gallons (See Special Note, page 3)		Gallons	Gallons (See Special Note, page 3)		Gallons	Gallons (See Special Note, page 3)		Gallons	Gallons (See Special Note, page 3)
*101	8109	163	*112	8167	163	123			*137	8046	142
*102	8113	163	*113	8086	169	to	Cancel	⊙	*138	8220	142
*103	8265	163	*114	8089	169	127			*139	8220	163
*104	8129	163	*115	8090	169	*128	8047	142	*140	8217	163
*105	8120	163	*116	8086	169	*129	8047	142	*141	8222	163
*106	8109	163	*117	8090	169	*130	8045	142	*142	8217	163
*107	8123	163	*118	8092	169	*131	8050	142	*143	8216	163
108	8165	163	*119	8093	169	*132	8045	142	*144	8220	163
109	8174	163	*120	8095	169	*133	8046	142	*145	8220	163
*110	8206	163	*121	8089	169	*134	8045	142	*146	8221	163
*111	8206	163	*122	8092	169	*135	8046	142	*147	8218	163
						*136	8046	142			

The 1919 Riverside Oil Company tank car tariff entry.

These data strongly suggest that car 118 was part of the 113-122 car series. Whether they all bore the shroud is less certain. It is also unclear which cars correspond to the ACF order, but 113-122 is a good guess. The asterisks signify “officially gauged” which I take to mean that the tank and dome volumes were somehow certified.

In 1919, insulated tank cars had an MCB/ARA designation of TMI and were quite rare. The 1919 tariff does not have

TANK CAR TARIFF BOOKS *CONTINUED* ...

footnotes to indicate such cars. TMI cars were much more common later, and the 1936 tariff shows quite a few cars.

Ian Cranstone's tabulation of reporting marks suggests that ROTX became part of Pennsylvania-Conley, which in turn merged into GATC sometime in the 1930s. Ian has three tank car tariff reprints available.

June 1936 - www.lulu.com/shop/ian-cranstone/tank-car-capacities-1936/hardcover/product-22351796.html

September 1955 - www.lulu.com/shop/ian-cranstone/tank-car-capacities-1955/hardcover/product-22351502.html

November 1970 - www.lulu.com/shop/ian-cranstone/tank-car-capacities-1970/hardcover/product-23299194.html

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MORE LIKELY TO STICK AROUND FOR A LONG
TIME TO COME!

in size to the standard AC&F Type 21 frame used on the Proto 2000 tank cars. The prototype may have had an earlier Type 11 underframe, as it was built in 1914. I was unable to confirm this speculation. I didn't have an extra Proto 2000 tank car frame for this project, so I used the Tichy tank car kit.

THE TICHY TANK CAR UNDERFRAME

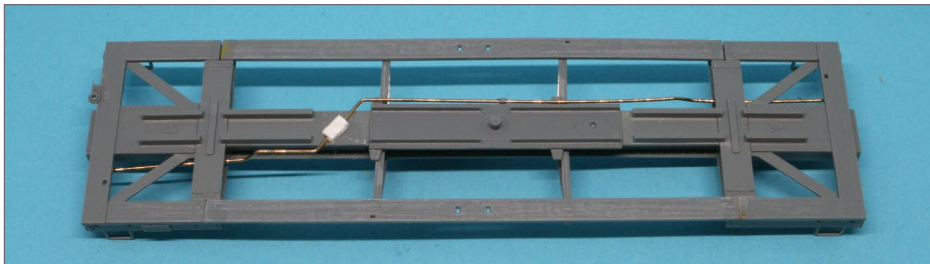


4. I gathered the Tichy Train Group tank car underframe (part #3011), detail set (#3007), and arch bar trucks (#3002) to start the project.

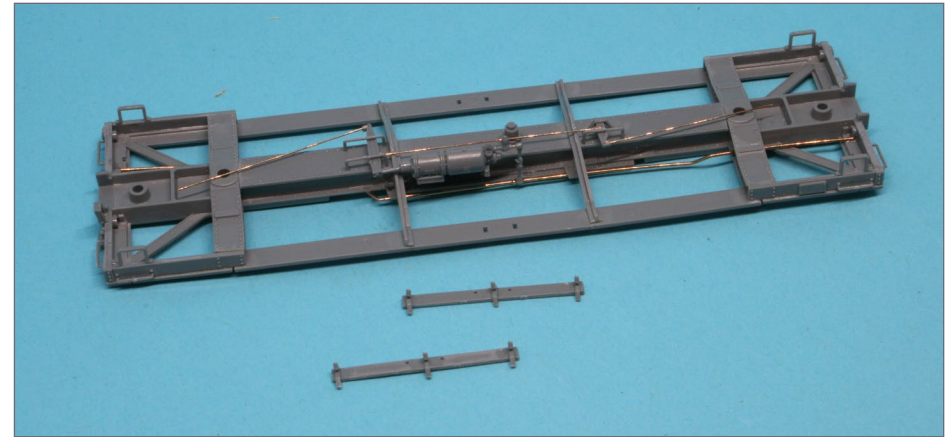




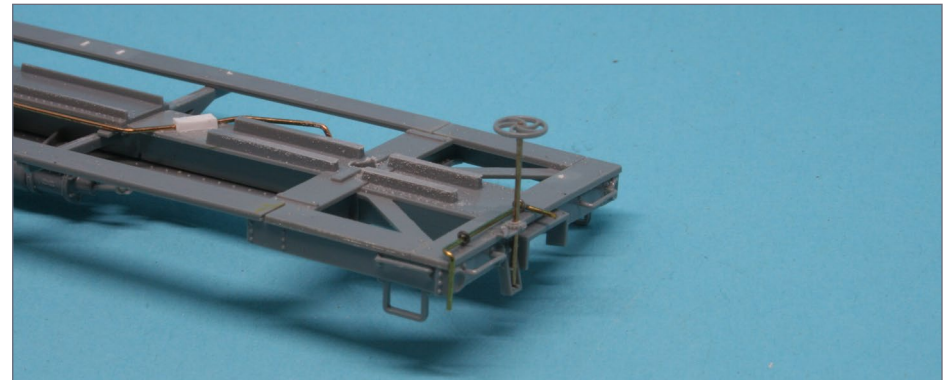
5. The Tichy tank car underframe is two feet, six inches too long. I made two cuts in the center sill, left and right of the running board supports, to keep those centered. A scale one foot, three inches was removed from both ends of the sill plate and running boards. 4x8 and 1x4 styrene strip was glued in the center sill to strengthen the joints and keep the frame straight.



6. I glued the sill and center plates in place, then the running boards. I followed the kit directions for the rest of the frame. I shortened the train line wire, and installed it following the template in the directions with a piece of styrene channel glued on top to secure the train line wire. I used bits of styrene rod to plug holes in the running boards. There were no ladders or hazmat placards on the 1914 prototype.



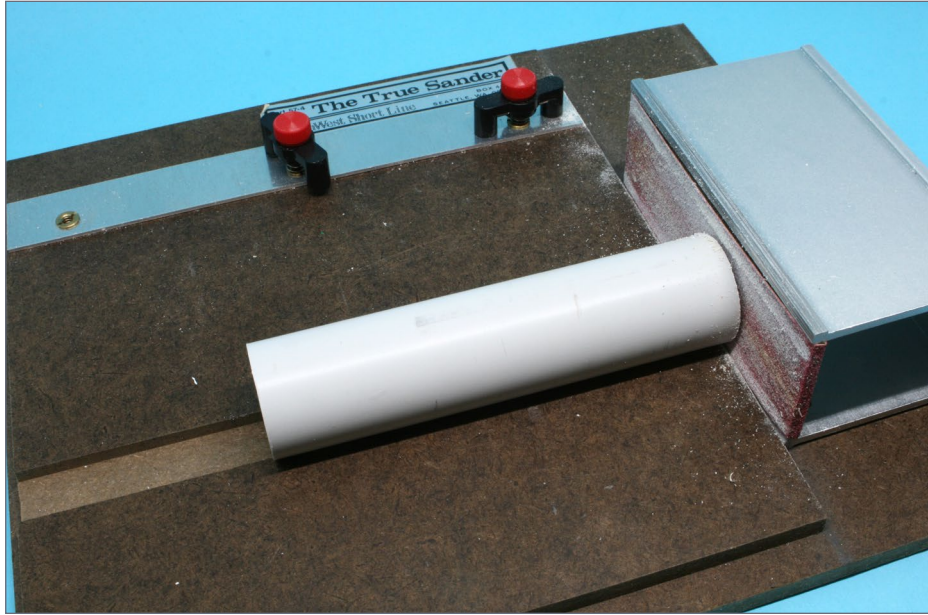
7. I adapted the brake rigging to the new frame length. These minor modifications wrapped up quickly.



8. I bent uncoupling levers using 0.015" brass wire and attached them to the frame with eyebolts.

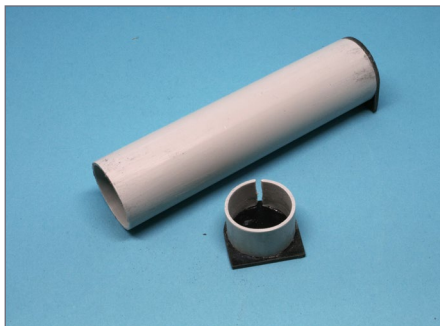


THE TANK

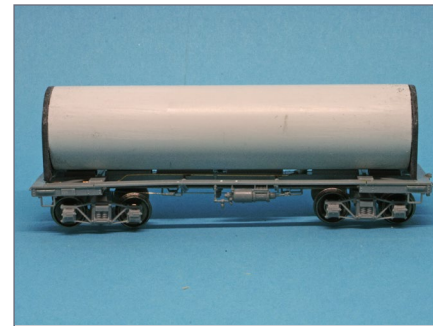


9. I used a piece of one-inch-diameter PVC pipe for the tank. I cut it a bit short, as the corrugated siding material covers each end. I used a NWSL True Sander to square both ends of the PVC pipe.

10. I laminated scrap pieces of 0.060" styrene sheet and corrugated siding for the end caps. I wanted to make the tank ends removable and formed a ring of PVC pipe to nest inside the tank. I removed a quarter-inch slice from the pipe to narrow the diameter to fit inside the tank. Once it fit, I glued the ring to the back of the laminated ends.



11. I needed to add weight to the car and found a bolt and two tee-nuts fit snugly inside the tank. I've had some car weights loosen and rattle inside finished models. The bolt and tee-nuts were a great fit inside the PVC tank.

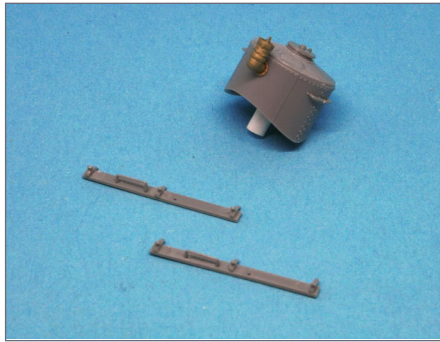


12. With the end caps in place, I removed excess material and sanded the edges smooth. A test fit on the frame looked good. Next, I determined a location for the dome. I measured for the center line and drilled a small pilot hole to locate the dome.

DOME DETAILS

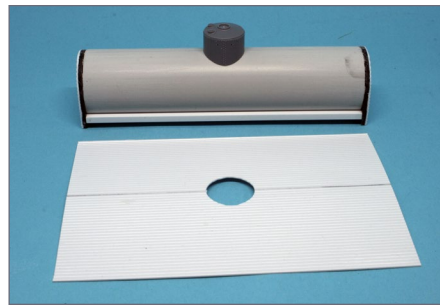


13. I back-dated the dome by removing the cast-on safety valves and replacing them with an angled valve. Early 20th century tank cars had elbow-style safety valves extending from the side of the dome. I installed an Owl Mountain Models brass safety valve for this eye-catching detail. I also replaced the plastic grab irons on the dome with wire grabs. The plastic grabs break easily.



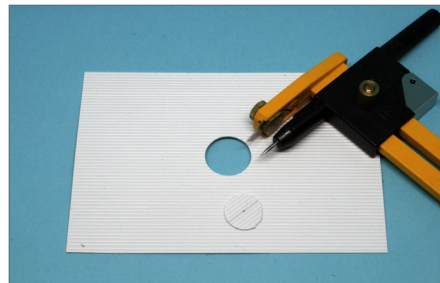
14. The Tichy dome in the tank car detail set has a mounting peg to ease installation, but it was too short for this use. I lengthened the peg with styrene tubing slipped over the peg, then enlarged the pilot hole in the tank. Access platforms were also modified with offset grab irons.

INSTALLING THE CORRUGATED MATERIAL



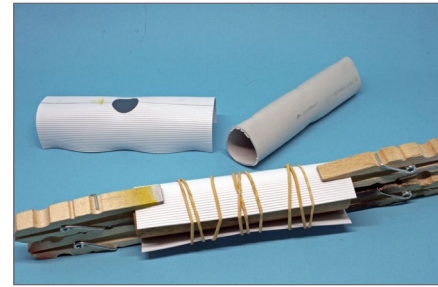
15. I installed two 10 x 10 styrene strips between end caps and along the lower edge to use as an attachment point for the corrugated siding material. I placed the bare tank assembly on the underframe, and sanded edges for a tight fit on the frame. I drilled a

hole through each bolster and cut a thread into the tank with a 2-56 screw. The tank can now be securely mounted to the frame, plus the screws can be used to hold the underframe and tank while painting them separately.



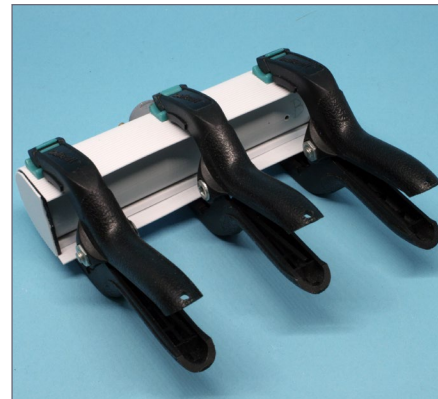
16. I cut a piece of corrugated siding using the dimensions of the tank but subtracting the thickness of the corrugated siding on both ends. I drilled a pilot hole in the center of the siding and used an Olfa compass with a cutting blade to cut a circular opening for the dome. The

dome needs a tight fit. I sanded the final shape with curved file.



the water was too hot. I ended up distorting the siding and PVC pipe.

I used the wood core from the original Ambroid kit in my second attempt. This time I did not heat the water to boiling, and I dipped the styrene in the water for only a couple of seconds. The process warmed the siding enough to shape around the core without distorting the corrugations.

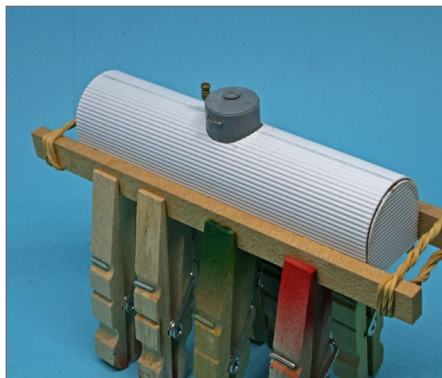


17. My first attempt to bend the corrugated siding around the tank was unsuccessful. The siding material does not flex easily around a one-inch core. I used a warm water bath to ease bending the material, but

18. I applied a coat of CA to the tank assembly, centered the siding over the dome area, and inserted the dome into its locating hole. I used clamps to hold the siding around the tank, then checked for a square fit.



INSULATED TANK CAR | 13



19. After the CA dried, I used plastic glue to secure the siding to the supporting strips along the length of the tank. I used a combination of wood sticks and clothespins to hold everything until the glue set. The two wood sticks keep even pressure along the length of the tank. After the glue dried, I removed surplus material and sanded the sides to fit the underframe.



20. I used 0.030" x 0.040" strip styrene to fill the small gap between the side material and the ends, and to simulate the trim along the edges.

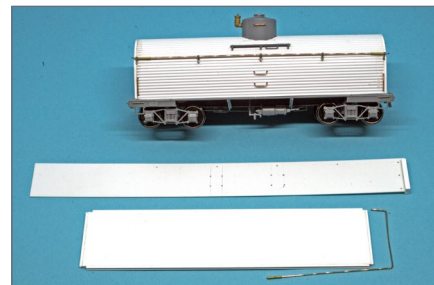
HANDRAIL AND GRAB IRON DETAILS



21. I discovered the Albion Alloys line of fine brass tubing (www.albionhobbies.com/albion-alloys-precision-metals). They manufacture telescoping tubing in a variety of increments, and in brass, nickel silver, and aluminum. When choosing tubes for

a slide fit, remember this rule – Odd into odd and even into even e.g., MBT03 slides into MBT05 / MBT04 slides into MBT06. The fine tubing will be used to join the handrail sections.

INSULATED TANK CAR | 14



22. Using a photograph and the Ambroid kit instructions for reference, I made a drilling jig for the handrail and the grab iron installations from a piece of plain styrene. Drilling holes for the handrail stanchions is much easier using

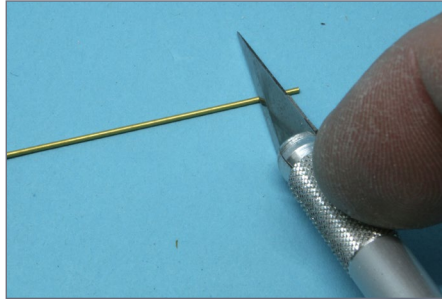
the jig. I used the styrene stanchions supplied in the kit. Precision Scale #32110 brass stanchions are an alternative.

Using my jig, I bent two pieces of 0.020" brass wire into U-shapes for the end handrails, leaving enough wire to thread through the stanchions on either side of the tank ends. I connected the end handrails and side handrails with a short length of brass tube.



23. The tiny brass tube barely slips over the wire ends and is hardly visible. I found this idea posted on Tony Thompson's blog. He used a piece of hypodermic tubing for a sleeve to join two wire ends. I tried using this, but it was difficult to cut and was too thick compared to the 0.020" wire.





24. I needed only short lengths of brass tube for the sleeves. I used a fresh #11 X-Acto blade to cut the tube. The walls are very thin. I rolled the tube under the blade a few times using moderate pressure, and snapped it apart. There is a video demo available on the

Albion Alloys homepage. This method is better than using flush-cutting pliers, or a cutoff disk in a motor tool.



25. I inserted the straight wire into the stanchions and slid the tubing sleeves onto each end. Then I aligned the end handrail wires and moved the sleeve over the joint. A drop of CA secured the sleeves. The brass tubing has such thin walls that

the joint is barely visible. I installed 24" straight handrails at each corner of the tank and 18" drop-style grab irons centered on both sides of the tank for the ladder steps.



26. I previously modified the dome platforms to reflect the prototype by adding a third support bracket in the center [14]. I also moved the grab iron from its center position to the right side using one of the original holes and the grab iron

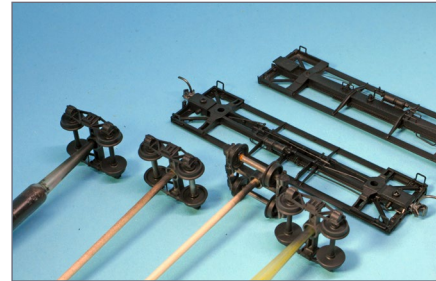
as a guide for the second hole.

PAINTING AND LETTERING



27. The model is ready for the paint shop. I unscrewed the tank from the frame and cleaned the sub-assemblies in warm water with a drop of dishwashing detergent. I primed the tank with a coat of Vallejo gray primer. I like using

Vallejo paints on my models. The Model Air colors are ready to use without thinning.

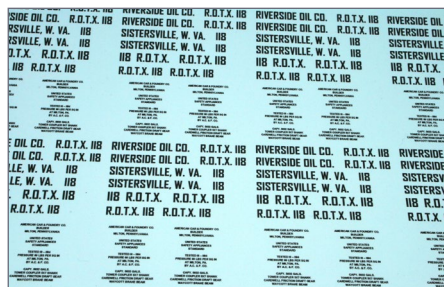


28. I painted the trucks and underframes Vallejo black.

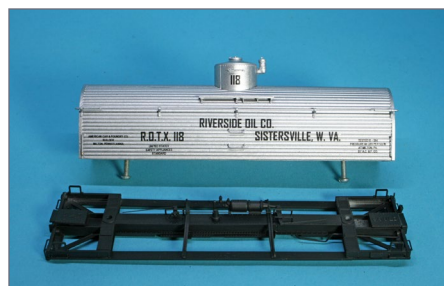


29. After the primer dried overnight, I painted the tank aluminum and set the assemblies aside to dry.

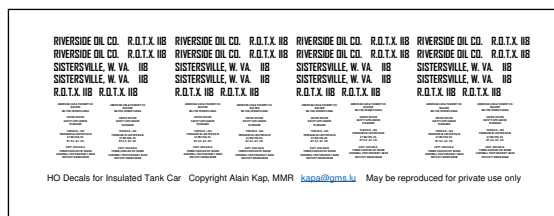




30. I created a new set of decals using the original Ambroid decal set as a reference, and printed them on my printer. I sealed the decals with a coat of varnish from a rattle can.



31. I cut the decals close to the lettering. This makes the decal film almost invisible. I let the decals dry overnight and sealed the car with matte varnish.



You can get the full-sized artwork for these decals in the July bonus extras here:

[GET JULY BONUS EXTRAS](#)



PARTS LIST

Albion Alloys	MBT07	0.7mm O.D. slide fit brass tubing
	MBT08	0.8mm O.D. slide fit brass tubing
Details Associates	2505	0.015" Brass wire
Evergreen	8104	1 x 4 Strip
	8408	4 x 8 Strip
	175	10 x 10 Strip
	132	0.030 x 0.040 Strip
	224	Tube 1/8"
Kadee	5	Couplers
Miscellaneous		PVC Pipe OD 1"
Owl Mountain Models	1001	Single L-type Safety Valve
Plastruct	91510	Corrugated Siding (N-scale)
Tichy Train Group	4020	Tank Car Kit Small Dome - or
	4025	Tank Car Kit Large Dome - or
	3007	Tank Car Details Set - and
	3011	Tank Car Underframe
	3002	Arch Bar Trucks
	3015	Grab Irons straight (24")
	3053	Grab Irons drop style (18")
	1103	0.020" Phosphor bronze wire
Vallejo Model Air	71097	Gray Primer
	71057	Black
	71062	Aluminum
	28531	Acrylic Matt Varnish (Rattle Can)

ANOTHER APPROACH USING A PROTO 2000 TANK CAR

I had one of the former Life Like Proto 2000 tank cars awaiting repair. Grab irons and handrails were broken due to careless handling. After I unscrewed the trucks and removed the tank from the frame, I thought this model may make an easier conversion. It quickly proved more difficult.



32. I removed the trucks and carefully pried the tank loose with a flat screwdriver between the frame and the bolster.

CREATING THE TANK SHROUD SUPPORT

33. The end caps are cast to the upper half of the tank and cannot be removed, so I was unable to use the same approach as the previous build. I had to figure out how to mount the corrugated ends to the curved tank ends. I cut

small bits of 6 x 6 styrene strip and glued them in a circle on the backside of the corrugated ends.



34. Using this method, I was able to adjust the ends to sit square on the curved end caps. I felt sanding the ends flat was too tedious a task. I also sanded the tank smooth for the corrugated siding installation.



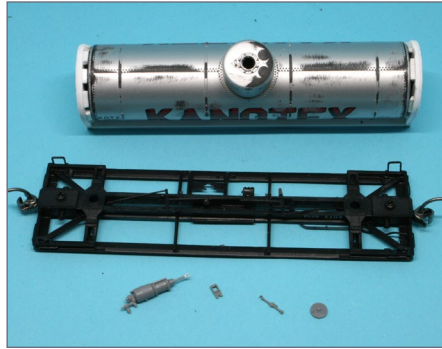
35. I applied glue and pressed the ends into place. I used rubber bands to hold the ends in place, then adjusted the ends with a metal square before the glue set.



36. I installed a pair of 10 x 10 styrene strips between the end caps to serve as support for the corrugated shroud, like the previous model build. I cut them oversize and used a NWSL True Sander to sand them to final length, then glued them on either side of the tank.

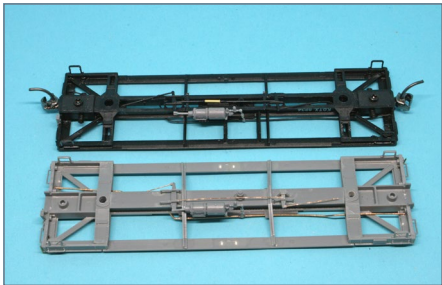


BACKDATING THE BRAKE SYSTEM



37. The Proto 2000 tank car has an AB brake system that needs to be backdated. I removed the AB brake components and installed a KC brake cylinder. It fit on the brackets easily and the clevis matched the brake lever. I glued the branch line to the dirt collector on the cylinder and snapped the "T" over the train line. I removed the mod-

ern manhole cover from the dome and glued the pre-1930 cover from the Tichy detail set in place. I also added a brake staff support to the end beam, which was missing.



38. The two frames side-by-side look similar, although the Tichy frame is of USRA design. I did not intend to produce a rivet-counter model, but a believable representation of the prototype.

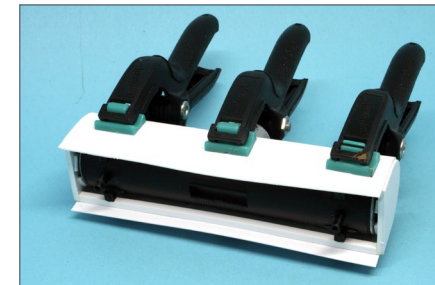
The backdated brake components stand out as the gray parts on the black Proto2000 underframe. I broke one of the plastic brake rods and used a bit of brass tubing for the replacement. As on the handrails, I slipped the tube over the broken ends and fixed it with a drop of CA.



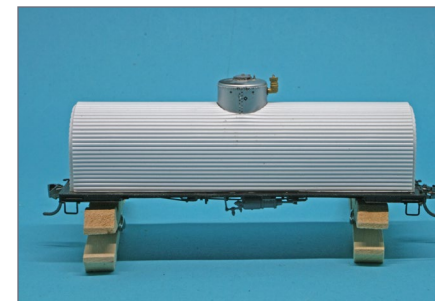
INSTALLING THE CORRUGATED TANK SHROUD



39. I mounted the tank on the frame to check the side support location.



40. I learned my lesson bending the corrugated shroud for the first model. Again, I clamped the sheet around a one-inch-diameter wood dowel and dipped it into warm water. The material kept the bend and fit easily on the tank. I coated the tank with CA and adjusted the corrugated sheet to fit. Three large clamps held the 0.020" corrugated styrene until the glue cured. Once this was set, I glued the lower edges of the corrugated sheet to the 10 x 10 styrene strips.



41. I trimmed the excess siding from the lower edge. The corrugated siding should be a scale three inches shorter for the trim on each end. If adjusted correctly, it should look like this photo.

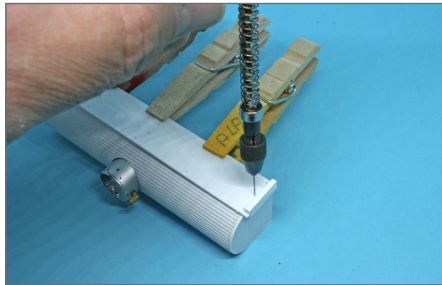


42. I glued a strip of 0.030" x 0.040" styrene along the edges on the ends to simulate the trim between the side and ends of the corrugated shroud.

DOME, GRAB IRON, AND HANDRAIL DETAILS



43. I sanded the original vents off the dome and drilled a #55 hole in one side of the dome to insert an Owl Mountain Models (www.owlmtmodels.com) safety vent casting. I secured it with a drop of CA.

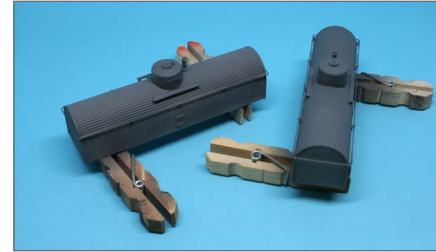


44. I used a drilling jig like the one in the earlier model build [22]. I clamped the jig to one side of the car and drilled holes for stanchions and grab irons, then drilled the same on the other side of the car. I installed the grab irons and

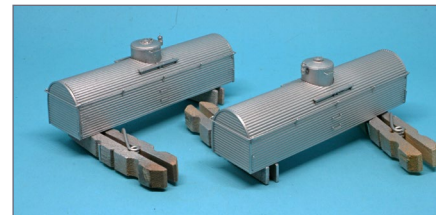
handrails using the same techniques as the previous tank car [23, 24, 25].



PAINTING AND LETTERING



45. I sprayed the tanks with a coat of Vallejo gray primer.



46. I applied several thin coats of Vallejo Aluminum and let them dry over a weekend.



47. Applying decals is a tedious activity. I lettered one side at a time, waiting several hours until the decals dried completely. The decal film is very thin, and I messed up some lettering because I kept adjusting them. Fortunately, I had spare sets.



48. After the decals dried, I applied a coat of Vallejo matte varnish. In the meantime, I airbrushed the frame with Vallejo black.

FINAL ASSEMBLY



49. I carefully placed the tank onto the pegs and bolsters, then screwed the trucks into place. Here's a look at the end lettering on the brake end.

MRH product awareness survey

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click here (takes ~5 min)



Seems like almost everyone wants a chance!



50. The project leaves me with two "impossible" twins. I reached my goal with two different approaches for the same result. It's up to you to choose your method to build this unique early tank car.

★★★★★
RATE THIS ARTICLE

PARTS LIST

Albion Alloys	MBT07	0.7mm O.D. slide fit brass tubing
	MBT08	0.8mm O.D. slide fit brass tubing
Evergreen	175	10x10 Strip
	132	0.030 x 0.040 Strip
Kadee	5	Couplers
Walthers Proto		8000 gallon AC&F Type 21 Tank Car kit or RTR
Owl Mountain Models	1001	Single L-type Safety Valve
Plastruct	91510	Corrugated Siding (N-scale)
Tichy Train Group	3007	Tank Car Details Set – (Brake cylinder and ratchet
	3002	Arch Bar Trucks
	3015	Grab Irons straight (24")
	3053	Grab Irons drop style (18")
	1103	0.020" Phosphor bronze wire
Vallejo Model Air	71097	Gray Primer
	71057	Black
	71062	Aluminum
	28531	Acrylic Matt Varnish (Rattle can) ☒

ALAIN KAP



Alain is a Luxembourger living in Saarburg, Germany with his wife and teenage son. He also has two grown daughters from a previous marriage. After working many years in the freight-forwarding business, he returned to his basics as an accountant at a major paint manufacturer in Luxembourg.

At age 5, he received his first Märklin train set as a birthday gift. The layout was set up on a board and expanded several times. In his

teens, model trains took a back seat until his interest was sparked after visiting a local train show in 1989.

The Luxembourg Railways (CFL) was his initial interest, but he wanted to relive his impressions from a U.S. vacation trip. He joined the NMRA in 1993, and has modeled American prototypes exclusively. In addition to building numerous show layouts and modules, he built a layout in his basement depicting the famous Santa Fe Surf Line from Los Angeles to San Diego. The layout is operational, but far from finished.

In 1998, he started the Achievement Program of the NMRA, and became MMR #526 in 2014. He is currently working on his 11th certificate (Prototype). He is also President and Achievement Program Manager of the NMRA European Region. ■





The City of Prineville Railway

Running Extra | July 2019

GREG BAKER designs a layout to fit into a single-car garage ...

NOT MANY TOWNS OWN RAILROADS, BUT THE CITY OF Prineville in eastern Oregon lays claim to the oldest municipal railroad in the United States.

The 19-mile railroad line extends from Prineville to Prineville Junction, connecting to the Oregon Trunk (formerly part of the Spokane, Portland & Seattle, then Burlington Northern, and now part of BNSF) north of Redmond, Oregon. This quirky railroad with an interesting stable of power and equipment is an ideal candidate for a small- to medium-sized layout. Welcome to the City of Prineville Railway (CofP).

1. The 102 and 103 lead a train to Prineville Junction in 1970. Once the train arrives, the outbound cars will be placed for pick-up and inbound cars will be taken to Prineville for spotting. *Keith Ardinger photo, collection of Greg Baker*

★★★★★
RATE THIS ARTICLE

I decided to design a HO scale layout for a 14' x 24' single-car garage space as I felt it would provide a good balance of switching and mainline running for a few operators. The smaller space would allow me to get the railroad completed in a shorter time, and the semi-desert scenery of Eastern Oregon would be a challenge.

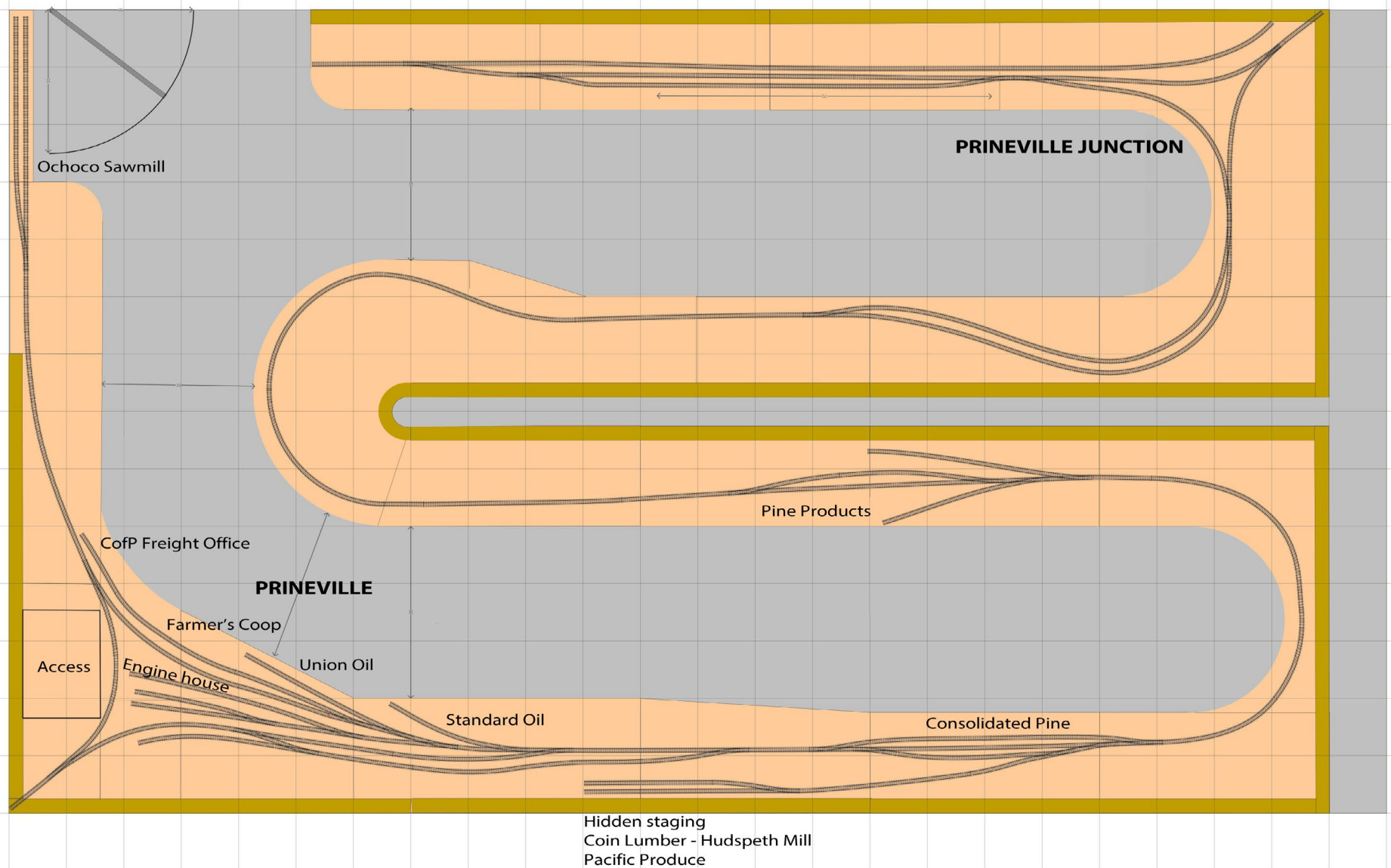
With it only taking up a single-car garage, it would also allow room for a workbench and storage.

In regard to era, I would keep modeling the fall of 1968, which has been the year of focus for my other modeling projects. The track plan as designed could be used for any time from 1938 until the early 2000s, when changes were made to the line due to changes in the economy.

I also like the year 1968 because the CofP was still painting its equipment in the chromium yellow scheme. The Alcos lasted well into the 1980s, but the railroad then took on a more Milwaukee Road image featuring orange and black. Also in 1968, the railroad went to running two crews. That makes it more interesting for operators, while it still could be operated by a single individual doing each job in turn.

IMPROVING THE LAYOUT SPACE

My first step would be to make the garage a usable space. I would buy a garage door insulation kit, like the one available from Owens



2. Greg's track plan for the City of Prineville layout. Each square is one foot.

Corning. It has panels that are placed on the back side of the garage door to help keep the area a bit more climate-controlled.

I would also consider investing in a ductless heating and cooling system to better regulate the garage temperature [4].

At a minimum I would install insulation, sheetrock all the walls, and mud the joints. This will make the space usable for other people in the future and increase the value of the space. My final step would be to cover the concrete floor with interlocking carpet squares to provide some insulation and make it easier on the feet [5].



3. An insulation kit from Owen Corning adds a level of comfort to the garage, making the space easier to heat and cool.

I think it is important to invest in comfort when it comes to layout space and to completely finish the space before starting major railroad construction.

LAYOUT BUILDING APPROACH

I would build the layout in a modular/sectional fashion. I have had to move several times in the past and I would like to take the layout with me!

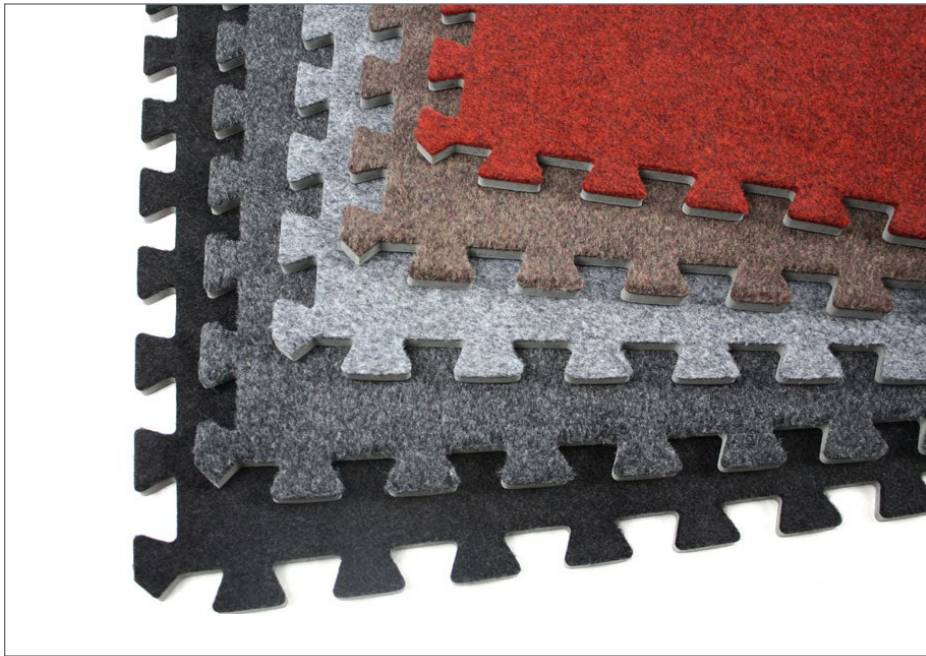


4. A ductless heating/cooling system would require some planning and proper placement but the space would be much more comfortable without large temperature swings in the garage.

For the legs, I would use the Ivar bookshelf system from Ikea. This gives me prebuilt legs and I would add adjustable feet to the bottoms of the legs because garage floors are usually sloped and not level.

Using the TOMA approach, I would build the top of the layout out of ¼" and ½" plywood sections, limiting them to no longer than 6' to keep things portable.

The modules would include a built-in backdrop and a built-in valance for each section. With the layout being modular in nature,



5. Carpet squares like these that measure 24" x 24" can be easily placed, and work on uneven surfaces. The built-in padding and rubber backing make them weather resistant. In the event one is damaged, or if they need to be removed, they can be pulled up as needed.

sections could be worked on and completed in another area, then moved into place. One final advantage of this system: in the event more room becomes available, I can disassemble a section joint and put in a new addition.

For track I would use Micro Engineering code 83 flex track and Peco 83 switches. The minimum radius on the layout would be 18" on the wyes. This would not be much of an issue as all the power on the line has been small 4-axle units and smaller freight cars. I would utilize Digitrax DCC as I have already invested in the system, but the layout could just as easily be operated on DC or any other DCC system.

CITY OF PRINEVILLE OPERATION

The operations were very interesting and centered on the large number of sawmills on the line. The traffic was over 90% lumber



6. The Ivar shelving system from IKEA has a variety of different fronts that can be used. Just bookshelves, cabinets, or other storage systems can be had. Since they are modular and unfinished wood, they can be modified and painted to meet your needs.

and milling related. They also handled petroleum, potatoes, feed, LCL freight, and company materials, making the car variety interesting.

Along with generating outbound finished lumber, they also shipped unfinished lumber for milling at other locations in the area and received inbound loads of lumber for finishing.

In 1968, the railroad started operating with two crews. The first would come on duty in the early morning, switching all the



7. Here's how I would build the entire layout. This is a 4' section with a 20" tall backdrop – this module is 18" wide. When complete, I would place LED lighting at the top of the module, with a valance to hide it. The module is very light, but also very strong.

customers in Prineville. In the afternoon, the next crew would come on duty and take the train up to Prineville Junction.

Once there, the crew would set out traffic for the SP&S and Union Pacific, blocking the cars for Northbound and Southbound movements. Once that was complete, they would gather up all the interchange and head back to Prineville.

Due to the schedule of the Union Pacific and SP&S locals, the CoFP crew would often wait for the local to drop off the cars and grab



8. I am building this module at a workbench. Once it is complete, I will take it into the layout room and place it on the Ikea shelving unit. This way, there will be no construction mess in the finished layout space.

them immediately. This would reduce the dwell time of the car and save on Car Hire and Demurrage charges.

This was repeated Monday through Thursday. On Friday, they would deliver only as there were no locals operating. On Sunday they would run to Junction as a caboose hop and meet the locals to pick up the inbound traffic. None of the customers shipped on weekends and many of them were closed.

One other interesting operation was the passenger service offered to the citizens of Prineville free of charge. The City of Prineville purchased a single Union Pacific Chair car that would be added to the train on Friday and taken to the junction with the outbound train.

Since there were no cars to pick up, they would return to Prineville with just the coach. The coach was also used for various excursions operated on the line.



9. In the original yellow scheme on a rainy spring day in 1969, two of the CofP Alcos work to gather the interchange cars. *Photo by W.L. Hammond, collection of Gregory Baker*



10. In the last scheme worn by the CofP Alcos, two units lead a good-sized train up to Prineville Junction in 1976. The northbound and southbound cars will be placed for pick-up, the inbounds gathered, and the train will return to Prineville. *Photographer unknown, collection of Gregory Baker*



11. Here we see one of the City of Prineville Geeps switching cars at the Ochoco Mill in 1983. This mill was beyond the downtown area and at one time was the largest mill served by the CofP. The Geeps replaced the Alco locomotives in the 1980s and the company adopted a Milwaukee Road-style scheme. The bridge and creek are a nice detail. *Photo by Art Peterson, collection of Gregory Baker*

PRINEVILLE RAILWAY | 13

Along with regular operations, the railroad also maintains its right of way.

When the city originally built its link to the Oregon Trunk, it used light rail, small ties and very little ballast. Over time, this was found insufficient and the railroad was rebuilt using better ties, 90 lb. rail, and ballast sourced from local areas. The rock is red pumice which is abundant in the area as the result of lava flows thousands of years ago.

As with many short lines, the equipment is second- or third hand. They had a few side-dump ballast cars and a few former SP ballast cars. They also have owned a number of flat cars, hy-rail vehicles, and other MOW equipment over the years to keep the railroad running.



12. The typical power for the SP&S local was a couple of Alco RS3s. The local worked from Bend north to Madras and would return.

PRINEVILLE RAILWAY | 14



13. The Union Pacific usually had a GP that was left online to take care of local customers. They also ran a local between The Dalles and Bend that would work the CofP interchange. *Photographer unknown, 1975, collection of Gregory Baker*



14. Waiting for the next Friday night run, the City of Prineville former UP Chair Car #5306 sits in Prineville. *Photo by W.L. Hammond, 1970, collection of Greg Baker*

UNIQUE EQUIPMENT

One thing that really piques my interest in the City of Prineville Railway is the rare equipment they operate. They have some fascinating locomotives and cabooses.

Caboose 202: This caboose originally was equipped with a baggage door but by my era the door had been boarded up and replaced with an aluminum frame window. The caboose was also sheathed in plywood. It seemed to weather quickly, needing a number of repaints.

Caboose 201: Acquired after the 202 and used to support the need for two crews. The former Lehigh Valley caboose is all steel construction and arrived on the property in the late 1960s. This caboose features a low cupola and porthole windows, making it a unique caboose in Eastern Oregon.



15. Here we see one of the two 20-yard Westin side-dump cars owned by the railroad sitting near the depot in Prineville in 1973. *Photo by W.L. Hammond, collection of Gregory Baker*



16. Here a short ballast train is at Prineville Junction in the spring of 1979. Along with the two ballast cars, the railroad is using its former Lehigh Valley caboose on the train. Moves like this could add to the operation of the railroad and give a reason to build some unique equipment.



17. Alco 101, here in Prineville, was purchased new from Alco in 1950 and retired in 1984. The CofP added Gyalights and Mars lights to both ends of the units. These were activated when the horn was blown to provide additional visibility at road crossings. *Photo by Gordon Lloyd, collection of Gregory Baker*



18. The 102 and 103 are being serviced at Prineville in 1980. This was the second scheme used on these units. The 102 was acquired from the SP&S in 1961 and retired in 1984. *Photo by Gordon Lloyd, collection of Gregory Baker*



19. The CofP 202 caboose sits near the engine house in Prineville in October 1968. As is evident, the baggage door has been boarded up and a new window installed. The caboose looks like it could use some work. *Photo by G. Oliver, collection of Gregory Baker*



20. Here the CofP 202 is in a little better shape in 1971 with some fresh plywood and paint. They have also placed the number and name on separate panels attached to the car. *Photo by W.L. Hammond, collection of Gregory Baker*



21. Here the caboose sits in Prineville in 1975, almost ready for another paint job.



22. Just a few years later, in 1978, the caboose sits near the engine house. Shortly after this the caboose was moved to Redmond, Oregon and used as a video arcade, then a party room for Burger King, and finally moved to a private residence in Bend, Oregon.



23. This is the earliest photo I have found of the 201 on the City of Prineville property, sitting near the engine house in 1966. Photo by Jack Pfeifer, collection of Gregory Baker



24. The 201 is sitting on the main at Prineville Junction in the spring of 1973. Photo by Stan Styles, collection of Gregory Baker



25. Here is a great view of the end of the 201 with its sister caboose on the other track. This caboose has recently been preserved by the Bowman Museum in Prineville and is in fresh paint.

PRINEVILLE JUNCTION

Prineville Junction is the interchange point between the UP and SP&S along the jointly operated Oregon Trunk. (The UP has since ceded its OT customers to the BNSF for considerations elsewhere). The CofP interchanges at this location using two small set-out tracks to the north and south of the depot.

A wye at this location was used to facilitate the interchange and turn the power. The depot was built by the City of Prineville and used as an office to deal with the interchanging of cars between the railroads.

PRINEVILLE

Of course, Prineville is the namesake of the railroad and the headquarters of the operation. The town contained most of the



26. This is a photo postcard of the SP&S mainline at Prineville Junction. *Photographer unknown, collection of Gregory Baker*

customers on the line along with a two-stall engine house and a freight office. In 1968 they built a new administration building. This is the on-duty point for all the departments.

Because the railroad was owned by the city, they use the city radio channel, so in between switching you hear radio traffic among city workers, fire, and other communications.

OPERATING THE CITY OF PRINEVILLE

The layout would be operated with from one to four people and could keep people busy for a few hours. The switching is relatively simple and the run itself is not very long. Later operations allow for one crew to use one engine to switch cars in Prineville while the other takes cars to the interchange and returns.



27. The engine house is to the left with these two stub tracks for power, cabooses, and MOW cars. *Photographer unknown, 1983, collection of Gregory Baker*



28. Another view of the engine house area. The last caboose acquired is a former Missouri Pacific car. They even left the buzz saw logo. *Photographer unknown, 1983, collection of Gregory Baker*



29. The new administration building was built east of the depot in 1968. *Photo by W.L. Hammond, 1970, collection of Gregory Baker*



RATE THIS ARTICLE

The railroad is all yard limits, requiring no clearances, signals, or dispatcher. With a simple bulletin letting the crew know of any issues, they would be free to work. The line is also only 20mph, so a slow and deliberate pace could extend the operating session.

Another consideration – you will find no commercially painted model items for the City of Prineville in the

1960s era. They did purchase several per diem boxcars that arrived in the late 1970s, and there are models of these.

Pushing the era past the 1980s, the MILW Geeps have been available from a few manufacturers. For some this scarcity of models may be a source of frustration, but for me it is one of the reasons I am attracted to the City of Prineville Railway. ☒

GREG BAKER



Greg has been “seriously” into model railroading since 2000, but he has been fascinated with trains as long as he can remember. He considers himself a prototype modeler focusing on the railroads along the Oregon Trunk in the 1960s. His interests include the modeling the SP&S, GN, UP, and the City of Prineville Railway in HO scale. He is currently working on a shelf layout using the TOMA method.

He is in the process of moving to the Portland, Oregon area and has started a new job with a local transit agency there. He is excited to be back in Oregon and to enjoy everything it has to offer, while spending time with his wife and two homes. ■

THE AH-HAH MOMENT

column



MRH Running Extra | July 2019

ERIC HANSMANN: THE VALUE OF PUTTING UNDECORATED EQUIPMENT INTO TEMP SERVICE ...



I BUILT MY HO SCALE WHEELING FREIGHT TERMINAL

with operations in mind. As construction wrapped up, I realized I did not have enough freight cars to fully operate the layout. I needed at least three times more cars than I had.

Among my stash were several completed, undecorated models, plus a few new models rolling through my workbench. As the



1. Several undecorated freight cars wear simple ID tags to increase the number of cars available for an operating session.
[Yellow stickies work great for this too. - ed.]

THE AH-HAH MOMENT | 2

debut operating session date drew near, I was unable to paint these cars, plus I did not yet have proper decals to letter them.

I made identification tags for these undecorated cars that could be taped to the running boards. I made tags for gondolas as tents.

For a simple car code I used: B for boxcars and a two-digit number; B01, B02, B03, and so on. I used G for gondolas plus a number.

The first session went well and illustrated another benefit: new cars could be shaken down during op sessions. Tight trucks, coupler height problems, or other issues could be noted by the crews. In the weeks between sessions, I fixed these issues.

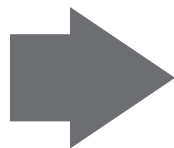
We held a couple op sessions while some boxcars were being detailed on my workbench. I used a Sharpie to mark an ID tag on the car weight and pressed these “rolling underframes” into service while the car bodies got detailed and painted. They looked more like a flat car for the op session but I marked them as boxcars.

These ID tags work well to get you operating sooner (and working out the gremlins) while getting your fleet up to capacity. ☑



2. I marked a couple of boxcar underframes for service while the car bodies were being completed. Note the gondola has a simple tent tag while the resin boxcar has a tag taped to the running board.

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



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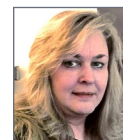
Model Railroad Hobbyist July 2019 | #113

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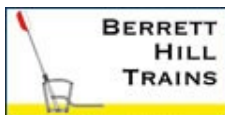
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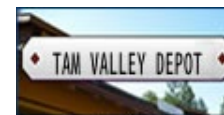
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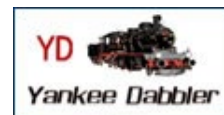
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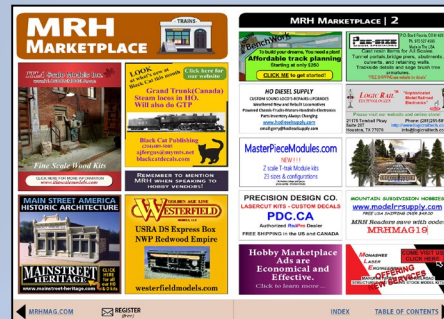
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Scene and photography
by Ken J Johnson
Production model shown

PUBLISHER'S MUSINGS



Model Railroad Hobbyist | July 2019

JOE FUGATE: SISKIYOU LINE 1, GOING, GOING, ...



“I THOUGHT YOU DISMANTLED YOUR LAYOUT AREADY.”

That's what people have told me when I have told them that some 80% of the old layout still remains.

It took at nearly two years of one Saturday a month to get all the benchwork, roadbed, and raised floor in place. Why should it come as any big surprise the layout doesn't come out in a day, either?

To catch you up if you came in late, in 2017 I decided to dismantle my 26 yearold layout, now dubbed the Siskiyou Line 1. It's called SL1 because a Siskiyou Line 2 will be coming in its place.

It's a long story, but basically when my 90 year old mom finally passes (could be next week, could be a decade from now), I'm planning to sell my house and move out of town onto some rural property. The MRH offices and TMTV studio west will move as well.

You can't sell a house with a layout filling half the basement, so it needs to come out. Rather than rush, I decided to dismantle now and start a new TOMA version of the Siskiyou Line in the freshly refinished basement.

The hallmark of TOMA (The “One Module” Approach) is that you can build a home layout using modular / sectional methods and then if you relocate, you can take the layout with you!

PUBLISHER'S MUSINGS | 2

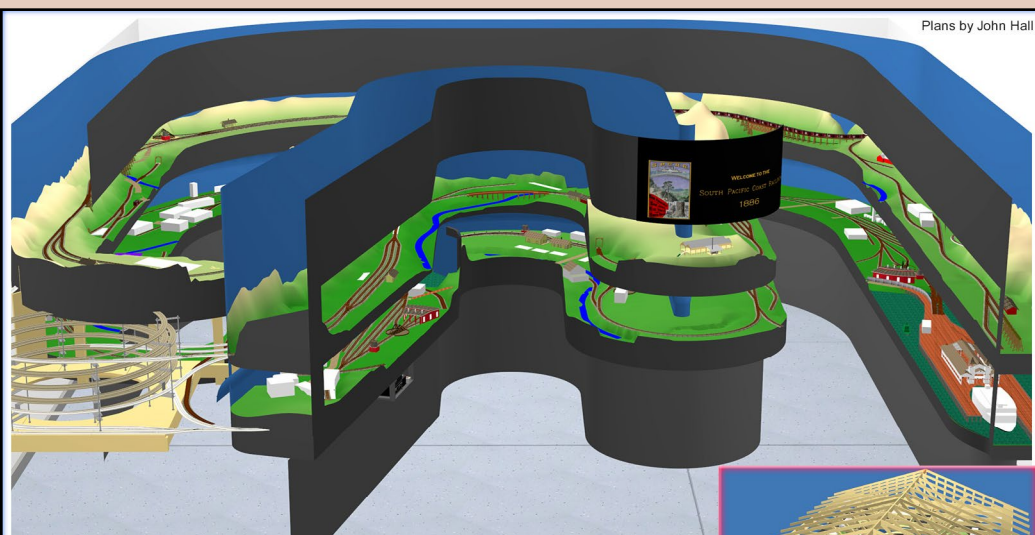
We've been promoting TOMA as a great option for building a home layout for several years now, and it actually becomes quite useful for me that I can now also practice what I preach.

But before I can get too eager about building Siskiyou Line 2 TOMA modules, I need to get Siskiyou Line 1 dismantled!

I spent a good part of my spare time last fall dismantling SL1's staging area and the Dillard Mill shelf. That took ten, count them, ten van loads to the dump. One load with lots of plaster and lumber in it weighed over 250 pounds!

After all that work, the winter season set in and I ceased dismantling work until warmer weather came again this spring. I estimate I managed to remove 20% of the SL1 layout. Meanwhile, 80% of the layout remained!

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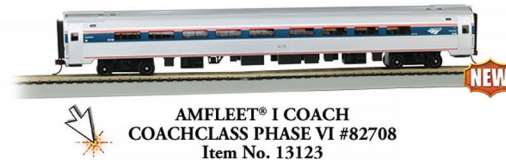
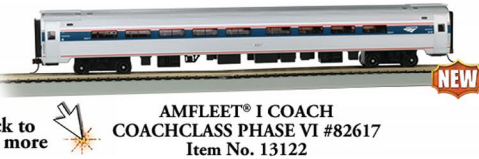
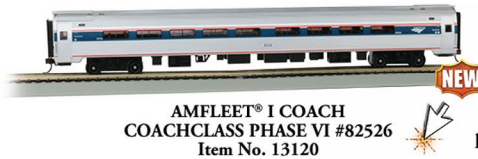
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MONSTER MAINLINE



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I decided to rent a dumpster this time and fill it rather than doing so many costly and time-consuming separate loads to the dump.

In early June my son came over, we got out the sawzall, hammer, crowbar, and drills (for removing screws) and set to dismantling more layout. Over two days, we managed to get another 20% of the layout dismantled and filled up the dumpster right to the brim.

So at this point, some 60% of the layout *still remains to be dismantled*. What a big job this is – don't let anyone tell you dismantling some 1100 square feet of layout bolted-to-the walls layout is quick. I gave no thought to layout removal when building it; it's built to last.

Mounting the layout solidly to the room walls, floor, and ceiling slows dismantling way down. This layout uses a double deck mushroom configuration, which demands anchoring to the ceiling for good support – and it has a stout raised floor on the mushroom

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upper deck side that's anchored to the basement's concrete walls and floor.

My daughter Tana had to come have a look-see when she heard her brother and I were madly dismantling the layout in the basement.

Tana does live video sessions on the internet and as she was watching the spectacle, she suggested we should do a live video of the dismantling.

With her help, we did an impromptu test live session on the dismantling. It went well, so we scheduled a real live session a few hours later, recording two videos.

Try these links if you would like to see the dismantling and discussion:

Dismantling video 1
[\[youtu.be/SSoFN1nn1vI\]](https://youtu.be/SSoFN1nn1vI)

Dismantling video 2
[\[youtu.be/dsvEPMUT5xY\]](https://youtu.be/dsvEPMUT5xY)

Now, we have dismantled 40% of the layout but the 60% that remains means there is much more material still to come out of the basement.!



1. Here's the Dillard Mill shelf being dismantled last fall. This one shelf once dismantled weighed over 250 lbs!



2. The first piece of Siskiyou Line 1 goes into the dumpster at the dump last fall.



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PUBLISHER'S MUSINGS | 5

I am saving all the trees, bridges, tunnel portals, abutments, and structures. The benchwork, plaster scenery, and trackwork that's been ballasted all is going into the trash.

It's hard to remove track that's been ballasted without warping it. So I just throw it out.

One thing I am doing is I'm saving the Tenmile Creek trestle scene that I built as part of my Siskiyou Line video series.

I'm going to frame it up with some nice profile boards, then put it on eBay to sell in an auction. If you might be interested, watch for the announcement.

We'll set a low reserve price for the scene and see how it goes. If you'd like to own this scene that's from my video, then here's your chance. Good luck!

You will, however, be responsible for paying shipping. I plan to crate it up so it can be shipped nicely protected from damage.



3. The dismantling we did this spring totally filled up this dumpster. Here it is just over half full after the first day. On the second day, we tamped it down and then filled it full to the brim. We managed to get another 20% of the layout dismantled over the two days.



4. I've removed the Tenmile Creek trestle scene intact. I will be adding some nice profile board edging and then selling it at auction on eBay to anyone who would like it.

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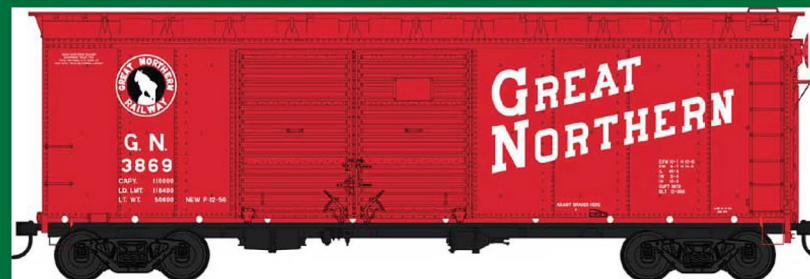
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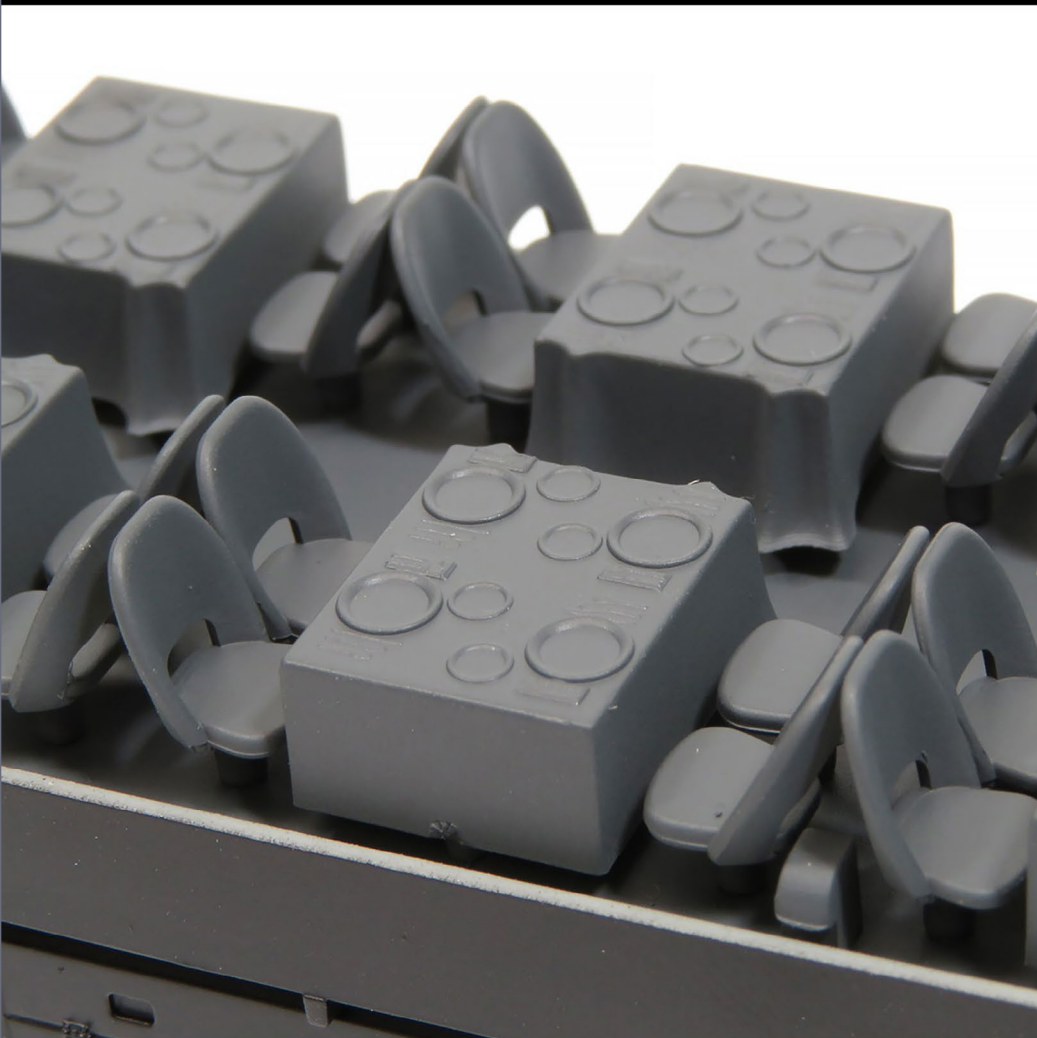
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★ LAST ISSUE'S RATINGS

The three top-rated articles in the [Jun 2019 issue](#) of *Model Railroad Hobbyist* are:

- 4.6** Build your own stay alive
- 4.4** Pelle Soeborg's Daneburg Subdivision
- 4.2** Publishers Musings: Texas syndrome (guest)

Issue overall: **4.8**

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

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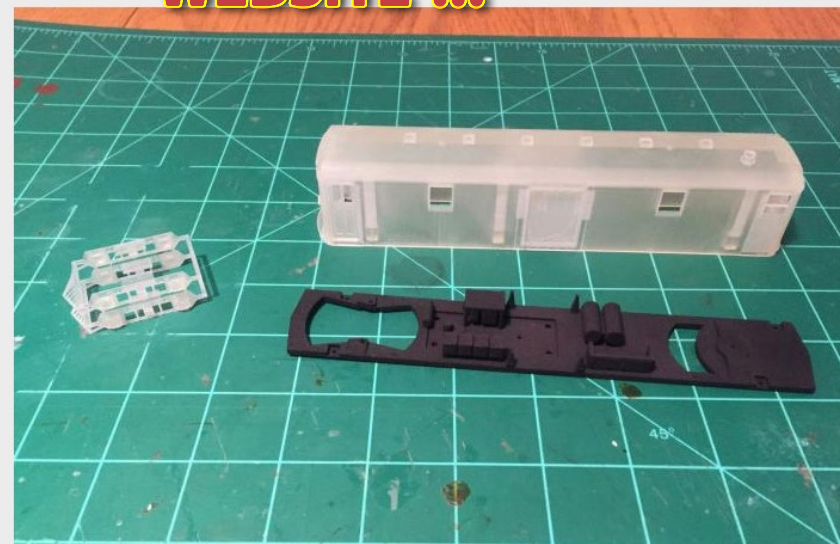
compiled by **JOE FUGATE**

★★★★★
RATE THIS ARTICLE

3D print

Fri, 2019-06-21 14:00 - 1070 hits

My three 3D prints arrived in the mail today. This includes the Curtis truck side frames, the body shell, and the floor. Overall I am very pleased with how they turned out. The black frame is just a little longer than needed and will need to be filed just a little on each end to fit correctly in the shell.



1. It's great to see 3D printing continuing to expand what's possible in the hobby. We're always fascinated when we get really good threads like this one by *dcforbes* on the MRH website – check it out!

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

O scale 2 rail Layout Project

Thu, 2019-06-27 19:46 — geno sharp Layout design

Welcome to my O scale 2 rail layout project blog. I am in the process of designing a O scale 2 rail switching layout. I do not have a finalized track plan at this point, due to the new building for the layout is not here yet. The plan is for a 12x40 building to house the layout. The plan is for it to be a modern era switching spur with several industries to be serviced and to be operated as a point to point turn where the switching job will work the industries down the spur and then return to the yard. In the meantime I have been working on some locomotives and rolling stock and also building turnouts. I am doing hand laid track and turnouts using code 100 rail. I plan on updating the blog as progress moves forward. here are a few cars that i have completed so far for use on the layout. i hope you enjoy following along.

geno sharp



2. It's nice to see O scale getting some traction on the MRH forum. If you like the larger end of the indoor scale spectrum, then make sure you take in *geno sharp's* blog ...

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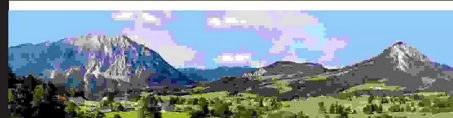
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Wed, 2019-06-26 18:11 — Deemiorgos

Thanks for letting me know Mike.

I got one and I'm comparing it to the ME code 70:



I think I'm going to like the new track because the thickness of the ties and the more realistic work with a gouge and scrape, in order to make them look like the old branch line ties.

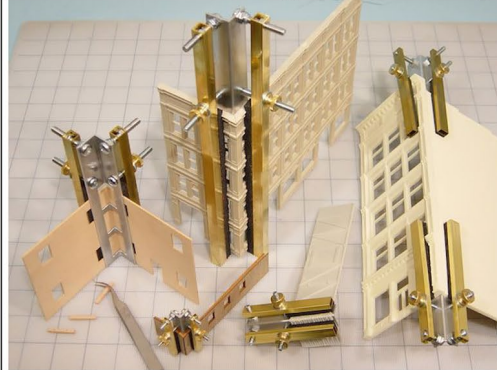
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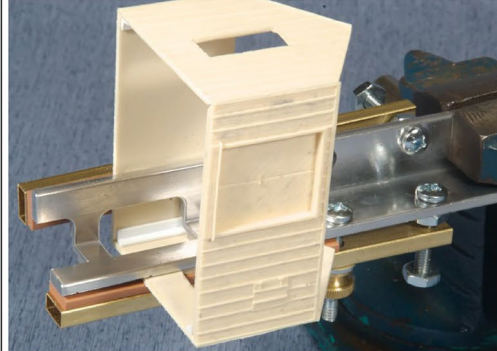
3. MRH forum regular *Deemiorgos* posted this first look at Peco's new code 70 line of track. Here he's comparing it to MicroEngineering track with some great photos ...

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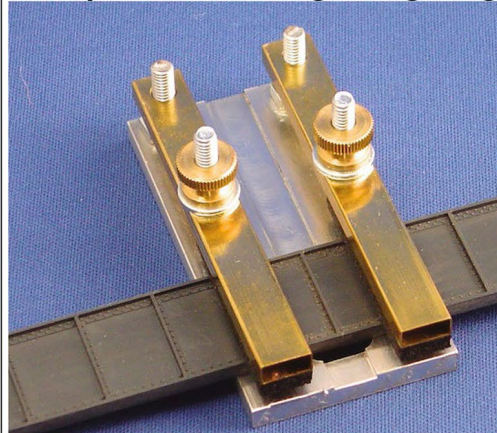
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P&LE Set

Thu, 2019-06-27 14:05 — Tom Haag

I tried the P&LE set for a while and it was a common 50' boxcar. The set, with some modification, was the same as the set I used for the PC Caboose set. It was the correct size for the boxcar but not all of the caboose set was totally accurate. These are the only sets I have tried but heard that one was a good one. I have heard that the P&LE set was a good one.

By the way the P&LE car was modeled by starting with a Branchline boxcar, modifying the sidesills, adding 10' wide Kadec doors and the roofwalk brackets.



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new

Neat!

Thu, 2019-06-27 16:34 — oldline1

Tom,

The car looks great! Nice job!

oldline1

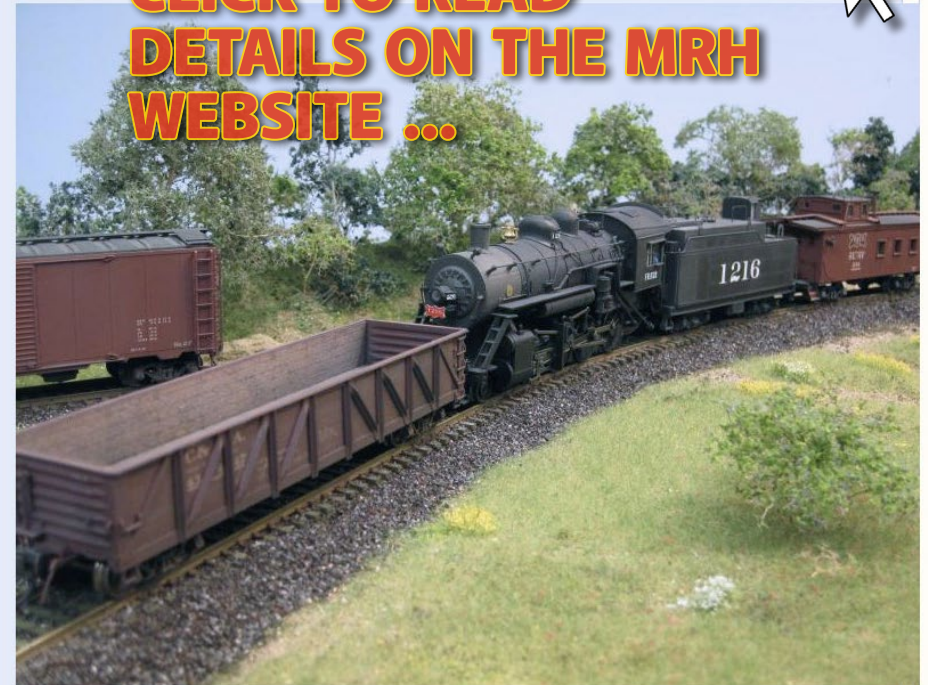
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4. Many tiny vendors exist for useful model railroading products and those who frequent the MRH forum point them out - such as the decal vendor mentioned here. Go have a look ...

South Cherokee Section

Mon, 2019-06-24 10:16 — rjthomas909

Frisco Consolidation 116 is one of the cars that was used in the Crawford and Cherokee layout.



5. A recent Weekly Photo Fun thread has some great steam photos by forum member *rjthomas909*. Click this page and go have a look! ☑





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WHAT'S NEAT

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ALL NEW THIS MONTH FROM THE WHAT'S
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- **KEN PATTERSON** uses backyard garden growth to create scenery
- **MICHELLE KEMPEMA** is “On the Road” in Times Square at Gulliver’s Gate
- **GEORGE BOGATIUK** and **DANIEL COOMBS** explain advanced DCC consisting secrets
- **STEPHEN M. CONROY** shares drone views of Union Pacific’s business train



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► **PHOTOS AND VIDEO OF SUPERB MODELING**

Cheap scenery



1. (Above) 1. Using the root structure of a backyard bush [ask your gardener before uprooting any plants] Ken Patterson uses the complex root structure (above) to make great armatures for sagebrush or smaller weed structures on the layout.

2. (Top right) The fine filaments are great for replicating the eroded roots that show up where a creek curves around and cuts into the bank. It's a great modeling material, costs absolutely nothing, and the raw material is probably out in your yard. Think about this next time you're doing yard work: use roots from your bushes to make your scenery that much better.



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Gulliver's Gate



3. Scenes at Gulliver's Gate in New York City range from cities to rural areas to formal gardens, all tied together by a network of track and animated features that bring the exhibit to life.

Wow! 500,000 square feet of trains, airports, scenes from five continents and an operating Panama Canal.

Michelle Kempema (from the Colorado Model Railroad Museum) takes us to Gulliver's Gate in Times Square, in the heart of New York City. Michelle talks to Bill Woodward, the head of model making at Gulliver's Gate. He started there as a model maker in 2017.

See this it all in this month's video. Link on page 3.

The exhibit, all privately funded, got rolling in 2014 and 2015 and work started on the models in 2016, with the first assembled on site in 2017.

The massive displays were built in different places, all over the world. Some like the airport at the entry were built at the site. In the Great Hall are sprawling scenes of Asia, Latin America, and the Middle East. The Asia area was built in China, and the Latin American scenes by a family in Buenos Aires, Argentina.

Almost everything is scratchbuilt or extensively kitbashed. Scenes like New England and Manhattan were created by modelers in Massachusetts and Brooklyn, so they accurately capture the feel of the real thing.

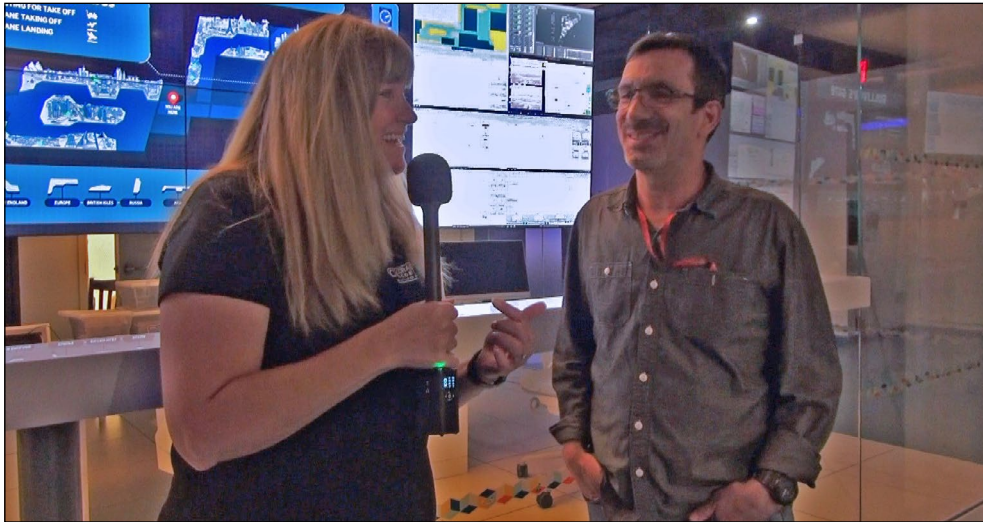


4. Wintry Russian scenes were built in St. Petersburg, Russia.



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





5. (Top) Bill Woodward (right) started out as a modeler at the exhibit and keeps taking on new responsibilities. Because scenes were built all over the world, they use different control systems and hardware. Bill and his crew keep it all working together.

6. (Bottom) Even if people haven't personally visited many sites, a lot of Gulliver's Gate's scenes will be instantly familiar.

Bill spends a lot of time on his hands and knees under the displays. Many have hatches that allow maintainers and cleaners to pop up right in the middle of everything to do their work. A lot goes on that the public doesn't see. But if work needs to be done during exhibit hours, the visitors are thrilled when the crew goes into the scenes and they can see the crew working on the models.

Right now, Bill spends a lot of time fine-tuning the Panama Canal display, which uses real water. There are two locks and two ships that go around all day, seven days a week. Other highly-animated areas include the Latin America display, and a working airport.

The undersides are studded with items model railroaders will recognize, like Digitrax controllers and Arduinos. The exhibit staff includes an electrical engineer (Krishna Sasikumaras, who also shot the video for this segment) who specializes in micro electronics.

Everything is in HO scale, but as the models were built by teams in many countries, there are a lot of variations as far as wiring and the control systems. The Italians used Panasonic PLCs to control their animations; other models use Arduinos. The Gulliver's Gate specialists are slowly switching some things out to make everything standard,



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



WHAT'S NEAT | 8



7. Access is vital important and staff 'visits' during exhibition hours are a crowd-pleaser.



8. Lighting effects add to the drama of the massive display.

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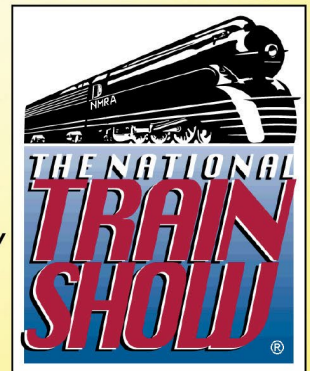
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Areas are assigned to one of four model makers, so they become very familiar with how things work. A lot of light cleaning, detail repairs and improvements are handled before the public is allowed in each day.

Areas change all the time with new displays and animations. Right now, two modelers are handpainting, in-scale graffiti that was on the Berlin Wall. Soon to come is an Africa display.

Right now, Gulliver's Gate is open from 10 am to 8 pm every day, in Times Square in New York City.

Watch the full video interview, using the link on page 3. gullivers-gate.com.

Soundtraxx advanced consisting



9. George Bogatiuk of Soundtraxx and Daniel Coombs of the *What's Neat This Week* podcast explain advanced consisting of locomotives. Advanced consisting of locomotive power sets is highly accessible but still a mystery to many modelers. George and Daniel walk us through ways to take advantage of new features like sound and extra lights.

Simple consisting involves setting all locomotives in a set to the same address so all respond identically. All will move in the same direction at the same time and at the same speed step. At the same time, all of the lights will be on, and all of the horns will blow at the same time.

George shows how to modify settings on some of the units so only the lead unit will have active lights and sounds. That's OK until you break up the consist and want to run an engine on its own – which means you need to get in and reset a lot of commands.

The second type of consist, what is called a **basic consist** uses the command station to determine which locomotives are in the consist, the order they are in, and how the leading and trailing units will behave.

This type of consisting developed when engines had few programmable features. With newer engines, this can result in large numbers of commands being communicated and can really slow down the response times of DCC systems. In some cases, it might take an undesirable amount of time to sound horns, ring bells, and accomplish speed changes.

The third option is what's called an **advanced consist**. An advanced consist uses decoder memory – not the command stations – to tell the decoder that it is in a consist. This is where we tell our lead locomotive to turn on the headlights, turn on the bell, blow the horn and tell our trailing units and the lead unit both to turn on the brakes and so on. And what really is cool, George says is “I take it to your place, I put it on the track and it's going to run exactly the same way.” See the details, learn about setting up distributed power sets, and much more as from George and Daniel this month's video on page 3.

All model railroad products seen in this episode of *What's Neat* are available through Caboose in Lakewood, Colorado and can be ordered online at www.caboosehobbies.com.

View from above



10. Check out Stephen M. Conroy's drone views of the classic beauty of the Union Pacific business train with its recently-built power cars as it passes through varied farmland. It's fun

to study this train, but also check out all the beautiful shades of green in the farm land surrounding the whole consist. ☒

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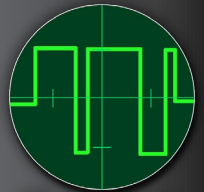
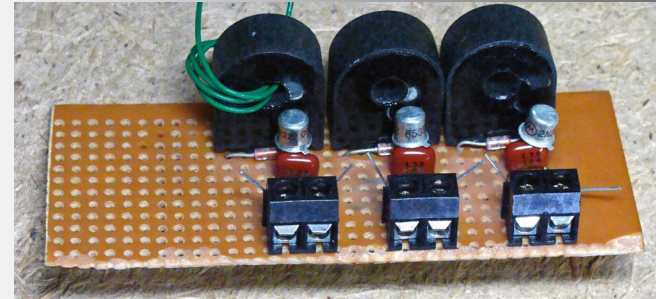
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Simple block detector



**Electrical
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GREG CIURPITA builds a
 simple block detection
 circuit ...

1. Greg built three simple
 block detectors here on this
 perfboard.

A BLOCK DETECTOR IS A COMMON CIRCUIT USED
 as part of a model railroad signal system.

A block detection circuit indicates if a block is occupied by a locomotive, cars having resistor wheelsets, or cars with lighting installed. Two common current-detection methods are the NMRA circuit and Rob Paisley's Transformer circuit for DCC. See the sidebar "Other common track detection methods" for some technical information on these other circuits.

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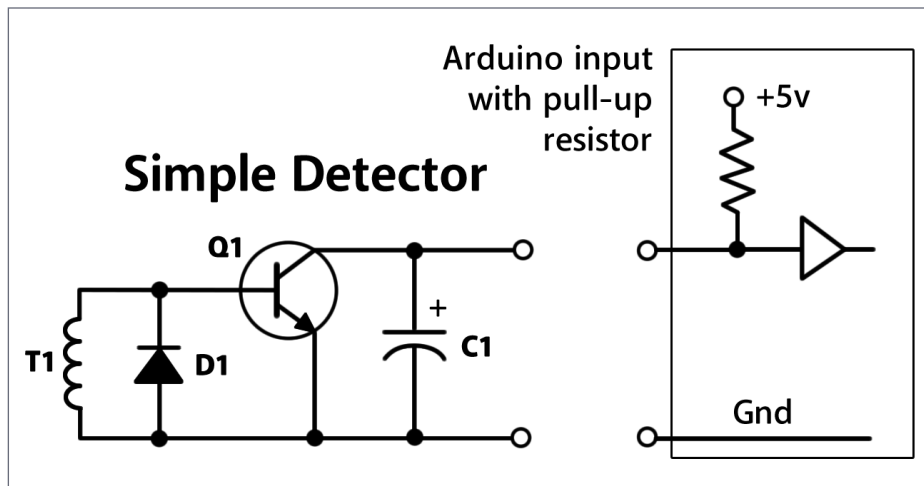
J. Fugate

MORE ON SIGNALING

For a tutorial on signaling and how detection fits in, see the Signaling 101 segment in the October 2018 MRH [mrhmag.com/magazine/mrh2018-10/signaling-101].

The Circuit

The simplified detector circuit has four components plus a length of track feeder wire that loops through the transformer. The cost including the perfboard is less than \$5.



2. The simple detector circuit, along with a suggested connection to an Arduino. You may need to use an external pull-up resistor of about 10K ohms if you connect the detector to other devices.



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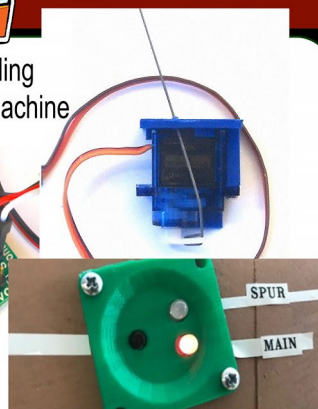
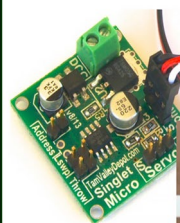
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SIMPLE BLOCK DETECTOR | 3

The detector transistor has a capacitor across its output that charges through an external pull-up resistor – see the sidebar “Connecting the detector to other equipment.”

The circuit doesn’t use any special parts aside from the transformer [3] to detect DCC pulses. The capacitor can be larger or smaller: larger values will result in a longer delay.

I didn’t need a large number of detectors, so I made three of these on a single scrap of general-purpose hobbyist perfboard I had on hand [1]. I just soldered the components to the perfboard.

I slipped a length of wire insulation over one of the diode leads and folded it over to make the connection from the transformer to the base of the transistor on the backside of the perfboard [4]. I left the capacitor leads long to act as easy test points for meter probes.

PARTS LIST

- T1 – Vitec 57P1820G transformer
- Q1 – BC337, 2N3904, or 2N2222 NPN transistor
- D1 – 1N914 diode
- C1 – 0.2uF capacitor

Perfboard: A five-pack of mini-perfboards for this detector costs just under \$10 from Amazon.

WEB: amzn.com/B0778G64QZ?tag=mrhmag-20.

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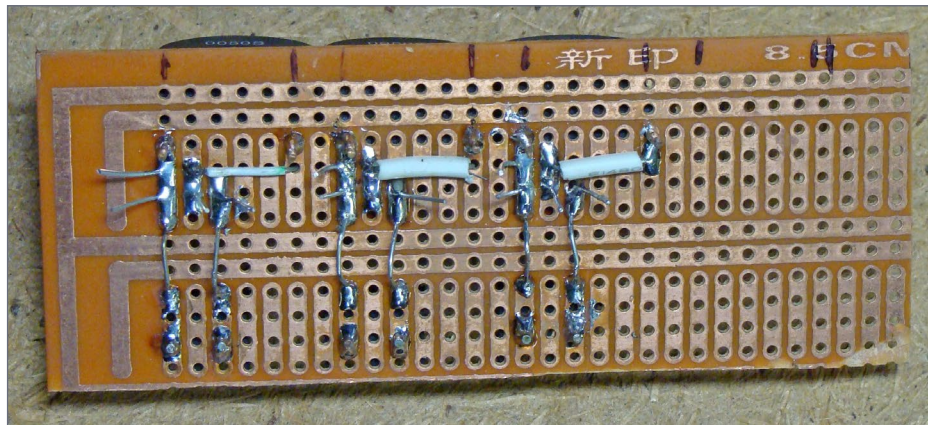
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Testing

I wanted to learn more about pulse transformers, and how the number of loops of track wire through one affects the occupancy detector's sensitivity. I used an LED and 1K resistor across the rails to simulate a lighted rail car. I also made my own transformer by winding enameled wire on a toroid core.



3. The Vitec 57P1820G transformer, which costs about \$2.



4. This is the underside of the perfboard showing the wiring connections. Pretty simple stuff.

CONNECTING THE DETECTOR TO OTHER EQUIPMENT

An occupancy detector must connect to another electronics device that uses the occupancy information to control track-side signals, crossing gates, etc. Typically these devices contain “pull-up” resistors that ensure signals are received at the correct logic-level voltage.

An Arduino has such onboard pull-up resistors, so it's easy to connect this detector to an Arduino.

In your Arduino program (known as a “sketch”), add the INPUT_PULLUP argument to the pinMode() instruction. A logic “low” means the block is occupied, while “high” means the block is vacant.

The Arduino is well-suited to this simple occupancy detector.

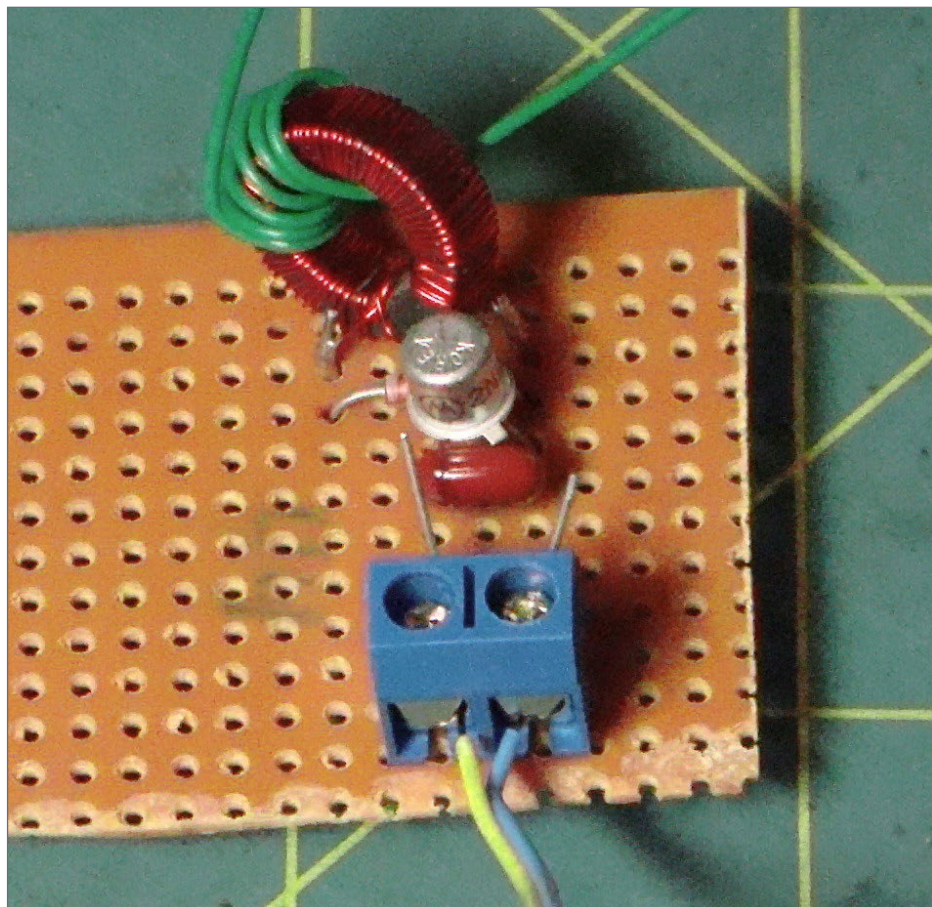
For more on using the Arduino in model railroading applications, see Geoff Bunza's “Modelers' introduction to the Arduinos” in the December 2016 issue of *MRH*. [mrhmag.com/magazine/mrh2016-12-dec/Arduino] ■



5. An Arduino, which has internal pull-up resistors on the inputs that can be used to provide 5V to the detector circuit.

SIMPLE BLOCK DETECTOR | 6

Table [7] shows the detector's output voltage as a function of the number of loops of track wire through the hole in the transformer. I used a regulated 5V source and a 10K pull-up resistor on the output to simulate an Arduino input. A lower voltage is better because it reduces the chances of erratic occupancy detection.



6. Greg also hand-wound a transformer to better understand the DCC current-sensing behavior of pulse transformers. He made a surprising discovery!

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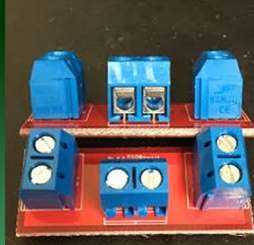


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SIMPLE BLOCK DETECTOR | 7

As you can see, the output voltage drops with more loops of track wire. That is, the more loops of track wire you have, the more sensitive the detector is.

Also, the construction of the transformer affects sensitivity. The Vitec 57P1820G is wound with 300 turns of wire, but I wound only 50 turns on my transformer. It is more sensitive! For example, just four track-wire loops produced a detector output of 0.49V, while four loops through the Vitec transformer produced an output of 3.7V. Again, lower output voltage is better.

This suggests selecting a transformer that has fewer turns of wire. You might try using a Coilcraft CS1050L, which has 50 turns, instead of the 300-turn Vitec 57P1820G.

I learned a lot building this simple current-sense occupancy detector. A similar ready-built detector is the BD20 from NCE or the CKT-BD1 from Iowa Scaled Engineering. The commercial products are likely to have a few more features than this basic detector, which could be an advantage. Either of these can be had for \$14-\$16 if you visit one of the *MRH* Sponsors. ☒

Loops	Home-made	Vitec
1	4.2v	5v
2	2.7v	5v
3	1.0v	4.6v
4	0.49v	3.7v
5	0.44v	2.2v
6	0.43v	0.62v

7. This table compares the results of the hand-wound transformer to the Vitec one.

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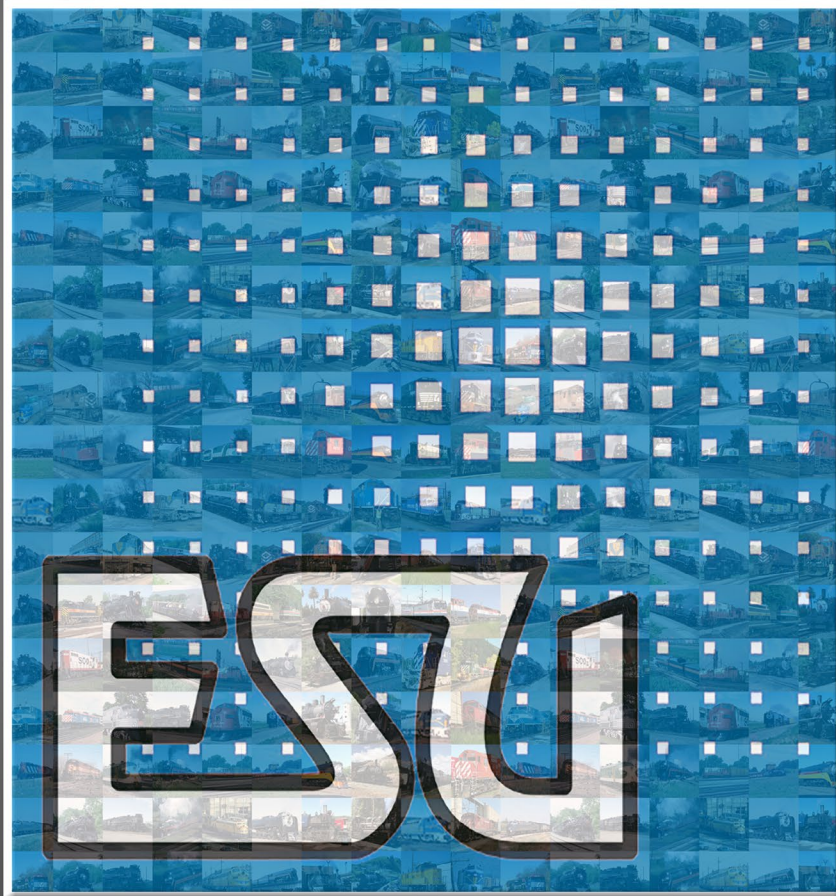
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SIMPLE BLOCK DETECTOR | 8

OTHER COMMON TRACK DETECTION METHODS

Two common current detection methods in use are the "NMRA circuit" [gatewaynmra.org/1997/easy-block-detection-2-color-signals-detection-systems-circuits] and Rob Paisley's transformer circuit [circuitous.ca/DccBODvt5.html] for DCC.

NMRA circuit: The NMRA circuit places a bridge rectifier between one rail and a track power supply wire, along with an opto-isolator across the bridge. This is also called the "diode-drop" detector method.

Whenever current is drawn through the block, the voltage across the bridge is sufficient to turn on the opto-isolator, causing its open-collector output to switch to a logic "low," indicating an occupied block.

This output can directly light a signal or be detected by a digital circuit such as an Arduino.

A drawback of the NMRA circuit is it drops the track voltage by approximately 1.4V, which often is not a drawback for DCC, but it might be significant if your layout uses regular DC track power.

Also this puts the occupancy detection directly in the track power



8. Using one of the track detectors listed here, you can detect the presence of trains on your layout and have the basis of a signaling system.

OTHER COMMON TRACK DETECTION METHODS

feeder circuit. It's important to be mindful of this when wiring track blocks and short-circuit protectors.

Rob Paisley's circuit: Rob Paisley's detection circuit uses a pulse transformer though which you pass multiple turns of the track feeder wire to the block. It works only with DCC, not with DC track power.

This approach does not cause a voltage drop. The detection circuit in this article is a simpler cousin of the Paisley circuit.

The Paisley circuit uses an NE556 timer to monitor voltages across a capacitor to determine if the block is occupied. The timer helps avoid intermittent bouncing between occupied and unoccupied indications.

The Paisley circuit is not connected directly to the track, but it does need an external power source for the NE556 timer ■



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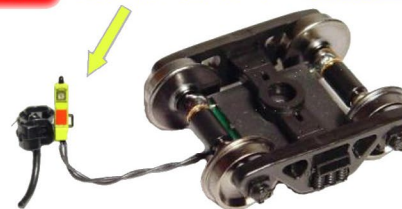
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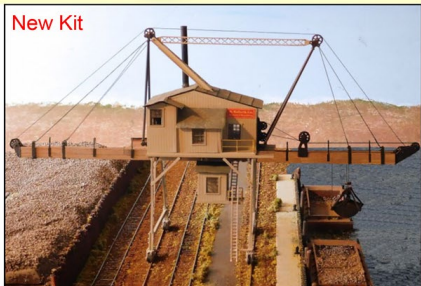
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Rob Spangler's Western Pacific 8th Sub

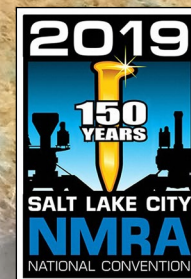


Also on TMTV!

JOE FUGATE visits this Great Basin region layout modeling the WP in the late '70s ...



1. The dry wash crossing between Cedar and Lakeview is a part of the layout inspired by prototype WP scenes on Utah's Low Hill and Nevada's Silver Zone Pass, among others. The girder bridge is a Micro Engineering kit to which Rob added wood ties and scratchbuilt styrene abutments.





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JOE: LET'S START AT THE BEGINNING. WHY model trains?

Rob Spangler: I've been in the hobby of model railroading since I was about six years old. My great aunt bought me a train set for Christmas when I was six. I'd always been interested in trains and that gave me sort of the "gateway drug" into the hobby and I've been active ever since.

Joe: From there, how has the hobby evolved for you?

Rob: I've tried to match what I'm modeling to what I've seen and that's been the challenge that's kept me interested. Every project I do, I try to get a little better.

I've always had an interest in looking at the prototype and watching it out the car window as we would do family drives or when I would go railfanning.

From when I was small, I've always enjoyed visiting like natural history museums and nice presentations that immerse you into something. I've always been inspired by that type of presentation – by something that really looks nice and finished.

When someone walks into the Western Pacific Eighth Sub, I hope that they can find a pleasant environment that's well-lit and finished like a decent part of the home and see something that reminds them of a museum diorama.



2. This is the 8th Sub's engine terminal area near the main yard at Junction City. Rob uses NCE DCC and loco decoders from NCE and TCS, but he doesn't run sound on his layout.

Joe: What specifically are you modeling here?

Rob: I'm modeling the Western Pacific Eighth Subdivision from the eastern edge of Nevada at West Wendover to Salt Lake City, Utah. It's my interpretation of what railroading in Utah during the 1970s and '80s could have been like.

That's the time that I really became a serious modeler and was very interested in railfanning. I have specific images of the scenery and structures I've incorporated that takes me back to that time and makes me feel like I am railfanning in back in the '70s again.

The time of the year that we model in here is late summer, early fall. I like the contrast between the dark colors of foliage and the yellow grass as it goes dormant in the late summer. I'm aiming for you to feel like you're outside in Utah during the late summer.

Joe: Why did you pick the Western Pacific to model and not some other road?

Rob: The decision to model the Western Pacific tied into some thinking that I had when I was trying to leave narrow gauge modeling in the '80s. I was getting more interested in prototype operations and I found that my HOn3 was not giving me really what I wanted.

I thought, well, I need to go back to HO standard gauge and create something that will operate more reliably and give me more of the variety of the prototype at that time (in the '80s).

As I was looking for a prototype to pick, I did not have a very large space to put a railroad in at that time. My space was only a



3. A westbound has just departed Junction City and started its trip west toward the desert and an eventual crew change at Elko. Much of this backdrop was based on photos taken a few blocks from Rob's home.



4. Of all the bridge scenes on the 8th Sub, this one is the most dramatic. The train departs Milton and rumbles across this high bridge on its way to Cedar. Rob kitbashed this bridge from Micro Engineering and Central Valley bridge kits.

12 foot by 20 foot room. I wanted something that seemed to be manageable and fit into that space

The railroads here in Utah that inspired me, including the Union Pacific and the Southern Pacific, they seem to be big and unmanageable for the limited railroad space that I had available.

The Denver and Rio Grande Western was something that a lot of people modeled here locally. But I thought maybe that was a little overdone. Still, I wanted to stay with something Utah-based and that offered something more than just the coal traffic like the Utah Railway had.

That left me with the Western Pacific and it didn't seem there were a lot of people modeling the WP. The WP seems small and manageable – and they had nothing but four axle diesels. So that seemed to be a good prototype to pick for a small space.

It's also something that I've enjoyed modeling ever since, so I've just stayed with it.

Joe: Why the late 1970s or early '80s? Why not some other era?

Rob: I based my chosen era largely on the time period when I got interested in railfanning the prototype in the '70s, early '80s, as well as the types of operations that existed then.



5. Extra 3010 East is in the hole at Cedar, waiting for authority out onto the main. The east end of Cedar hangs onto the hillside above Cedar Creek and needs several retaining walls to stay in place.

Railroading had not gone to so much intermodal traffic like we see today. There weren't as many unit trains, and there was still a lot of "loose car" railroading.

Local freights would serve a lot of industries on their run. And the variety of cars was something that kept me interested in the rolling stock modeling. I liked seeing something in model form that reminded me of the prototype locals that I enjoyed railfanning.

Joe: How hard was it to devise with a good track plan for this space?

Rob: I established the track plan before I even had the house. I used blueprints for the home my wife and I were having built for us.

It was not that difficult for me to figure out how to wrap a main line around the room and determine the major town locations and so on that were in here. Once the house was built and we had the train room finished, I planned most of the final track arrangements in 100% scale using blue tape on the floor of the train room.

All I had to do was shift things around in 3D until I liked what I saw and then built from that. So really wasn't hard process at all.

I've designed and build enough railroads that I knew what I wanted, and I knew what would fit.

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J. Fugate

THE BENEFIT OF HOBBY EXPERIENCE

Take careful note of how Rob got lots of hobby experience with smaller layout projects before embarking on his basement-filling dream layout.

Because Rob had a good measure of layout experience under his belt already, when it came time to build this much larger layout project, he knew quite well what he wanted and how to plan it out and how to execute it well.

With actual layout building experience under his belt, Rob successfully built a larger layout he now finds very satisfying and it involved no nasty surprises.

So *do not* overlook doing something a lot smaller first, either a small throw-away “chainsaw” layout or some TOMA modules. And if you find you like TOMA, you can just keep going to make the layout larger – easily expanding is built in!



6. GP35 3010 leads a train out of Milton on its way to Cedar. Rob often puts structures or other scenic elements between the trains and the aisle to create what he calls a “visual event.” Rob says the more visual events along the run, the longer the run feels.



7. GP9 729 pulls an empty flatcar from the Vickers Land & Livestock spur at Cedar. Vickers receives shipments of various commodities here for use on its vast farm and ranch holdings.

Joe: When did you start construction?

Rob: I started in about 2009. I finished the room myself and so as soon as the room was done, I started in earnest on the benchwork. I’d salvaged a lot of materials from the previous railroad so I used the blue tape diagram on the floor and built the benchwork right from that.

Joe: Did it go like expected?

Rob: I knew what I was headed for since this is simply a larger version of a railroad that I had built in my previous home. The only major change I made was relocating the branch line – it was supposed to be in a different aisle and climb above the main

line. But as laid everything out in 3D, I realized the branch line worked better by dropping it to a bottom level instead of going to an upper level. That's the only thing that really changed substantially from the track plan.

Construction of the railroad went fast. Since I knew what I wanted and knew how to build it from previous railroads, it went as I thought it would.

I knew exactly where most of the components would end up and how most of the benchwork would be shaped. I had plenty of time to plan as the house was being built.

Joe: Any big challenges with this layout?



8. The WP main line from Junction City eastbound to Ogden disappears through this well-disguised hole, with a helix leading down to staging. Take a closer look in [9].

Rob: Yes, making sure the operation gives exactly what I wanted out of it. While the major design of the railroad was completed before I began work, some of the other small things like where local freights would need extra work remained a question.

Where we would need extra length to a track to add an additional bit of work for someone to switch – things like that got figured out over time. I just didn't know what to expect until I was operating the railroad.

That's one of the reasons I wanted to get operating as quickly as possible. I wanted to get the railroad scenicked and have something nice to look at, but I knew I might need to change things after we started running.

Getting the railroad up and running quickly allowed me to make those small changes before the scenery and then move on to modeling the scenery with a reasonable amount of progress.

So aside from small tweaks to add a siding here or extend a track there, I got what I thought was going to get out of this design.

Joe: Well, that's good – all that prior experience with other smaller layouts obviously paid off. If you were to pick one thing that was your greatest challenge while building this layout, what would you say that is?

Rob: My greatest challenge has been figuring out how to get the backdrop and the 3D portions of the scenery to match up as well given the fact that there's so little vegetation that can hide the gaps!

On previous railroads I had scenery cracking along the backdrop, with the 3D and 2D not meshing up as well as I would like.

Here I tried some new techniques such as paintable caulk and building a rounded scenery cross section that blends into the

backdrop to eliminate a hard line at that joint. Over time it's prevented the scenery from cracking along the joint because the paintable caulk can expand and contract with changes in temperature and humidity.

The scenery shaping that I've done this time also has me more satisfied with the way the 3D and the 2D blend together.

Joe: What do you like most about your layout?

Rob: I think there's a couple of things. I like the way it looks aesthetically – it takes me back to the time when I could railfan and



9. Here is a closer look at this exit to staging shown in [8]. Note how effectively Rob has disguised this hole with scenery and a pipeline overhead. He also made sure the scenery on the other side of the hole is well lit, rather than just disappearing into murky blackness as most modelers have done. Very well done!

see this type of railroading in person back in the late '70s and early '80s.

But the thing I like the best is the camaraderie this railroad allows me to share with my friends. We have an operating session nearly every month. It lets me share the layout and enjoy fellowship with fellow modelers – and I've known most of them for many years. Some of them don't have railroads of their own or they don't have railroads where we can have big operating sessions like this. It gives us a chance to gather once a month, share each other's company and have a good time. That's what really makes the railroad rewarding far beyond any construction or operating just by itself.



J. Fugate

THE JOY OF SHARING

One of my greatest joys in the hobby has been sharing my Siskiyou Line layout through operating sessions. But this wasn't always so.

Believe it or not, I'm basically an introvert and it would be very easy for me to be a loner in the hobby. But early on in my hobby journey, I resolved to not become a lone model railroader. I wanted to force myself to come out of my shell, so I determined if I was going to build a model railroad, I would make sharing the layout through operating sessions and through layout tours a priority.

Like Rob, I have to say the social aspect of sharing the hobby through my layout operating sessions has become extremely satisfying for me, and I'm very thankful I made that choice to go against my loner tendencies years ago.

If you're a hobby loner, I urge you to explore becoming more social with your hobby. You may be surprised at how satisfying it can become.

Joe: So, what do you like least about this layout?

Rob: Fiddling around with wiring and crawling around under the railroad, connecting things and adding a detection circuitry for future signaling, that sort of thing. The less of that I must do the better, because I prefer working on things you can see like the rolling stock, structures, or the scenery.

Joe: Boy, I feel the same way! Given that wiring is your least favorite part of working on a layout, how do you motivate yourself to do it?

Yes, I don't like wiring because it's something that you don't see. It's not part of the finished product that's visible – but of course without solid wiring, the railroad doesn't go anywhere. But my motivation comes because if I *don't wire it* and if I *don't do a solid job* of it, I know that we're not going to have fun running trains.



10. Once the train exits the layout through the backdrop [8,9], it goes into a 2.4% grade on a helix down to these staging tracks, arriving on the right.



11. The western end of the 8th Sub runs through Lakeview west-bound toward Elko, NV and disappears into this natural rock-lined tunnel, into a helix leading down to the far end of staging shown in [10].

Joe: You nailed it. That's exactly the answer I would have given too. I'm curious, if you had this layout to do it over again, would you do anything different?

Rob: If I had to do this railroad over again, I would think about incorporating another branch line to have yet another area for some local freight operation. But overall, I don't think I would change very much. I've been so satisfied with how this has come together and how it's run that I don't see making any wholesale changes to it.

Joe: That's a good testimony to your planning and making sure you really have enough hobby history that you knew

what you wanted up front. That's important. People that start on their dream railroad when they've been in the hobby for six months, you have to ask: are you sure?

Rob: Yeah. You can't be at that point.

Joe: Why did you select the layout height that you picked?

Rob: I set the height based on experience with knowing what heights I liked. I wanted the main operating level to be around 52-53 inches based on my previous railroads and other railroads that I've operated on.

When I was still planning this project, I visited a bunch of railroads as an operator and also toured many layouts and kept



12. GP20 2007 switches the lime plant at Lakeview, a combination of scratchbuilt and kitbashed structures. The Geep has a much-modified Tyco shell on a Kato GP35 drive.



13. GP20 2008 negotiates the WP crossing of the Humboldt River just west of Palisade, Nevada. The bridge abutments and tunnel portal were scratchbuilt from photos of this location. The water is gloss Mod Podge over a painted plaster base.

track of what heights I liked. I decided on my preferred height from there and then based everything else off of that.

Joe: More testimony to getting layout experience under your belt first before committing to that dream layout project. Why did you select the grades that you have?

Rob: I picked the grades on the visible portion based on what the Western Pacific had. Their main line was bound by charter to have a grade of no worse than 1%. All of my visible mainline grades are 1% or less.

Everything else is sort of established by necessity. There is a grade in and out of the staging yard on either end of the railroad that's about 2.4% through helixes. I based that on the size of the helix, the diameter and the spacing between the levels dictated 2.4%.

And that's proven to be usable on a previous railroad –we had a couple of helixes is that were 2.4%. So, I knew that would work.

Joe: There you go talking about getting experience first so you know what works and what doesn't, you're not just guessing! We could just put some track stats in a box on



14. Here I am looking down at the Raft River branch running through Cedar Creek canyon [15]. Rob has several scenes where he makes you look down into the scene to see the track – a less often modeled technique that definitely adds interest to the run.

your track plan, but I'd like to gain further insights. Give us some details about your trackwork.

Rob: I have about 210 feet of main line on the visible portion of the railroad between when you enter and leave staging. There's probably another 200 feet or so in hidden trackage as part of the staging yards under the railroad.

The track selection for the railroad varies from Micro Engineering to Shinohara to Atlas. I received quite a lot of Atlas track for a price that I couldn't pass up – and I used that for my main classification yard. A friend was rebuilding his railroad from Atlas Code 83 down to Shinohara 70. I got a really good deal on the Atlas 83 and used that in my main yard.

I also had plenty of other brands of track left over from prior railroads. Some of the track in here has gone through two and three layouts.

I really like the detail of Micro Engineering track, so I use a lot of that and I like Micro Engineering turnouts quite a bit too. But I used whatever I had and whatever I could get hold of, because I'm kind of cheap! I'll use whatever is there if it's in good shape and works.

Because of that, I have turnouts from probably most of the manufacturers and there are several hand laid turnouts, so I have a little of everything. This layout has quite a lot of turnouts in total, I've lost count of exactly how many.

Joe: And what about your minimum radius? I suspect you have a different minimum radius for the main versus the branches.

Rob: Yes, the radius does vary a little bit between the branch and the main line. The main line needed a 29 inch minimum radius to

fit into the room. I would've liked to have it just a little bit bigger. But 29 inches got me in and out of the staging helix the way I needed them to.

On the visible portion of the railroad, it's about 30 inches for the main line, although I try to use curves that are as large as possible per the space available. On the branch line, the minimum radius had to drop to 26 inches, although all the 26-inch curves are in hidden tracks. The visible portions of the branch line use a considerably larger radius.

On the mainline radius, I try to hide the minimum radius curves inside tunnels or in cuts so that they aren't too obvious.



15. Here is the Raft River branch (lower level) through Cedar Creek canyon scene. Rob has very effectively created the sense of the Great Basin's "big empty" remote landscape with his scenery.

Joe: This layout stands out with regard to its scenery. Your barren Great Basin scenery is quite unique and it's also quite well done. What's your secret to well done model railroad scenery?

Rob: My general philosophy on doing scenery is to create something that's aesthetically pleasing and that makes it feel like you're standing in the middle of the great outdoors doing some railfanning or going on a hike.

I like to have scenery that captures the right color, texture, or shape of what I'm used to seeing in the real world. I pay a lot of attention to photographs and to my experiences out railfanning



J. Fugate

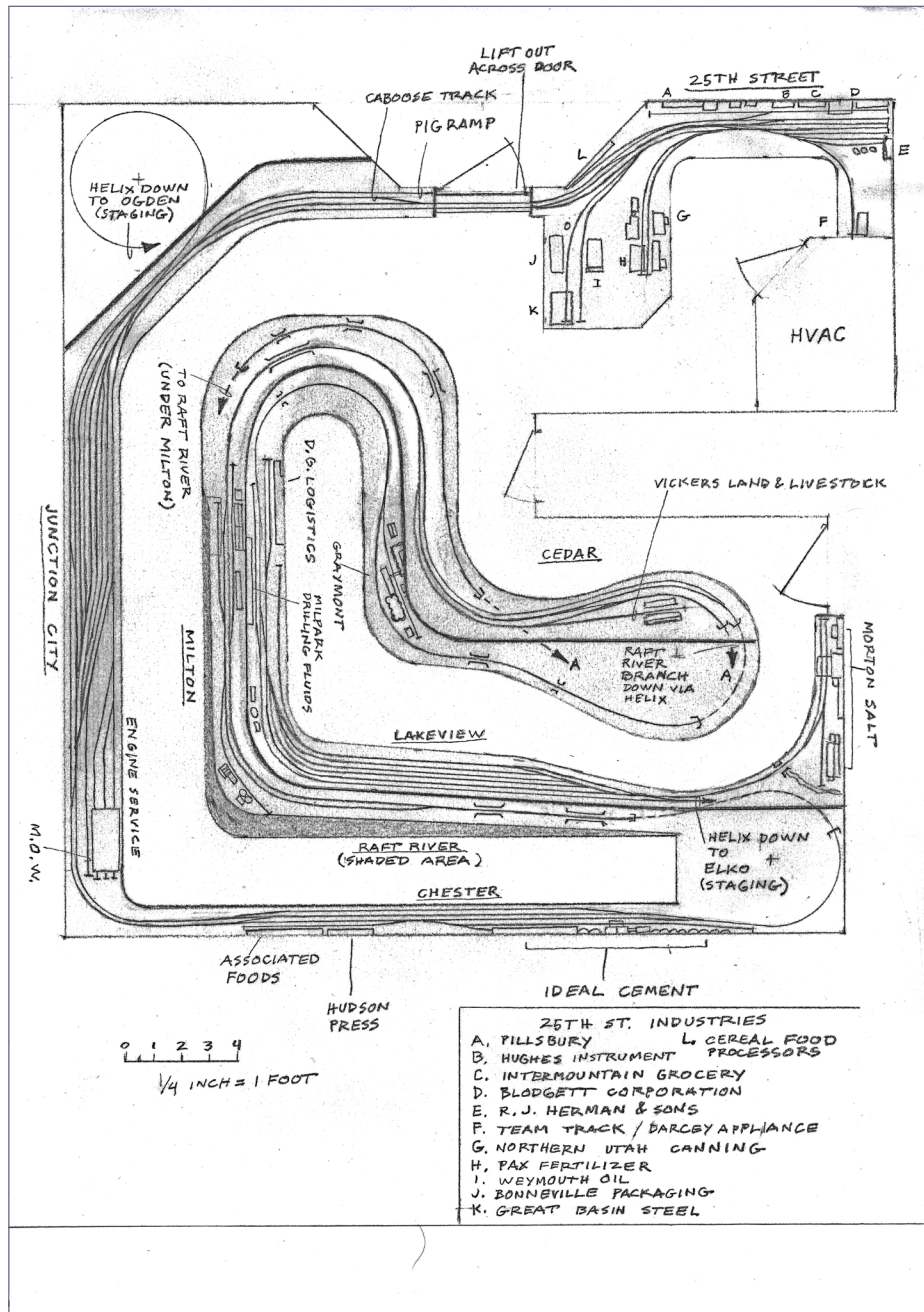
THE IMPORTANCE OF SCENERY REFERENCE PHOTOS

Rob talks about how he always uses reference photos for his scenery work. Pay attention to this, because it's the secret to more realistic scenery! This is one of the reasons Rob's scenery looks so believable.

Most of us wouldn't think of building a model locomotive or piece of rolling stock without some reference photos, and modeling scenery should be no different.

Otherwise, we tend to model from our mind's eye. Unless you're a very accomplished 3D scenery modeler already, imaginary scenery tends to look just like what it is: totally made up. Realism tends to suffer and such totally made up scenery tends to look "fake."

Thanks to the internet, it's pretty easy to find great scenery photos from just about any place in the world online. As long as the scenes are from the region you're modeling, the photos don't even need to have a railroad in them. Just duplicate the colors, forms, and textures you are seeing carefully and your model railroad scenery will look much more realistic.



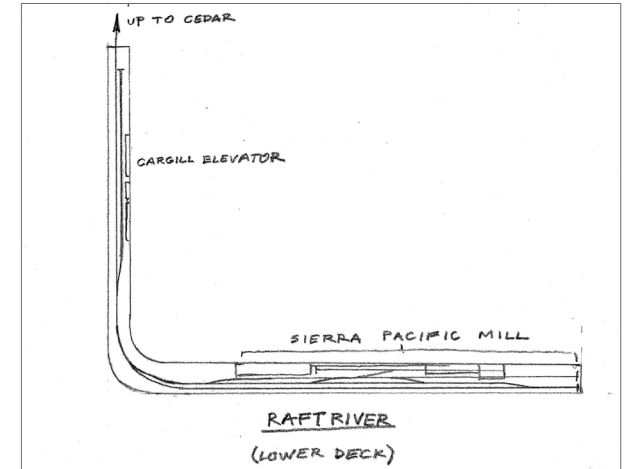
the real thing. I also want to know I'm creating something that's going to work harmoniously with the trains.

Joe: What methods do you use to do your scenery?

Rob: I'm using partly conventional methods and partly some of my own thing. I use a base of cardboard strips that's held together with hot glue in most areas. And on top of that, I use some fine mesh drywall tape that's held down with hot glue. For wider expanses, I'll often use bridal veil lace or cheesecloth that can be stretched out and fill a large expanse in a hurry. Again, that's hot glued down.

16. (Left) Rob Spangler's Western Pacific 8th Subdivision track plan, main level.

17. (Right) Rob Spangler's Western Pacific 8th Subdivision track plan, Raft River branch (lower level).



J. Fugate

REMEMBERING THE HUMAN ELEMENT

Sometimes we can make things so polished and slick that we lose the organic human element. One thing I always aim to do with MRH, and one reason I deliberately included *Hobbyist* in the name, has been so we never forget it's the human element that gives the hobby some of its most fascinating depth.

I like Rob's neatly hand-drawn track plans so much that I decided to do the MRH thing and make the hobbyist prominent. Enjoy these great plans straight from Rob's own hand! The human touch is very much alive at MRH.

Once those are attached, I brush coats of 20-minute casting plaster or similar type of plaster. Brush a few coats on until it gets good and solid. Then I carve rocks and add a final texture.

To finish off the scenery, I start with a base layer of fine sand. I use a paint brush to apply diluted white glue, 50-50, and coat that with some fine sand. Usually it takes a couple of coats to completely cover the painted plaster.

On top of that, I usually add a layer of fine ground foam as a base for the last layer of ground cover, which is usually static grass from Silflor, Noch and other brands. I've found that using the ground foam *under* the static grass helps eliminate the need to totally cover everything with the static fibers and helps hold down cost.



18. Rob has masterfully blended the 3D layout scenery with his 2D painted backdrop. Only with careful study can you spot exactly where the backdrop starts. For a broader view, see [19].

Textures that go on top of this include small rocks, other types of foam to represent bushes like sagebrush and so on. I make trees from Super Tree material and add torn up scrub pads as sagebrush.

The sagebrush, for the most part, I make with paint stripping pads. They come as a gray fibrous material, like pot scrubbers, but they're just a coarser texture. These can be coated with ground foam to represent sagebrush. I also use larger pieces of the pad for other bushes as well.

Because I'm modeling the Great Basin, there are a lot of junipers and other small scrub conifers. Those can be represented nicely with things like small pieces of poly fiber material that are turned into puff balls, similar to what the eastern modelers use for deciduous forests.

But small trees like junipers look a lot like those puff balls. They get very dense and adding a fine texture ground foam on top of poly fiber represents that denseness well.

Joe: Talk a little bit about using the dirt and trying to get the right color. I know a lot of people think, oh, I'll just go to the real location and get some dirt and then slap it down on the layout. That never works because it's usually too dark once you get it inside.

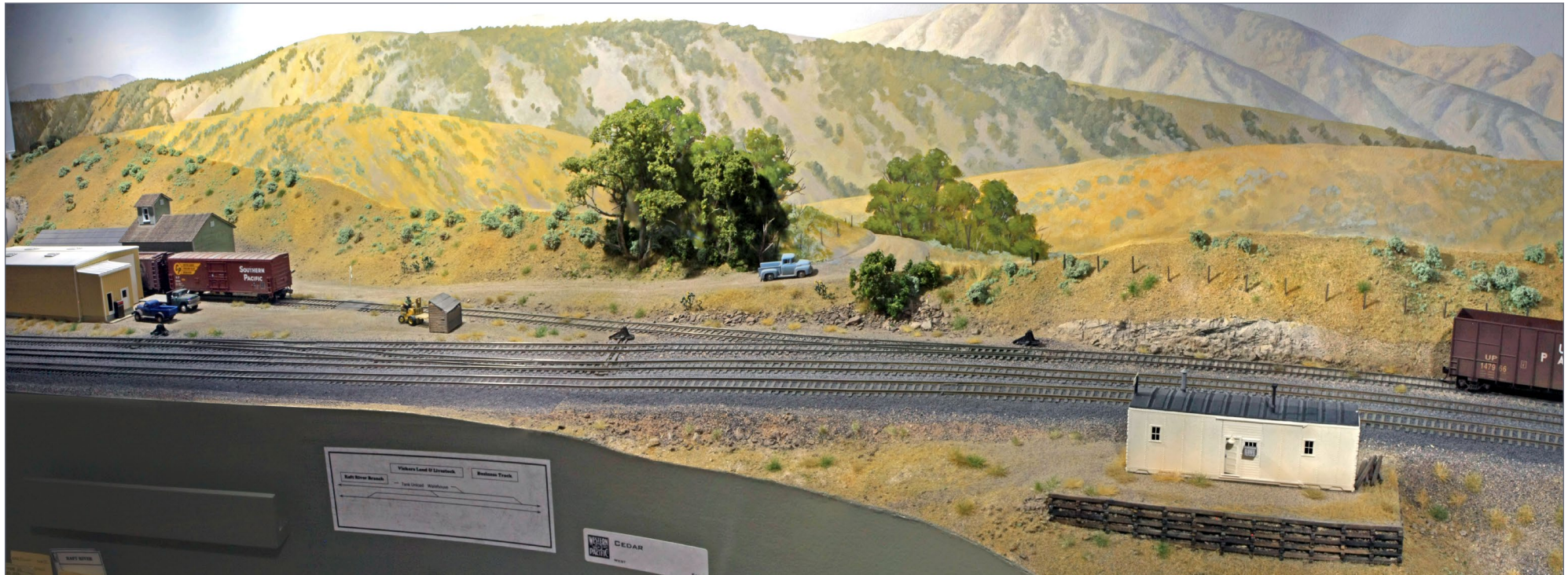
Rob: Not only that, but one of the pitfalls of using natural materials is that it can change color when you hit it with water and glue. Different types of rock and dirt can have varying effects from the glue that you may not anticipate when you first pick the material out of nature. It'll look perfect outside.

Then once you get under indoor light and get it wet, it totally changes on you. For my hillsides I use a lot of natural dirt that's been colored with acrylic paint. I use the same types of paint I use to color the rocks I carve out of the plaster.

I use the same paint to color the natural dirt that goes on top of the rocks to get them to match. You really don't need a very close color match with the natural dirt. The paint I put on top of it looks like highlights and the original darker color can just stay behind in the shadows. That gives me almost no perceptible difference in color after a little dry brushing with acrylic.

Joe: Wow, that's clever! You mentioned doing rockwork, tells us more about that.

Rob: Rock work on the layout follows methods I've been using since I was a kid. I've found I really like carving rocks using artists tools and something like a one-inch putty knife. I'll mix a batch of a plaster that's about two parts 20 minute casting plaster to one part water and maybe throw a handful of a playground sand into it to add some texture.



Then in the roughly 20 minutes of working time, I can carve quite a lot of rock work, so the process goes pretty fast. I have reference photos that look like the area I'm trying to model, and I carve away everything that "doesn't look like a rock." If I don't like it, I can always chop it off and try again. It's very forgiving.

But usually I can get results that are predictable. After you do it for a little while, you get to where you understand exactly what it's going to look like when it's finished and just carve away until it's done.

19. Here is a wider view of Cedar. In the center is the scene shown in [17]. You really feel like you're out in the middle of the Utah high mountain desert with scenes like this!

Joe: You mentioned earlier concerns about blending the 3D scenery into the 2D backdrop. What's your approach to blending the scenery with the backdrop on this layout?

Rob: Because of the lack of foreground vegetation on this railroad, it was a challenge doing the backdrop to 3D scenery transition so it didn't have some sort of a jarring crack along it. I've noticed on my prior railroads as well as other layouts I've worked on that the backdrop to 3D scenery transition can end



20. Today's Raft River Turn has finished switching at its namesake town at the end of the branch and has started back upgrade toward the junction at Cedar. Here it crosses Greasewood Draw, and will later negotiate the steel trestle in the background, on the main between the towns of Cedar and Milton.



21. Canyon Road crosses the tracks near the west end of the siding at Milton. The crew of the Milton Turn often grab some chow from the convenience mart next to the depot. Rob scratchbuilt this structure, and for the road he used sanded tile grout weathered with acrylics.

up cracking due to a differential expansion and contraction of the materials.

I have found that using a heavy bead of painter's caulk in between the two at the joint will expand and contract and avoid a crack. That works quite well with painted backdrops like what I do – but not so well with backdrops that are made out of a printed material like photographs.

Joe: That's great. This layout also has some nice-looking streams on it – how did you model those?

Rob: For modeling water on this railroad I have used a couple different techniques. The creek on the branch is casting resin epoxy. I used a couple coats of a two-part epoxy resin colored with some Testors military paint; I think I used olive drab.

I built up a few dams here and there to create a stair-step effect on the stream and that also helped slow down the creep of the resin as it goes downhill. I make the dams out of either clear caulk material or acrylic gel medium that can be shaped easily. They both dry clear and once they're dry I add the resin.

I make the whitewater effects by painting them on top with more acrylic paint. I'll use a white or light gray and drybrush it into place. I'll also use washes until I get an effect I like. I always have plenty of photographs of real streams for reference so I can match the effects.

One of the things that I don't like about epoxy is that it dries with a glassy sheen to it that does not look like moving water at all. I prefer to coat the top of the epoxy with a gloss material like Mod Podge gloss or acrylic gloss medium. I prefer the Mod Podge because it has fewer bubbles in it as you work it.

I stipple this in place with a cheap paint brush and allow it to dry. This gets rid of the glassy sheen of the epoxy and gives me a finished stream. It looks like it's moving. [MRH covered Rob's water making process in the February 2019 MRH, see: mrhmag.com/magazine/mrh2019-02/modeling-water.]

In some areas where I don't have the thickness available to pour epoxy, I just apply the Mod Podge directly over painted plaster that's been sanded smooth and painted some creek water colors. And that can be quite effective as well and doesn't require nearly the same depth of material.



22. Here's the grade crossing just railroad west of Graymont. This road just looks like it's been out in the desert and subjected to the snowy winters and hot summer sun found in Utah.

Joe: Okay, we've talked about the water, what about what goes over the water – how are you doing your bridges?

Rob: Bridges on this railroad, like many things in here, come from a variety of sources. I scratchbuild my wood trestles from stripwood. I start with plans that I've found in various magazines and books on prototype bridges.

I handlay the track on top of the bridges with whatever rail is used for the flextrack on either side. Then I'll add guard rails, usually of the next code of rail smaller than the running rails, so they don't get shined up when I clean the track.

Some of the larger, more modern bridges in here I've made with styrene. The tall trestle that you see I kitbashed from Micro

Engineering and Central Valley bridge components. I have some other plastic bridges I also made from Micro Engineering parts.

Depending on the prototype of the bridge, it may have wooden abutments scratchbuilt from stripwood or it might have abutments made out of styrene. I use the same technique for those that I do with the tunnel portals and a guesstimate from photographs as to proportions.

Joe: You mentioned tunnel portals. How are you doing those?



23. This tunnel portal on the Raft River branch illustrates a seldom modeled but often seen feature of many western tunnel portals – an exposed liner. This is yet another scenic feature that sets Rob's layout apart from other layouts depicting the western US.

Rob: I scratchbuilt the portals on the railroad to match prototype photos. The Western Pacific had some unique portals in its route across northern Nevada and into California. Many of them had exposed liners instead of having the portal recessed into the mountain and have wing walls coming out of it.

To make the portals themselves, I usually scratchbuild them from styrene sheet. For the exposed liner I usually wrap styrene sheet around something like a piece of drainpipe, PVC, or abs pipe. I'll cut the pipe in half the long way on a table saw and then wrap it in styrene and attach that to the back of the portal.

The exposed liners are something that many visitors comment on. They haven't seen that modeled before. But as they've driven around railfanning in my part of the country, they've seen plenty of those portals. They appreciate finally seeing them modeled.

Joe: Modeling the Great Basin is rarely seen. Any special challenges with modeling that kind of less typical scenery?

Rob: Great Basin scenery like I've done is something that I've very rarely seen on a model railroad. It's one of the things that attracted me – it allows me to do something unique. A lot of railroads set in the west tend to be in the Rocky Mountains or the Pacific Northwest – areas that are green and have a lot of trees.

The Great Basin is something that isn't overdone and ripe for exploitation. So, let's create something that's pleasing to look at and give people a different viewing experience from what they see when they're operating and viewing other railroads.

I also get a lot of personal satisfaction out of doing things that are different from what I've done before. I haven't really done a whole lot of Great Basin scenery modeling in the past, so I enjoy the challenge.

Joe: I notice you make good use of looking down into the scene, such as you did with the salt flat bluffs on one part of your layout.

Rob: One of the things that visitors notice about this railroad being a little different is that it has a number of areas where you *look down* into the scene. The usual model railroad advice is to start at the bottom of a hill and look upward into the scene.

But I noticed that when I'm out railfanning, often as not, I'm standing on top of a hill *looking down* at the trains. I wanted to have several areas on the Eighth Subdivision where it created that effect. It also creates what I call a "visual event."



24. Eastbound symbol WPX leaves Lakeview en route to interchange with the Union Pacific. The WP power will stay with the train as far as North Platte. Salt flats extend toward the horizon here at the edge of the Great Salt Lake desert. For a wider panoramic view of this scene, see [25].

I like having the train go in and out behind buildings, and behind hills. There's a prominent bluff that is alongside the Western Pacific near West Wendover in Nevada and there are a lot of railfan vantage points that are behind that hill, and you see the trains rounding a curve behind it.

I wanted to have that effect over by my town of Lakeview. So, I created a scene specifically to give me the viewpoint around that hill. The fascia and the aisleway are intended to be above the trains and you look down across the tracks and then into the distance toward the salt flats just like you do on the prototype.

With this scene on my layout, I get the feeling I'm watching trains come around the hill at Wendover just like when railfanning there.

Joe: Your concept of visual events is interesting. Tell us more about that.

Rob: I make the run feel longer by creating more visual events along the run. On the prototype, the trains running go in front of some things and behind other things. When the trains go behind things that block your view, the run seem just a little bit longer. When the train disappears for a bit and then it reappears and you feel like you've traveled a little more distance maybe than you really have.

This railroad does not have a huge main line compared to some of the others where I operate. Adding visual events in the form of tunnels, hills that you go behind, industries, farms, and other things along the track that you go behind helps the operator feel like there's more going with the trip than there really is. It catches your eye and spend a moment lingering on that part of the scene.

It also feels like you've traveled a greater distance between point A and point B and I like the feel it adds to the operation.

Joe: Any other clever little scenery tricks you use?

Rob: I build up ground contours sometimes without using plaster. I will make railroad embankments with just natural scenery materials instead of using a foundation of plaster. For example, in an area with a fill I may add a little bit of plaster running up to the bottom of it and then build the rest of it up from rocks and dirt giving a natural shape to it.

That approach creates exactly the right contour and slope without having to guess what the plaster is going to do. And it lets me create ditches easily. I can create the feel of multiple layers of ballast, cinder fill, and so on that the prototype piles up over the years.

I've made frequent use of this around the railroad with natural materials. You may find out that this retaining wall is there to actually hold back real material instead of just for looks. That helps the retaining walls, portal wings, and so on feel like they're integral to the scene.



One of my cost-saving measures is making handmade static grass tufts. You can see a lot of them in places, using various different colors and sizes. I found the technique online from the old Jimmy Simmons' Monster Model Works site that explained how to make static grass tufts using nonstick aluminum foil, canopy glue, and static grass.

I found you can make these by the thousands relatively cheap and they really add a lot of nice texture to the layout. They also help establish some of the color and texture that the Great Basin scenery has that I was going for.

I found that they are a lot of fun to do and I even had one of my kids help me do them. I just put a few thousand blobs of glue on some nonstick foil and go to town with the static grass applicator.

25. This panoramic view shows the wider location of the salt flats scene approaching Lakeview in [24]. We don't recall ever seeing anyone portray the Utah salt flats on a model railroad before, so bravo to Rob for blazing this scenic trail. Nicely done!

Sometimes on work nights when we have the group of guys over, handing somebody a piece of foil and asking for a few hundred tufts gives somebody something to do for a while. It's fun way to get other people involved in the railroad with a rewarding activity.

Joe: I'm curious, what control system you use and why?

Rob: I use NCE, North Coast Engineering. I had started in command control with Dynatrol and eventually that became a wave of the past. So, I moved up to a digital system from Keith Gutierrez, the Rail Command system.



26. Cedar Creek canyon is a favorite railfan haunt on the Raft River branch. Rob carved the rock cliffs and modeled the fill using real dirt and rock, dry-brushed with the same paint as the plaster cliffs. Rob modeled the creek using tinted epoxy resin with acrylic gel rapids and gloss Mod Podge ripples. For more see the February 2019 *MRH*.

Eventually Rail Command got to be old technology as well and it became hard to get parts. On my previous railroad we had some throttles fail right in the very last op session. I decided to finally give up on Rail Command and move to DCC.

So again, from my travels operating on various railroads in other parts of the country, I decided that I liked NCE. I liked how its cabs felt. I liked how the radio throttles worked and it seemed to be simple and intuitive to use. I decided on NCE before this railroad started construction and I haven't regretted it. I really enjoy NCE.

Joe: I love my NCE system too. Do you use NCE decoders or something else?

Rob: I initially standardized on Digitrax decoders and later found out that I don't like the operation with Digitrax decoders quite as well as some of the other types – at least for my preferred style of operations.

So yes, I've gravitated toward NCE decoders. I especially like the motor kick rate adjustment that they have, which is unique to NCE. They seem to respond the way that I want the decoder to respond.

But lately, I've also started using TCS decoders, especially the ones with the built-in Keep Alive™. I've also added stay-alive from various manufacturers to my NCE decoders so I can get trouble-free operation. But I'm very impressed with TCS and plan to add more of those in the future.

Joe: Since I'm tearing down my old layout and building a new TOMA-based one, I'm also upgrading my whole fleet with stay-alives. The TCS mother boards are a great option and one I plan to use often.

Rob: They are *really nice*. I don't have very many of them yet, but the ones I have, I really like.

Joe: I like how they make clever use of space with those capacitors and you don't have to worry about finding space for both a decoder *and* a keep-alive. What are your thoughts on layout size and this layout – can a layout be too large?

Rob: In my way of thinking, it depends on what you want to do. I think an overly large and overly complicated railroad is something *I would not want* to attempt. This railroad is approximately 30 feet square and a lot of it is double deck, so it counts as pretty large by most people's standards, I guess.



27. Rob is big on what he calls “fit and finish” for the layout. The layout features a neatly finished “sage green” fascia, with many handy operation-oriented additions such as the car card sorting rail shown here.

This layout is also moderately complex. I wouldn't mind this railroad being much larger than this, but the way I would do it would not add to the complexity. I would use the space to have more open scenery areas between towns, maybe runs of several scale miles between towns.

I wouldn't mind having a larger railroad if done this way, and I don't think it would take that much more cost or energy to build. It would stay very simple with the same number of busy areas.

Joe: That's exactly right. The complexity is really where you have towns and turnouts. If you just added more rural trackage on a narrow shelf between towns, you could double the size of the railroad and it wouldn't take that much longer to build or cost that much more money to do other than the cost of the space. So, you talked about operating sessions earlier, tell me more about those op sessions.

Rob: Operating sessions are the whole reason for this railroad being here. I try to host a session about once a month and I've hosted many a session for visitors from all over the country. I enjoy that.

We try to emphasize having fun over trying to be 100% prototypical with everything. We realize these are just toy trains and first of all we want to have a good time. The regular operating sessions form the whole reason for this railroad and the enjoyment of each other's company is the even bigger reason behind it all.

Joe: Great answer! I think operations gets a bad rap when people focus too much on process minutia and not enough on the fun. When you operate, are you the engineer inside the loco cab, or are you on the outside railfanning?

Rob: When I operate, I tend to be the staging guy setting up the session or managing staging during the session. The staging role gives me a chance to control the flow of traffic on and off the visible portion of the railroad. I get to manage the traffic flow with what cars go to what destinations.

But if someone volunteers to manage staging during the session, then I like to be a railfan and roving dispatcher. We can operate by timetable and train order, which we do sometimes.

But I have found during an operating session, I get a lot of “come take a look at this” or “come see what’s going on here.” Or, “give me an interpretation of what to do here” and that means it’s hard



28. A boxcar of bagged feed awaits unloading at the Cenex warehouse in Milton. Milton was inspired by numerous farm towns in Utah and Idaho. The concrete M on the hill above town is typical of many such geoglyphs in the region – nice touch, Rob!

for me to dispatch, give out the train orders, take the OS's and so on and go be interactive with the operators on the layout too.

I tend to wander around the room if I'm not doing staging and I'll railfan and help people out here and there. Or if the railroad is in a stage where I don't need to do a whole lot, I just like to sit back and watch it all happen

Joe: Watch your creation come to life.

Rob: Watching my creation come to life is very rewarding. It's one of the most fun things that I can experience as a layout owner.

Joe: How sold are you on HO and would you ever consider doing a layout in a different scale or even a different gauge?

Rob: I've been in HO since I started modeling, but I've had interest in other scales here and there. I've operated on some very nice railroads and in N scale, O scale, and S scale. I've given passing thought to modeling in other scales.

I have a couple of good friends that do Sn3 and I like Sn3. I've also given some passing thought to maybe doing something totally freelance, like maybe, On30. Maybe if I had less space, like I had to leave this house and downsize, then something like N scale might be appealing.

But for the most part I really like the compromise in size and operability that HO has to offer.

We also don't need to do any speed matching. When you put a module in an engine, you do a stall test as part of the process, which lasts approximately three seconds, and that registers the milliamp draw for that loco.

Joe: What's your philosophy on doing a layout well, what's your highest criteria?

Rob: I want something that is solidly built, that's aesthetically pleasing, something that creates a pleasant space for the operator and the visitor to be in. I want something that I'm proud to have as part of my home – I want the railroad to look like another finished part of the home.

When you walk in the layout room, it needs to look no different than any other part of the house. It just has a railroad in it. I like to build everything to a high level of fit and finish – finish the fascia, finish the backdrops – finish everything to the same level so that it looks like a professional installation.

Joe: You obviously have a lot of good layout experience under your belt. I'm curious, what "expert" advice would you give to someone just starting out?

Rob: Read as much as you can. That's more than just asking a few questions in an online forum. Get some books. Watch videos by people that really know what they're doing. Seek out construction techniques that produce really good results. Look at scenery, track, laying, benchwork – everything.

Learn as much as you can – approach it like you were building your own house. We wouldn't think of building a house just by slapping a few things together and hoping that it works.

We know that over time, a house that's not built properly is not going to survive. On a model railroad, I think we want to see something rise out of nothing quickly. It's easy to avoid the steps necessary to doing a good job if we're trying to get there too fast.

So, take your time and learn.

Joe: What do you hope convention goers get out of coming to this layout?

Rob: I hope they feel like they're railfanning Utah in the '70s and '80s. I want them to feel like they're getting something worth their time to come and visit. My hope is they walk out of here feeling like it was a good experience.

I will be hosting some operating sessions, so I hope some get a lot out of that operating experience, too.

As long as you walk out of the Eighth Sub with a smile on your face, I'm good. ✓

ROB SPANGLER



Rob has been a model railroader for over 40 years, since he received a train set at age six. He has been modeling the Western Pacific since 1989.

In addition to trains, Rob enjoys various activities like gardening, photography, and cheering for his daughters Lanie and Lizzie at their karate tournaments.

Rob and his wife Talene have been married since 1997. ■



Also on TMTV!





Wireless video from an RDC-2

Model Railroad Hobbyist | July 2019 | #113



RATE THIS ARTICLE

BRIAN PICKERING: How to get a unique view of your layout ...

THERE ARE SEVERAL REASONS YOU MIGHT WANT TO have a video camera mounted in your train.

Some people enjoy the “engineer’s view” while running their train. Others want to get a train’s-eye view of their scenery.

In the case of our modular railroad club, the Seattle, Pacific and Eastern group, we enjoy the audience interaction that comes

WIRELESS VIDEO FROM AN RDC-2 | 2

1. Assembled RDC-2 with a track-level view of Brian’s workbench on the display.

from having a camera running around the layout. Adults and children alike are fascinated by the train-eye view.

Because of this, we long had a camera mounted in a dummy unit that would be pushed around the layout by another locomotive. This always created a few anachronisms, though: a Santa Fe F9 unit being pushed by a Northern Pacific 4-6-0 or Canadian National Dash-9 unit might be entertaining to the audience, but always struck us as somewhat odd.

Furthermore, the camera was powered by a 9V battery, which generally lasted only 30-40 minutes before needing to be

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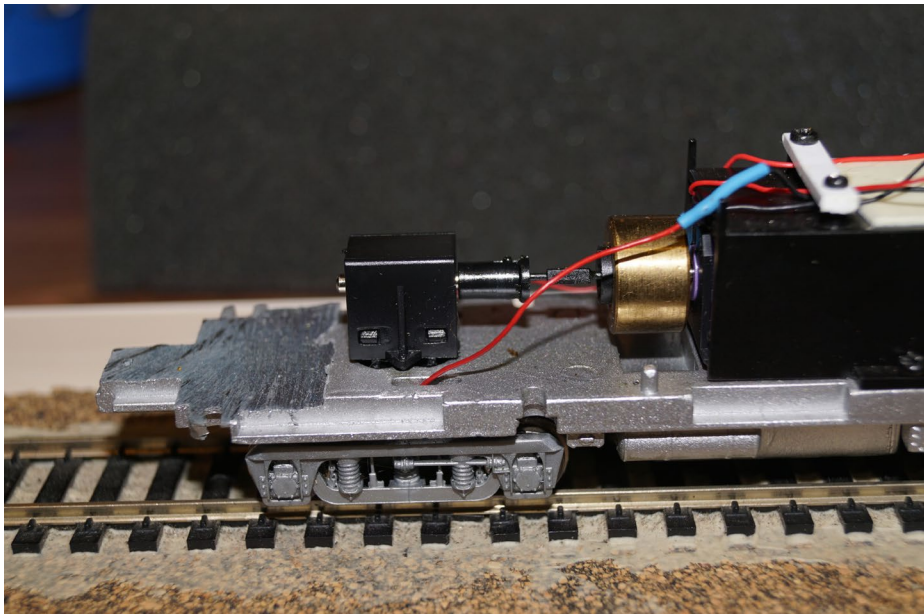
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recharged. As the camera view started showing even more static than normal, I started to look at possibilities for a replacement.

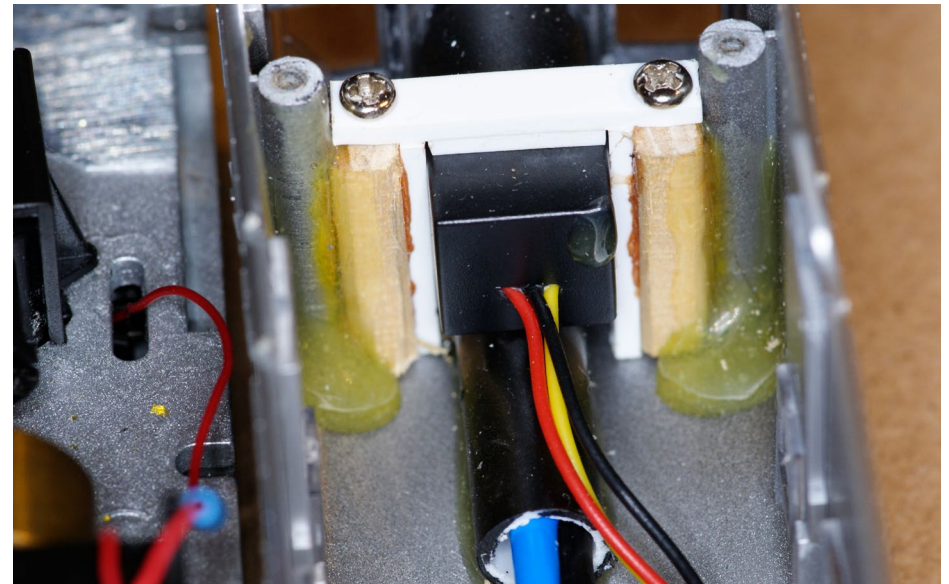
Getting a better camera

Discussions with co-workers led me to cameras and transmitters that are used by first-person flyers of model airplanes and drones. I eventually settled on an 8-channel, 200 mW, 5.8 GHz transmitter/receiver pair, along with a tiny CMOS color video camera.

This would be a significant upgrade from the old black-and-white camera we were using, and would provide plenty of range for any modular layout we might conceivably build thanks to this camera's up-to-200m line-of-sight transmission range.



2. Frame of Life-Like RDC-2 showing cut-out area.



3. Detail showing mounting of camera and front light.

While I awaited their delivery from China (there are now similar items available for next-day delivery from Amazon), I considered what I might mount the camera in.

I was hoping to create a unit that was self-contained, and then realized that I had a reasonable candidate in an undecorated Life-Like Proto 1000 RDC-2. Only the front truck is powered, but both trucks pick up current, and once I had removed the passenger seats, the preparation was almost complete.

After the video equipment arrived in the mail, I realized that I would need to cut down the front of the chassis to make room for the camera. Once that was done, the tiny camera fit perfectly behind the center window [2].

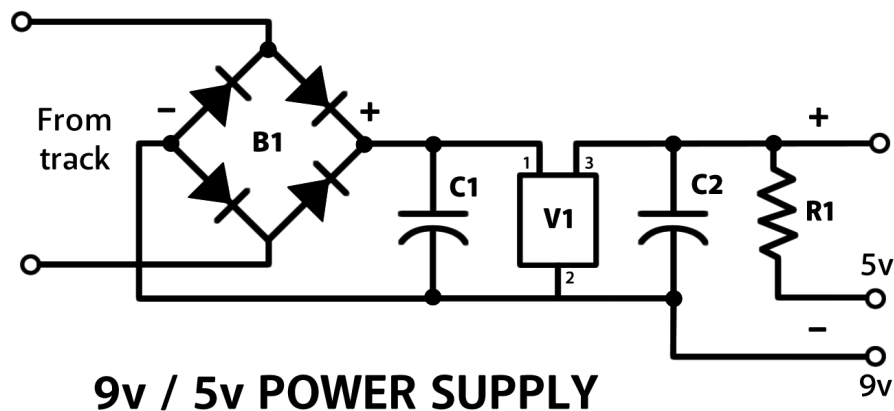
I mounted the camera by gluing some basswood in place on either side of where the camera would sit, two pieces of

Evergreen strip to shim to a firm, but not tight, fit. Finally, it was held in place by a piece of Evergreen strip across the camera [3].

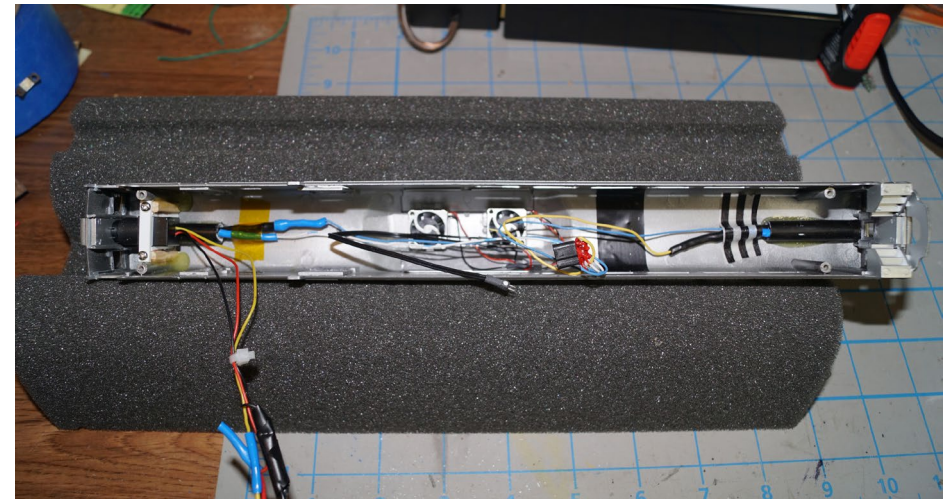
To power the transmitter and camera, I needed a constant 9V DC. Initially, I built a simple circuit using an LM317 voltage regulator, but after a few shows, we noticed the camera would shut down after half an hour or so. At that time, the RDC-2 also was noticeably warm.

During a period where I was incapacitated by health issues, another club member took over and made three changes. First, he replaced the LM317 circuit with one based on a far more efficient V7809-1000 regulator. The resulting circuit, including bridge rectifier and filter capacitors, is shown in [4].

Second, he removed the windows along the side of the passenger compartment to allow more cooling airflow. Finally, he took something I had intended as a joke, and ran with it: he drilled out the cooling fans in the roof of the RDC, installed etched stainless steel grilles, and mounted two tiny fans inside to push even more air through.



4. Schematic of 9V / 5V power supply.



5. Detail showing mounting of camera and front light.

The fans require 5V DC, so we used a dropping resistor, rather than adding yet another power conversion circuit.

Since our club uses DCC exclusively, I installed a Digitrax DH-123 decoder to control the RDC-2.

To light the forward and reverse lights, I installed a length of Evergreen tubing behind the transparent lenses using Walther's Goo, then soldered bright-white LEDs and dropping resistors onto the appropriate outputs. Small connectors were used to give some freedom when working on the frame, providing power to the LEDs and ventilation fans [5].

Once assembled, and upgraded with the improved power supply [6], we were pleased that we had better-quality video, and could run the car for hours at a time.

As shown in [6], all the electronics were mounted to the RDC chassis with thick foam tape. The decoder went on top of a box that hides the motor. The transmitter (blue board) and power regulator circuit (green perf-board) replace the passenger seats.

The components of the power regulator are mounted off-center to leave room for the four-inch-long antenna. No space is wasted!

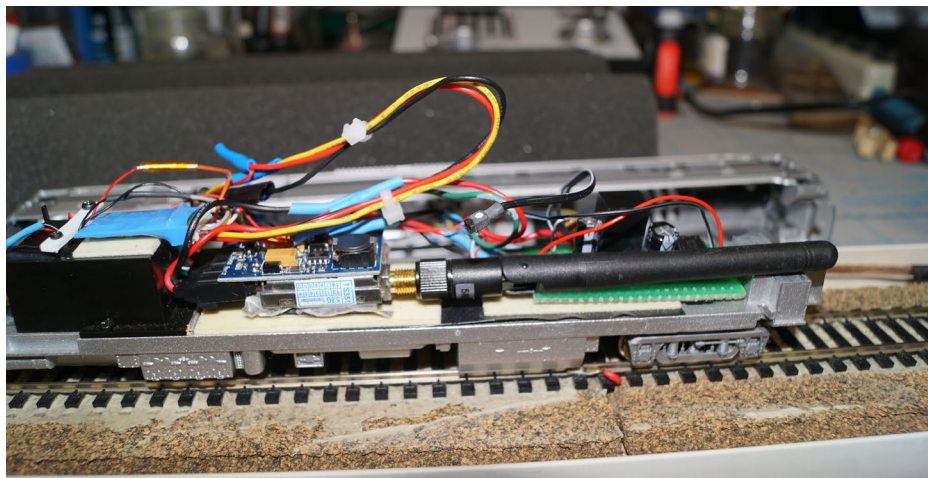
The club is still working out a best location for the receiver antenna. The aftermarket three-blade antenna gives good all-around reception, but we haven't worked out a good way to mount it. Originally, we foam-taped the receiver to the top of the monitor, but the monitor is warm enough during use that the foam tape starts to slip and slide!

In [1] you can see the receiver connected to a portable video player, but for shows, the club has a 24" flat-screen TV we set on one corner module, and the audience just loves it.

I'm toying with the idea of building another of these, just for some variety. The cameras and transmitters keep getting smaller!

Would it be possible to use a normal diesel locomotive? How about mounting one on the engineer's side of a steam locomotive cab? Looking out the back of a trailing observation car or caboose?

There are lots of possibilities! ✓



6. Frame, with decoder, transmitter, and power converter.

PARTS

Life-Like RDC-2

Digitrax DH-123 DCC Decoder

Lighting:

- Evergreen #229 Styrene tubing
- 2x T1-3/4 5mm White LED
- 2x 560-ohm resistor

Fans:

- Plano Model 474 36" Fan & Grilles
- 15x15mm super small brushless DC Fan (look on eBay for "Raspberry Pi overclock fans")

Power Supply [3]:

- B1: NTE5334 Bridge Rectifier
- V1: V7809-1000 Switching 9V Regulator
- C1, C2: 220uF, 35V Electrolytic Capacitors
- R1: 330-ohm resistor

Video:

- FPV 5.8GHz 200mW 8-CH TS351 Transmitter + RC805 AV Receiver Kit
- MC900D-V9 Mini HD 1/3" CMOS CCTV Security Surveillance FPV Camera
- ZnDiy-BRY TX-1 FPV Aerial Photo 5.8GHz RP-SMA 3-Blade / 4-Blade Antennas (DX.com)
- Sony a77ii, Sony 18-55 SAL1855, bright-white LED (info only as to what the author used)



BRIAN PICKERING



Brian Pickering spends his days as an IT security engineer with The Walt Disney Company.

On the weekends, though, he lets his hair down (what's left of it, anyway) to play with trains, ride bicycles, go skiing or hiking, and to spend time with his wife and son.

Brian also works with the Boy Scouts in various roles. He lives near ever-rainy Seattle, Washington. ■

Watch on



RDC video camera car
Demo layout run



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7. Brian shot this quick video of the output from this car by pointing his cell phone at the video screen. This video-of-a-video lacks detail, but it does show this car in action. The direct video looks much better in person.

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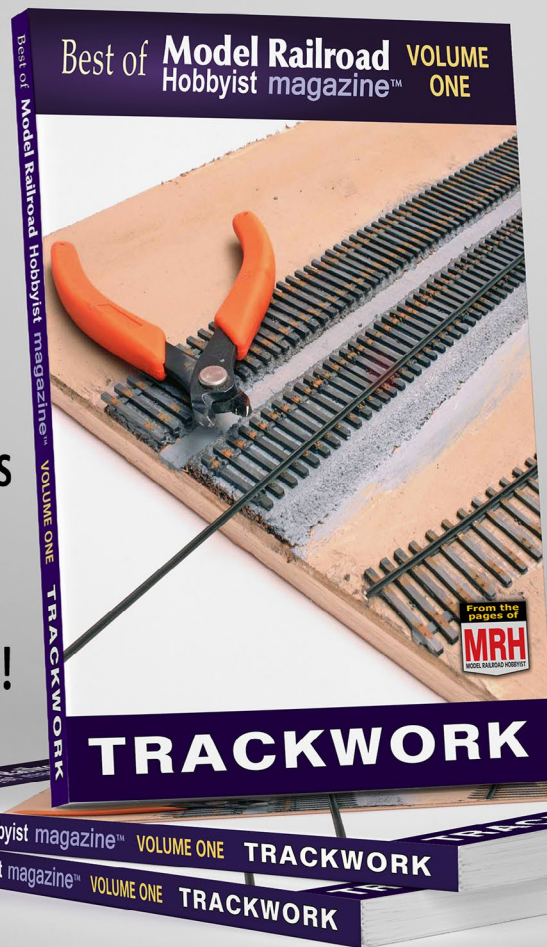


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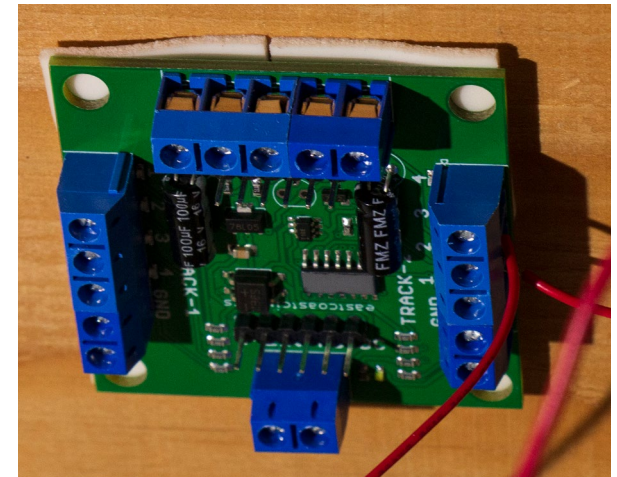
column

Model Railroad Hobbyist | July 2019 | #113

JEFF SHULTZ shows how to make the lights flash red, for only a little green ...

EAST COAST CIRCUITS HAS BEEN GAINING ATTENTION at recent big model railroad shows.

Their display features scale vehicles including emergency and utility vehicles that have had LEDs added. They also have circuits that will drive LEDs to look like a burning fire, randomly light up to six LEDs in a building, or control the stop lights at a four-way intersection.



Their latest circuit, Crossing Signal Circuit #501, is an inexpensive solution for adding grade crossing signals to your layout. It doesn't control gates and doesn't come with a bell, but it allows you to set up a simple flashing grade crossing solution that will



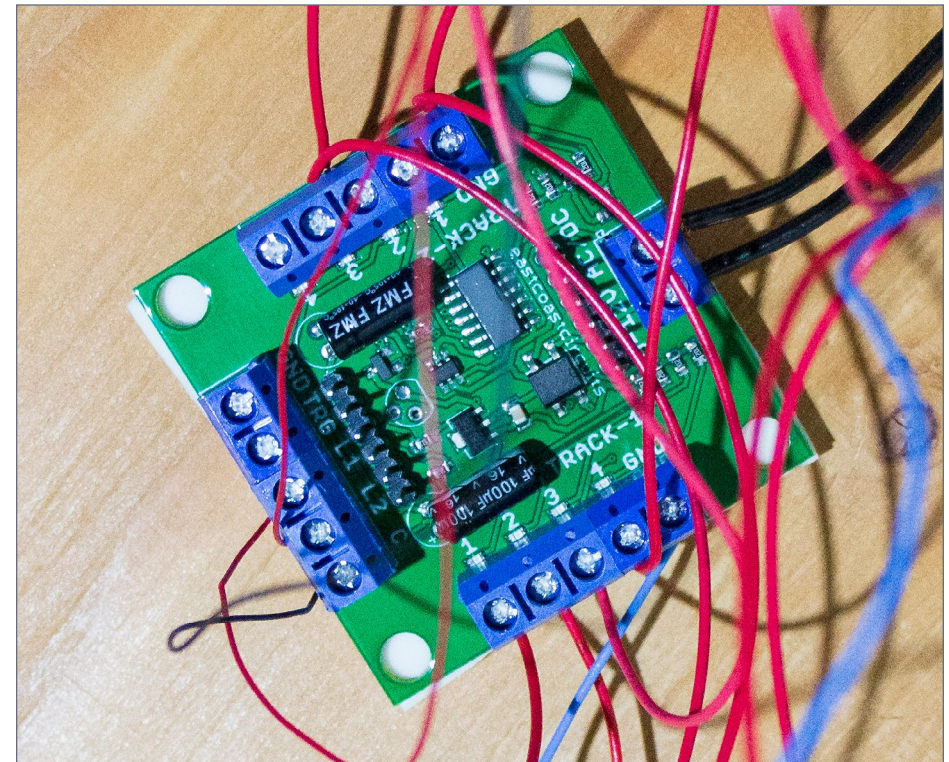
handle two tracks. No programming is required – it really is plug-and-play. It can be used with any common positive (anode) LED crossing signals.

Crossing Signal Circuit #501 comes with the crossing signal circuit board, which is about 2 inches square, and eight sensors – four with 24-inch leads and four with 12-inch leads. If longer wires are needed, 30AWG stranded wire can be attached to the ends of the supplied wires. An optional addition, not tested, is the Traffic Light Preemption System #203. It can change trackside traffic signals to block traffic when a train is passing.

I have several areas on my layout that are going to have grade crossings, so I picked one out that I thought would be appropriate for this circuit – no gates and two tracks, one of which is a main, the other a siding frequently used as an interchange track. Because of this setup I would use the sensors in two ways, normal and non-approach.

The normal setup (Track 1) has an approach sensor located some distance from the crossing (Sensor #1), a sensor close to the crossing on the same side (Sensor #2), a sensor close to the crossing on the far side (Sensor #3) and a far approach sensor (Sensor #4). In this configuration, Sensor #1 and Sensor #3 operate together to begin and end the flashing sequence, and Sensor #4 and #2 operate together in the same fashion from the other side. This was how I set up my main line. The kit comes with 2 double-sided pages of instructions, including clear drawings, to illustrate how to put this together. If you would like to read them ahead of purchase, they are available at www.eastcoastcircuits.com/PDF/Crossing%20Signal%20Circuit%20.pdf.

Since the siding (Track 2) was going to normally have cars sitting on it, I wanted to trigger the crossing signal from close to the crossing so I only used Sensors #2 and #3, just placed a bit further out from the road. To avoid false activations, the activating sensor must be blocked for two seconds. The important thing to remember is that if you cross Sensors #1 or #4 without crossing Sensors #2 or #3, such as in switching operations, after 20 seconds the crossing flashers will time out. If you cross Sensors



1. The crossing signal circuit board is 2 inches square with terminals for power, eight track sensors, LED flasher outputs, and a 3V trigger that can be used with a traffic signal pre-emption board.

#2 or #3, the only way to stop the crossing flashers is to cross the road and cover the other sensor in order to deactivate the crossing signal. If one train is in the block, triggering the lights, another train passing through on the other at the same time will not turn off the lights.

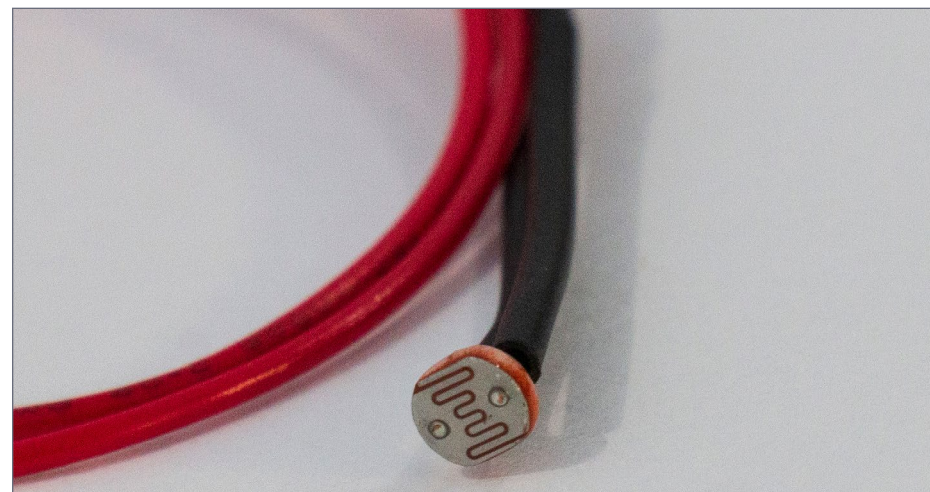
A drill with a normal 1/8-inch bit was used to drill holes between the ties where I wanted the sensors, which themselves fit between the ties. Since I have 1-inch foam on top of 3/8-inch plywood as the base of my layout, I normally will stick a small plastic coffee stirrer – the kind that look like small straws – into the holes in order to run the wires without hanging up on the foam or plywood. The sensors don't have a fixed polarity, so one wire from each sensor on a track goes into a common, and the other wire into the connector marked with its number. Both wires are the same color since it doesn't matter which wire goes to which side of the circuit. I discovered that it is simpler to connect all the common wires to a single wire and then connect the single wire to the circuit board.

Similarly, I drilled another 1/8-inch hole in the foam and plywood for the crossing signal (not included). For this article I used a Walthers Modern Single Lane Cantilever Signal. Since I'm not sure this is the signal I want in this location, and the ground level will be a bit higher than the foam in my finished scenery, I wasn't concerned with the signal sitting against the "ground" at this time.

With two sets of flashers lighting up, it shows up very nicely in the videos. Walthers simplifies the wiring by having one right wire, one left wire, and a common wire for both sets of flashers. If I were to use multiple signals (the circuit board supports up to 16 LEDs) I would connect their wires to left, right, and common terminal strips and then have a single wire from each terminal strip going to the circuit board.

Since this is a semi-temporary installation, where I am sure about the position of the sensors, but I am not sure about the circuit board location or the signal, I secured the circuit board to the plywood bottom of my layout with double-stick foam. The suggested manner of attachment is to screw it in with small nylon stand-off spacers to keep the circuit board from lying flat on whatever surface it is attached to.

At this point I had connected all the wires to their appropriate terminal connectors on the circuit board and attached a 9V DC transformer that I had sitting around – it used to power a network router. The crossing signal will accept either AC or DC between 9V and 12V, which seems to rule out hooking it up to the DCC buss for power. The circuit board calibrates all the sensors to the ambient light (they will not work in the dark), and it is ready for trains to run.



2. The included sensors are just under 3/16ths of an inch across the oval sides and 1/8th of an inch across the flat sides.



3. Two sensors implanted between the ties.

One thing that I would recommend, due to the difficulty of working upside down under a layout, is to connect jumper wires to the circuit board prior to mounting it on the bottom of the layout, and then run those jumpers to terminal strips or some other connector to the sensor, signal and power wires. Power wires should be separately attached to the underside of the layout in order to avoid stress on the circuit board connector.

I mentioned that this is only a “little green” at the top of this article, and that is because the crossing signal circuit and sensor package is \$20 at www.eastcoastcircuits.com. ✓



Video: This video consists of four parts.

Part 1: A train triggers the crossing signals on Track 1 (the back track). Approach sensors are marked with blue tipped skewers, the island sensors with yellow tipped skewers.

Part 2: A train triggers the crossing signals on Track 2. There are no distant approach sensors. The island sensors are marked with blue thumbtacks.

Part 3: A train triggers the crossing signal with the left approach sensor, then goes the other way. After 20 seconds, the signals stop on their own.

Part 4: The train on Track 2 (near track) triggers the signals and stops, while a train on Track 1 (far track) passes through. The signals continue flashing until the first train clears.





LOOK column

Model Railroad Hobbyist | July 2019 | #113

FIRST LOOK: SCALETRAINS SD40T-2 | 2

★★★★★
RATE THIS ARTICLE

power in half, which just doesn't feel right for a second generation diesel supposedly producing 3000 horsepower.

Well, ScaleTrains has finally done it – they've designed the rear truck power train to be completely out of view and the rear screens are now completely see-through [2] just like the prototype.

This particular model is ScaleTrains' Rivet Counter line, which means it has lots of extra detail, accurately applied as appropriate to the specific loco number.

Prototype loco history

The Southern Pacific Railroad and its subsidiary Cotton Belt weren't shy about ordering specialized equipment thanks to their rugged operating environments. Their operations stretched from the Pacific coast, through the Sierra Nevadas, and across the deserts of the Southwest, with each having its unique challenges.

The famed AC-series "Cab Forward" articulated steam locomotives were one example, designed with tunnel and snowshed operation in mind. Partway into SP's diesel era, the tunnels and snowsheds common on the western half of the system would again prove to be an operational headache, thanks to locomotives overheating during long pulls within their cramped confines.



1. This is ScaleTrains.com's Rivet Counter line SD40T-2 tunnel motor. You can see it's loaded with extra detail, all correct for this road number, SP 8369.

JOE FUGATE looks at ScaleTrains.com's new SD40T-2 tunnel motor ...

THE ONE BIG BUGABOO WITH MODELS OF THE SD40T-2 tunnel motors has always been those see-through screens at the lower back of the hood.

The problem has been the rear power truck gear tower. If you're desperate, you can always remove the rear truck gear tower and just make it a dummy truck. But then that cuts the loco's pulling

FIRST LOOK: SCALETRAINS SD40T-2 | 3

Once the locos overheated, thermostatic controls would automatically make the unit reduce its output, or even shut down altogether, resulting in a loss of horsepower and stall the train.

SP and EMD collaborated on solving the problem. In the late 1960s, they experimented with “elephant ears,” large sheet metal air deflectors applied to the radiator intakes of various members of SP’s large SD45 fleet.

While effective at reducing overheating problems by directing a greater volume of cooling air towards the radiators, they were a maintenance hassle and blocked easy access to numerous hood doors. Engine crews also disliked them, as they could be an impediment on the walkways.



2. Putting a strong backlight behind the rear of the ScaleTrain’s tunnel motor unit makes it clear the view through the screens is unobstructed, just as on the prototype.

FIRST LOOK: SCALETRAINS SD40T-2 | 4

A more permanent solution arrived in 1972 with the delivery of the first SD45T-2 to the SP. Cataloged by EMD as an extra-cost option of their basic SD45-2, EMD manuals from the early 1970s describe the T-2 variant as an SD45-2 with cooling system modifications.

The SD45T-2 built upon the basic principle of the elephant ears, but in a more permanent package with air intake screens on the lower rear hood. Heralded a success, SP also ordered a “T-2” variant of the SD45T-2s cousin, the SD40-2.

For the SD40T-2, the basic SD40-2/45-2 frame was stretched several feet to allow for the enlarged radiator compartment at the rear of the long hood. Instead of the traditional placement of the radiator fans on the long hood roof above the radiator cores and intake grills, the T-2 design placed the radiator fans differently.

The diffuser assembly went inside the hood, below the radiator cores, and above a large, open radiator intake area placed at walkway level. This change resulted in faster, more efficient cooling.

SP 8300, built in 1974, would be the first SD40T-2. The more fuel-efficient sixteen-cylinder 16-645E3 prime mover would prove to be more popular than the thirsty twenty-cylinder 20-645E3 used in the SD45T-2.

The SD40T-2 quickly became a fixture on the Southern Pacific, with a total of 240 units built for the SP and its Cotton Belt subsidiary between 1974 and 1980. Delivered in different groups, each group would exhibit various customer option differences, as well as EMD production differences.

The first SD40T-2s, SP 8300-8306, and 8350-8356, came equipped with 116” long extended low short hoods to house Locotrol electronic equipment for remote control helper operations.

FIRST LOOK: SCALETRAINS SD40T-2 | 5

Subsequent deliveries of units equipped with extended “snoot” low short hoods would measure 123” in length, reflecting EMD design changes across the product line.

All SP/SSW units featured a large air conditioner housing on the cab roof (a welcome relief in the arid southwest), a 3-chime Nathan P3 airhorn offset to one side of the number board housing, and in the case of the Locotrol-equipped snoots, additional antenna ground planes and related cable conduits on the cab roof.

Naturally, the units came equipped with SP’s traditional Pyle-National “Gyalite” signal light package. However, SP 8300-8306 and 8350-8356 only had signal lights on the front. Changes to signal light policy saw all subsequent orders equipped with these safety appliances front and rear.



3. These locos come in protective packaging and an operator's manual describing how to configure the DCC sound decoder.

FIRST LOOK: SCALETRAINS SD40T-2 | 6



4. Putting the loco through its paces on a remnant of Siskiyou Line: this is probably the last time you will see this scene since it will be dismantled soon.

Notable model features

This loco comes with a Loksound sound decoder loaded with the proper sounds including the correct horn and bell. You can change the horn and bell to others if you wish, however.

Another notable feature of this loco is it comes with ESU's Powerpack “stay alive” module.

The first run is sold out, but [advanced orders for the second run are open until July 22nd](#), for delivery later in 2019.

Price is \$179.99 for DCC & sound ready, or \$269.99 for factory installed ESU-Loksound DCC sound with two sugarcube speakers inside. ☒

★★★★★
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FAST TRACKS

Build your own trackwork easily, quickly, and affordably.

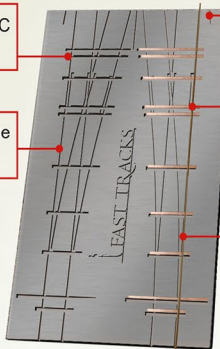


TRACK BUILDING SYSTEM

★★★★★
Precision milled pockets accommodate PC Board ties that are soldered to the rails.

★★★★★
Track slots ensure perfect alignment while soldering the rails to the PC Board ties.

Each turnout fixture can be used to construct both right and left turnouts that are DC and DCC compatible.



★★★★★
Guard rail forming grooves are provided to precisely shape the guard rails.

★★★★★
PC Board ties are soldered to the rails using a standard 35 watt soldering iron.

★★★★★
Rails are inserted into the fixture right side up, making it easy to confirm alignment.

★ Fixtures are machined out of a solid piece of high grade 6061 aluminium stock and will last for thousands of uses.

Turnouts are built using pre-cut PC Board ties dropped into pockets cut into the fixture.

Held in precise alignment, rail is then soldered in place onto the ties.

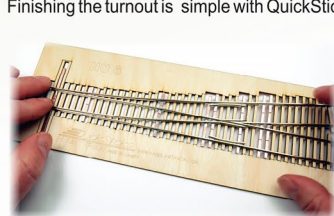


The Fast Tracks PointForm tool makes it fast and easy to file perfect frog and switch points for the turnout.

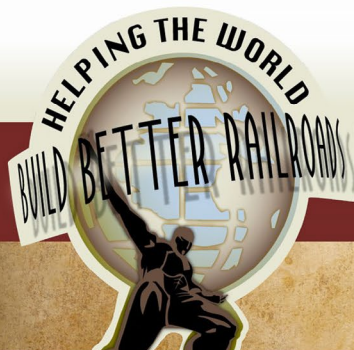
Just insert the rail into the tool and file.



Finishing the turnout is simple with QuickSticks laser cut wood ties.



Simply glue the soldered trackwork to the wood ties, break off the frets, and your turnout is ready to be installed onto your layout!



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Model Railroad Hobbyist | July 2019



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Watch on



**CHECK
IT OUT!**



Play this video

BNSF hopper weathering

If there ever was a “Yes, it’s a model” project candidate, this is it! That screen grab above shows *the model*, not the prototype! See how the magic transformation happens as modeler **KPack** shows you the ropes. If you’re an MRH forum regular, then you’ll recognize him as someone who also posts to the MRH forum now and then, too. ■



**VIEW READER
COMMENTS**

► **GREAT MODELER VIDEOS ON THE WORLD WIDE WEB**

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JULY NEWS

column

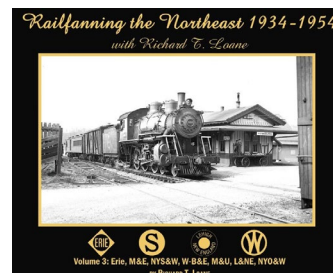


Model Railroad Hobbyist | July 2019 | #113

RICHARD BALE and
JEFF SHULTZ report the
latest hobby industry news

★★★★★
RATE THIS ARTICLE

NEW PRODUCTS FOR ALL SCALES



Morning Sun Books
has released volume
three of *Railfanning the
Northeast with Richard
T. Loane*. Editor Richard
T. Loane continues to
artfully present the

work of photographer Dick Loane and his excursions through the Northeast in the 1930s, '40s, and '50s. This volume offers many rare images from the Wilkes-Barre & Eastern, Erie, NYS&W, L&NE, and NYO&W. Additional new hard cover releases from Morning Sun are *Conrail Power in Color Volume 5*, by Stephen Timko, and *Color Guide for Incentive Per Diem Cars* by James Kinkaid. For details contact a dealer or visit morningsunbooks.com.

▶ THE LATEST MODEL RAILROAD PRODUCTS, NEWS & EVENTS



Motrak Models has announced The Module B, a set of drawers for the Modeler's Workbench Organizer. Fitting under the first module in the set, they measure 10.0625 x 4.5 x 4.875-inches, with the drawers measuring 7 x 4.25 x 1-inch, 2.5 x 4.25 x 1-inch, 3.125 x

4.25 x 1-inch, and 9.5 x 4.25 x 2-inches. The kit is manufactured out of .125-inch Masonite hardboard.



Also introduced are wall fans that will work with any building. 1 x 1 inches square, they are made of .025-inch laser board and come four to a package. For more information see the website at motrak-modelsusa.com.

.....



Ring Engineering has released the RailPro LM-3S-G, a large-scale loco module with sound that will also fit O scale locomotives.

Equipped with the same Direct

Radio control, Rail Sonic HD sound, and Radio Load Sharing as other the other LM-3S series loco modules, the LM-3S-G can accept up to 24V, with a maximum motor stall current of 8 amps. Audio output power is 13W at 4 ohms or 7.4W at 8 ohms. Wire connections are made via screw terminals on the module, which measures 3.35 x 1.32 x .57-inches in size.



Also announced is the RailPro HC-2-SUN, a wireless handheld controller with an extra bright screen for use outdoors in direct sunlight. Identical except for the screen to the HC-2, it can be used to control any Railpro locomotive module. For more information on all of Ring Engineering's products, see a dealer or visit ringengineering.com.

.....

O SCALE PRODUCT NEWS



Motrak Models has announced the Sardine Fisherman's Shack in O scale. Representative of fishermen's shacks through New England, the model features laser-cut wood for double wall construction, laser-cut paper shake shingles, laser-cut doors and shutters, Tichy Train Group plastic windows with laser-cut acetate, and easy-to-follow

instructions. The building is 3 inches deep by 7.5 inches wide from steps to steps.



Motrak Models has also announced The Weeks Mills Freight House. The prototype building is located in Alna, Maine and is painted two-tone green, as seen on the model photo. Measuring 11.5 by 6.25 inches, the kit features laser-cut double-wall construction, paper shake shingles, Tichy plastic windows, and a

laser-cut sub-floor to assist in placing support posts. The kit will work with both standard O and On30 layouts. It includes templates for building the loading dock at the correct height for either gauge. For more information on Motrak Models products visit their website at motrakmodelsusa.com.

HO SCALE PRODUCT NEWS



The latest release of HO scale freight car kits from **Accurail** includes this Milwaukee Road 40-foot single-sheathed wood boxcar with steel Dreadnaught ends. The model represents a prototype built in 1925 that was rebuilt in 1954.



Also new from Accurail is a series of four HO scale kits that assemble into Santa Fe SFRD wood refrigerator cars. The 40-foot reefers display Santa Fe's curved system map on one side and a choice of Super Chief, Grand Canyon, Scout, or El Capitan logos on the opposite side.



A special three-pack of 41-foot Pittsburgh & West Virginia gondolas is available now from Accurail. The HO scale model closely follows an AAR 11-panel design built by American Car & Foundry in 1926. Individual cars are also available.

Also new from Accurail is a series of four HO scale kits that assemble into Santa Fe SFRD wood refrigerator cars. The 40-foot reefers display Santa Fe's curved system map on one side and a choice of Super Chief, Grand Canyon, Scout, or El Capitan logos on the opposite side.

Accurail's summer schedule includes the release of HO scale kits for four 40-foot double-sheathed wood boxcars. Road names will be Santa Fe, Chicago, Burlington & Quincy; Great Northern, and Union Pacific. All Accurail kits come with appropriate trucks and Accumate knuckle couplers. For additional information contact a dealer or visit accurail.com.

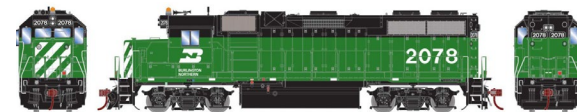


Photo courtesy of Becky Stone

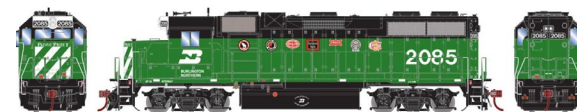
Athearn has announced plans to create an HO scale version of Union Pacific's newest commemorative paint scheme. Unveiled at Omaha NE on June 6, 2019, the prototype locomotive honors Union Pacific employees. A slogan beneath the cab window of the uniquely decorated SD70ACe states *Powered By Our People*.



Athearn's HO scale Genesis model is scheduled for release in December.



Fans of EMD's GP38-2 will be pleased with the lineup of Athearn Genesis series models coming next May. Phase I units with "chicken wire" radiator grilles will be available in Burlington Northern's standard green scheme. BN No. 2085 will be offered in the unique Pacific Pride scheme (below).



This release will include Phase Ib GP38-2s in five Conrail road numbers

including Conrail Quality (No. 8077), and Conrail Operation Lifesaver (No. 8090). The CR units, as well as locomotives decorated for Elgin, Joliet & Eastern, will have “chicken wire” radiator grilles.



CR GP38-2s will come with Blomberg-M trucks with rubber springs while the EJ&E locomotive will have Blomberg-B trucks with leaf springs.



GP38-2 Phase II units with corrugated radiator grilles will be available for Illinois Terminal and Pittsburgh & Lake Erie. All GP38-2s in Athearn's May 2020 release will have an 81-inch nose except the IT version which will be 88 inches.



Another run of Athearn HO scale Genesis series EMD F7A and F7 A/B sets is scheduled for release in May 2020. Utilizing the highly-regarded tooling created by Paul Lubliner, both A and B units will be available in the freight livery of five railroads including Santa Fe's blue and yellow Cat Whiskers scheme. The models will be equipped with LED lighting including a backup light on the blind end. Farr or “chicken wire” grilles will be applied to the upper radiator openings as appropriate to the road being modeled.



In addition to Santa Fe, road names in this release will be Frisco, Missouri-Kansas-

Texas, Western Maryland, and Milwaukee Road. The WM and Milwaukee A units will have road-specific eyebrow grab irons. Athearn Genesis models mentioned in this report will be available for DC operation with a DCC-ready 21-pin NEM socket, and with a factory-installed Tsunami2 sound decoder.



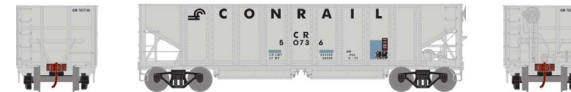
Athearn's May 2020 production schedule includes a 60-foot Gunderson high-cube

boxcar with double plug doors. Features on Athearn's Ready-to-Roll HO scale model include separately applied wire grab irons, etched end platforms, and roller bearing trucks with 36-inch machined metal wheelsets.



Road names will be Railbox/TTX (yellow

bodies in three schemes), TBOX (patched BCR in Athearn's Primed for Grime), Union Pacific (five schemes), Burlington Northern (four schemes), Southern Railroad of British Columbia, Transportación Ferroviaria Mexicana, Wisconsin Central, and the short-lived Southern Pacific Santa Fe.



Athearn's HO scale Ready-to-Roll model will have separately applied wire grab irons

and machined metal wheelsets. Three numbers each will be available for Union Pacific, Norfolk Southern, CSX, RJ Corman, Herzog, Alaska Railroad, and Conrail.



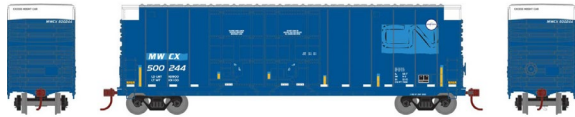
New intermodal equipment coming from Athearn next

May includes a 48-foot container with smooth sides.



Carrier names will be Allied Van Lines, American President Lines, Santa Fe,

Burlington Northern (two schemes), Canadian National, Conrail, and Southern Pacific.



Roundhouse brand models coming from Athearn in May 2020 include a 50-foot

high-cube boxcar with double plug doors. The HO scale model will be available in three numbers each decorated for BC Rail, Midwest Car (ex CN/GT in Primed for Grime), and Norfolk Southern in a MOW scheme.



An FMC 50-foot 5283 cu. ft. boxcar is due to be released by Roundhouse next May.

The HO scale model will feature double Youngstown sliding doors that will be positionable, and appropriate trucks with machined metal wheelsets. Three road numbers each will be available for Bangor & Aroostook, British Columbia Railroad, Golden West, Infinity Rail, Wisconsin Southern, Southern Pacific, Cotton Belt, and Minnesota, Dakota & Western. For information on all Athearn and Roundhouse products contact a dealer or visit athearn.com.



Broadway Limited is scheduled to release HO scale EMD SD7 and SD9 road switchers this month. Road names for the SD7 will be Chicago, Burlington & Quincy; Baltimore &

Ohio-Chessie System, CSX, Pennsylvania Railroad, Southern Pacific, and Union Pacific.



SD9s will be available decorated for Denver & Rio Grande Western, BNSF, Duluth, Missabe & Iron Range; Great Northern, Pennsylvania Railroad, and Southern Railway. Both versions

of the EMD diesel will come with Paragon3 Sound and Operation System with Rolling Thunder for operation in both DC and DCC environments. For additional information contact a dealer or visit broadway-limited.com.



Digital Fox has an HO scale kit for a 41-foot Wellsville, Addison & Galeton steel gondola. The kit was produced for

Digital Fox by Accurail and comes with Accumate couplers and appropriate trucks with Delrin wheelsets. It is available in three WAG road numbers. To order go to digitalfox.com.



ExactRail is selling both kits and fully assembled HO scale models of 30, 50, and 72-foot steel deck plate girder bridges.



The bridges have wood or cable handrails depending on the practice of the railroad being modeled. Other details include full interior bracing, etched

metal walkways, and molded ties.



The assembled versions are available in black, silver, or green, as well as decorated for Norfolk & Western, Santa Fe, Milwaukee Road, Great Northern, Pennsylvania, Chessie, Canadian National, Burlington Northern, and Union Pacific. Not all road names are available in all lengths. For more information visit exactrail.com.



Fos Scale Models has released Sarno Woodworks, a craftsman-style HO scale kit that assembles into an interesting lineside structure with plenty of character. This is a re-issue of a popular Fos kit originally introduced in 2009. The kit includes laser-cut shiplap and board and batten siding, a loading dock, wood stor-

age rack, plastic windows, color signage, and numerous metal details. Templates and assembly instructions complete the kit. The completed structure has a footprint of 4.75 x 7 inches. Figures, vehicles, and scenery shown in the illustration are not included. For additional information visit fosscalemodels.com.



ITLA Scale Models has introduced an HO scale craftsman kit called Albany Manufacturing Co. The kit can be assembled as a 3 x 3-inch square

building or as a shallow background structure that measures 12 inches wide and less than 1 inch deep. Construction uses the tab and slot method to assemble the basic laser-cut wood components of the structure. The kit offers some creative detailing techniques such as 3D laser-etched walls that expose brick rebar in weathered concrete areas.



Details in the kit include electrical conduits and meters, steps, handrails, ladders, ducts, pilasters and cornice trim. Rooftop vents, a chimney, and an access hatch are all included. ITLA's Albany Mfg. kit comes with optional color signs. Illustrated instructions guide the hobbyist through the assembly process

including painting suggestions. For additional information visit itlascalemodels.com.



New HO scale ready-to-run models from **Kadee** include this 50-foot Tidewater & Southern PS-1 boxcar. The ready-to-run model is based on

a prototype built by Pullman-Standard in 1955 with an 8-foot Superior six-panel sliding door.



Among Kadee's latest releases is this PS-2 twin-bay covered hopper car decorated for Boston & Maine. Spotting

features include straight ribbed sides and eight round loading hatches. The HO scale model is based on a car Pullman-Standard built in 1956.



AAR class HM-17 hopper comes with a removable coal load.



Also new from Kadee is this Nashville, Chattanooga & St. Louis 50-ton twin-bay hopper with offset sides and flat ends. Kadee's HO scale version of an

Completing our listing of new Kadee HO scale ready-to-run models is this Norfolk & Western 40-foot PS-1 boxcar. The model replicates a prototype built in

1953 with 8-foot Youngstown sliding doors. All Kadee ready-to-run models come with Kadee metal knuckle couplers and two-piece self-centering trucks. For additional information contact a dealer or visit kadee.com.



Mass Transit Miniatures, a division of Imperial Hobby Productions, has an HO scale body kit for a

NYCTA R40 "Slant Nose" subway car. The HO scale model follows a prototype designed for the New York City Transit Authority in the 1960s by Raymond Loewy. The kit includes a one-piece resin cast body and 3D printed frames, trucks, and end gates.

Also available from Mass Transit Miniatures is a resin body kit for an HO scale Budd SEPTA transit car. From 1961 to



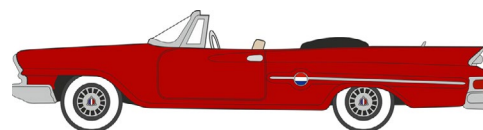
the late 1990s, Philadelphia's Market-Frankford EL was equipped with Budd cars, which because of

their four roof ventilation fans were nicknamed "Almond Joy" cars by transit fans. The model represents single-unit Class A-49 cars with an operator's cab at each end. The body is made from all-new tooling based on a CAD-designed, 3D-printed pattern. The frames and end gates are also 3D-printed. The truck side frames on both Budd models match Bowser power trucks which are available separately. For additional information visit ihphobby.tripod.com.



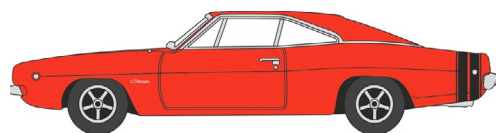
Motrak is selling a basic laser-cut kit that assembles into an HO scale 2.5 x 3-inch Yard Shed. The limited edition kit consists of laser-cut walls, floor, roof, and tar paper; Tichy door and windows, and resin and plastic detail parts. For more information visit

motrakmodelsusa.com.



Oxford Diecast has added four new 1:87 scale American automobiles to its current list of available models. They

include this 1961 Chrysler 300 Convertible with wide whitewall tires. It is painted in Chrysler's Mardi Gras Red.



This red 1968 Dodge Charger R/T has alloy wheels and signature stripes across the trunk.



Chevrolet listed the base color on this is 1957 two-door Nomad station wagon as Dusk Pearl.



Completing Oxford's recent release is a 1957 Dodge D100 Sweepstakes Pickup with whitewall tires and chrome wheel covers. For

additional information contact a dealer or visit walthers.com.



R. Bale

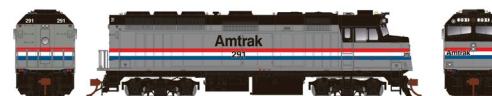
AMTRAK'S HORIZON FLEET

Introduced by Amtrak in April 1989, the Horizon fleet (also known as the Amfleet IIIs) was based on the Comet-series commuter cars Pullman-Standard had been producing since 1970. The new Horizon fleet consisted primarily of two car types – a coach and a dinette car. Over the years, the Horizon cars have remained largely unchanged from their as-built appearance, with the only significant visual differences being the evolution of the Amtrak paint schemes from Phase III through Phase IVb. Externally, the only major change was the replacement of fold-down stairs with fixed steps.



Rapido Trains has announced several new products and is currently booking pre-orders to determine which projects will go forward and which may be delayed or cancelled due to lack of consumer response.

Rapido's list of new products begins with a high-end HO model of Amtrak's Horizon coach and dinette cars. In addition to Rapido's established reputation for full underbody detail, notable features on the new Horizon cars will be tinted windows, full interior detail, metal grab irons, GSI G70 trucks with machined metal wheelsets, and constant lighting in both DC and DCC modes. The ready-to-run models will be available in multiple numbers decorated in Amtrak Phase III narrow (above), Phase III wide, Phase IV, Phase VI, and Amtrak California schemes. A minimum number of pre-orders will be needed for this project to go forward.



Rapido has announced plans to produce Phase 2B and Phase 3 versions of

Amtrak's F40PH locomotive. Basic F40PH Phase 2B units will be available decorated for Amtrak Phase II, and Amtrak Phase III.



Phase 3 Commuter versions of F40PH locomotives will be available decorated for

Massachusetts Bay Transportation Authority, and New Jersey Transit.



Paint variations for F40PH Phase 2B units with ditch lights will include Virginia

Railway Express (above). Amtrak Phase III scheme, Agawa Canyon Tour Train, Montreal Transit (AMT), CSX (with larger fuel tank), and Rio Grande Ski Train.



Grande Ski Train. At the point will be a late version of a F40PH diesel with ditch lights.



coaches and snack coaches will be also available. Note: If sufficient pre orders are received for the Snack Coaches, Rapido will tool the unique window arrangement applied to these cars. If the minimum is not met, the Snack Coaches in the above sets will use the same carbody as the coaches.



Another new product under development at Rapido is an HO scale version of a Comet car, the modern commuter car Pullman-Standard initially delivered to Erie-Lackawanna in the early 1970s. Several versions of the popular design were subsequently supplied

to several transit authorities by car builders P-S and Bombardier. Rapido will offer three-car train sets consisting of two coaches and one cab car. Two packaged sets of cars with different numbers and names will be available for AMT, CDOT, and MBTA. The initial release will also include individual, unnumbered cars decorated for SEPTA, AMT, CDOT, MBTA, MNCR, NJT, and undecorated. In addition to Rapido's usual interior and underbody details, the Comet cars will feature tinted windows, controllable interior and

Rapido is booking advance orders for an HO scale version of a Denver & Rio

D&RGW passenger cars planned for this project include a café/bar/lounge car, a club car and a coach. Two editions of the Ski Train will be available with different named cars in each set. Additional named

cab car lighting in both DC and DCC modes, metal grab irons, and correct inside-bearing trucks with metal wheelsets.



Rapido is quoting an early 2020 delivery date for a new HO scale USRA wood-sheathed boxcar. Multiple road numbers will be available for Atchison, Topeka & Santa Fe; Boston and Maine (Minuteman), Chicago, Burlington & Quincy (Everywhere West); Chicago, Rock Island & Pacific; and Delaware, Lackawanna & Western.



Additional road names will be Great Northern, Minneapolis & St Louis (The Peoria Gateway), Missouri Pacific, New York Central,

Pere Marquette, St Louis-San Francisco, Spokane, Portland & Seattle; Wabash, and Toronto, Hamilton and Buffalo (red body); and TH&B (yellow body).



The models will come with Andrews trucks with in-line brake shoes and blackened machined metal wheels. Underbody details will

include separate brake rods and piping, and KC brakes, except on TH&B and SP&S cars which will be equipped with AB brakes.



Most of the lettering styles mentioned are from the post-1930s era. Rapido will consider offering earlier schemes in subsequent

releases if sufficient requests are received. The initial release is being offered in four-packs. Individual cars can be ordered from participating dealers.



R. Bale

EMD's FL9

The FL9 was a unique dual-power locomotive developed in the mid-1950s for the New Haven Railroad for service out of New York City's Grand Central Terminal. The locomotive could run as a diesel or as an electric off a third rail. With the exception of its three-axle trailing truck, the FL9 otherwise resembles a standard FP9. In the 1980s the 30-year old locomotives were rebuilt with new electronics, modern HEP equipment, and a fully upgraded braking system. Notable among the rebuilds were four units that were sold to ConnDOT - the Connecticut Department of Transportation, where they continued in service wearing their original New Haven McGinnis livery. Two units were later repainted in a fictitious but eye-catching New York Central Lightning Stripe scheme for service on the Hudson Line. The rebuilt FL9s remained in service until 2009, becoming the last F-units in daily mainline passenger service in the United States. Two units, former Amtrak Nos. 488 and 489, went on to see further service on the Maine Eastern until 2015.

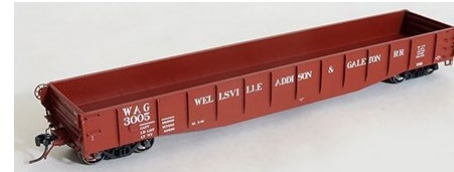


Rapido is working toward a spring 2020 release date for a rebuilt FL9. Rebuilt features on the HO scale model will include correct HEP roof details, updated underbody details, modernized classification lights, front and rear HEP receptacles, correct horns, and optional operating ditch lights.



Decorating schemes will include Connecticut DOT (New Haven McGinnis), Metro North (Red and blue), Metro North (Silver

and blue), Metro North (NYC Lightning Stripes), Amtrak (Phase III), and Maine Eastern. Operating options will be DC/silent, and DC/DCC/sound. Sound equipped models will come with a custom ESU Loksound V5 decoder. For additional information on Rapido products contact a dealer or visit rapidotrains.com.



Tangent is selling its Bethlehem 52-foot 6-inch 70-ton steel gondola in four new paint schemes. The HO scale ready-to-run model

replicates a standard design the Bethlehem Steel Company used continuously between 1937 and 1957. Tangent's latest release includes this Wellsville, Addison & Galetton car. The model closely follows a WAG prototype including the application of Duryea draft gear and a riveted steel floor.



Also available now is a Wabash version of the Bethlehem standard gondola with a wood floor, an Equipco brake wheel, and Wine brand tie-downs

along the top chord of the car's sides.



Western Maryland gondolas are available in the original 1954 as-delivered scheme (left), and in a 1967 repaint. Both WM cars have Equipco brake

wheels, a Gypsum brake step, a nailable steel floor, and Wine tie downs. All versions of the Bethlehem model have Dreadnaught drop ends, full interior detail, wire grab irons, and appropriate trucks with machined metal wheelsets. For additional information visit tangentscalemodels.com.

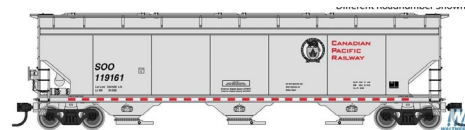


Walthers is finalizing new tooling for a late 2020 release of EMD FP7-F7B diesels. Pre-production samples of the Proto series model, decorated for Southern Railway, show the freight style pilot and MU hoses. Not visible in the photo are the ATS pickup shoe details.



Additional road names will be Southern Pacific (snow-plow pilot, roof top ice breakers), Amtrak (ex-SP), VIA Rail Canada (working ditch lights, winterization hatch),

Pennsylvania Railroad (phone antenna, nose grab irons), and Soo Line (Mars light, nose grab irons, winterization hatch). The ready-to-run HO scale model will be available with ESU LokSound 5 Sound and DCC for DCC and DC layouts.



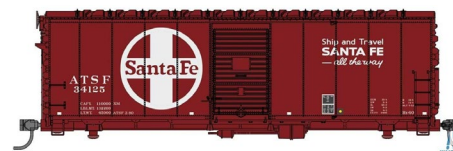
Walthers August delivery schedule lists a Mainline series 60-foot 5150 cu. ft. triple-bay covered hopper.

The HO scale model is based on a prototype introduced by NSC in 1996. Features of note include raised side panel weld seams, thin-profile roofwalk, and trough roof hatches with handles. The model rides on 100-ton roller-bearing trucks with 36-inch metal wheelsets.



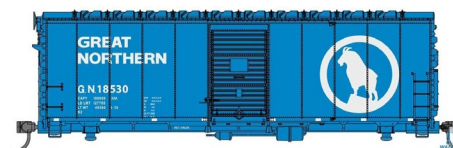
Road names for the 5150 covered hopper will be ADMX Archer-Daniels-Midland, BNSF, Canadian Pacific SOO,

ICMX-Illinois Cereal Mills Cargill, CRDX Chicago Freight Car Leasing, and Union Pacific. An undecorated model will also be available.



Walthers is quoting a September release date for a new production run of 40-foot 10-panel AAR boxcars. The HO scale models

represent cars built in the 1940s that were modernized in the 1960s. The changes included removing the running board, and shortening the ladders on the A end while retaining the longer ladder, high brake wheel and single roof mounted grab iron on the B end.



The models have Improved Dreadnaught 4/4 ends with a truncated top rib, diagonal panel roof, 6-foot Youngstown sliding doors, and Bettendorf-type trucks with 33-inch machined metal wheelsets.



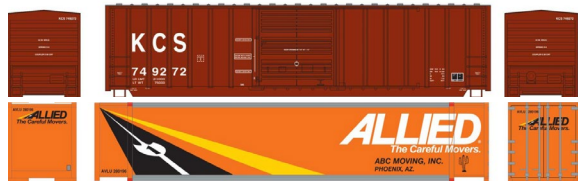
Road names in this release will be Santa Fe, Burlington Northern, CP Rail, Ferrocarril del Pacifico, Great Northern, Lehigh Valley, Penn Central, and Union Pacific. For additional information on all Walthers products contact a dealer or visit walthers.com.

N SCALE PRODUCT NEWS

Athearn has included an N scale 50-foot Berwick boxcar on its May 2020 schedule. In addition to the Burlington Northern Santa Fe scheme shown here, road names will be Burlington Northern,



Railbox, General American Leasing, Norfolk Southern, Maryland & Pennsylvania, Chicago & North Western, Pickens Railroad, Middletown & New Jersey, Nevada Northern, and Kansas City Southern.



New N scale intermodal equipment coming from Athearn next May includes a 48-foot smooth side container.



Carrier names will be Allied Van Lines, American President Lines, Santa Fe, Burlington Northern (two schemes), Canadian National, Conrail, and Southern Pacific. For additional information contact a dealer or visit athearn.com.



Here's a decorated pre-production sample of a new N scale caboose coming soon from **Bluford Shops**. The model represents a Phase IV bay-window steel caboose as produced by the

International Car Company in the early 1950s. Bluford plans to produce the International caboose in the four distinct phases that evolved over the years, plus the unique half-bay window version. The ready-to-run models will feature wire grab irons, glazed windows, and appropriate trucks with Fox Valley Models metal wheels. For additional information visit bluford-shops.com.



R. Bale

USRA 2-8-2 MIKADO

The first USRA light Mikado was delivered in July 1918. It was built by Baldwin and became No. 4500 on the B&O. Both light and heavy USRA Mikados utilized the same 63-inch drivers, cylinders, and running gear, but the diameter of the boiler on heavy Mikes was 10 inches greater. The result was 19,000 more pounds on the drivers and 10 percent more pulling power. The 2-8-2 Mikado was a solid work horse design with more than 10,000 built for North American railroads. More 2-8-2s were built than any other type of steam locomotive with a trailing truck.



Broadway Limited's summer schedule includes the release of both light

and heavy versions of USRA 2-8-2 Mikado steam locomotives. Road names for BLI's USRA light Mikado will be Baltimore & Ohio, Pennsylvania Railroad, Southern Railway, Union Pacific, and New York Central/Indiana Harbor Belt.



Road names for Broadway Limited's heavy USRA Mikado will be Santa Fe, Chicago, Burlington & Quincy; Erie, Great

Northern, Milwaukee Road, and New York Central/Pittsburgh & Lake Erie. The N scale models will come with Paragon3 Sound and Operation System with Rolling Thunder that functions in both DC and DCC environments. For additional information contact a dealer or visit broadway-limited.com.



KatoUSA is taking advance reservations for an abbreviated version of the Chicago & North Western 400. The six-unit N scale

train set will be available packaged in a special bookcase set that will include an EMD E8 C&NW locomotive, and five newly-tooled Pullman bi-level cars.



above, and a coach-buffet car, below.



Pullman-Standard bi-level cars in the set will include a cab-coach,

Completing the set will be three four-window coach / coach-parlor cars, left. A DC analog version of the bookcase set will be available this November. DCC and

DCC with sound versions will follow in December. For more information contact a dealer or visit katousa.com.



Micro-Trains has released two 10-1-2 heavyweight Pullman sleeping

cars based on prototypes built in the 1920s. The Southern Railway car shown above is painted Pullman green and carries the name George Poindexter. The prototype car was upgraded several times and served into the early 1960s.



The Northern Pacific heavyweight sleeper is decorated in the road's classic two-tone green with white lettering, a scheme developed for NP by industrial designer Raymond Loewy.



This 65-foot 10-ton pulpwood car follows a prototype built by Greenville Steel Car Company

in 1985. The model is painted black and is lettered for HPAX-Hammill Paper Company.



Micro-Trains 89-foot Norfolk & Western tri-level autorack is an N scale version of a 1969 prototype that

was rebuilt in 1979 with a new Whitehead & Kales enclosed rack.



This N scale model is based on a 36-foot riveted steel caboose built in 1953 at Great Northern's shops in St. Cloud, Minnesota. In the late 1960s it was repainted in the Big Sky blue scheme. Like

the prototype, the N scale model is equipped with Bettendorf-type swing-motion caboose trucks with elliptical springs. For additional information contact a participating Micro-Trains dealer.



Among the many new products under development at **Rapido** is an N scale version of a Comet car, the modern commuter car Pullman-Standard initially delivered to Erie-Lackawanna in the early 1970s.

Several iterations of the popular

design were subsequently supplied to several transit authorities by car builders P-S and Bombardier. Rapido will offer three-car train sets consisting of two coaches and one cab-car. Two packaged sets of cars with different numbers and names will be available for AMT, CDOT, and MBTA. The initial release will also include individual, unnumbered cars decorated for SEPTA, AMT, CDOT, MBTA, MNCR, NJT, and undecorated. In addition to Rapido's usual interior and underbody details, the Comet cars will feature tinted windows, controllable interior and cab car lighting in both DC and DCC modes, metal grab irons, and correct inside-bearing trucks with metal wheelsets.

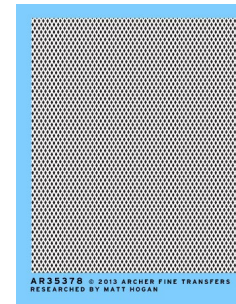
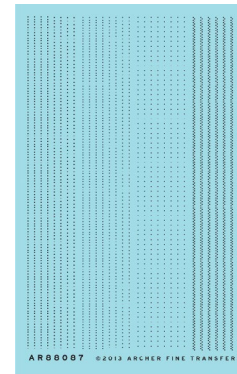


Rapido has announced plans to produce an N scale model of Amtrak's Horizon coach and dinette cars. In addition to Rapido's established

reputation for full underbody detail, notable features on the new Horizon cars will include tinted windows, full interior detail, metal grab irons, GSI G70 trucks with machined metal wheelsets, and constant lighting in both DC and DCC modes. The ready-to-run models will be available in multiple numbers decorated in Amtrak Phase III narrow, Phase III wide, Phase IV (above), Phase VI, and Amtrak California schemes. A minimum number of pre-orders

will be needed for this project to go forward. See the sidebar on page 14 for information on the prototype Horizon cars. For additional information on Rapido products contact a dealer or visit rapidotrains.com.

NEW DECALS, SIGNS AND FINISHING PRODUCTS



Archer Transfers offers a wide assortment of 3-dimensional resin rivets and textures on clear decal film. The selection includes scale size welding beads and rivets for freight and passenger cars, tenders, trolleys, bridges and other industrial applications in a

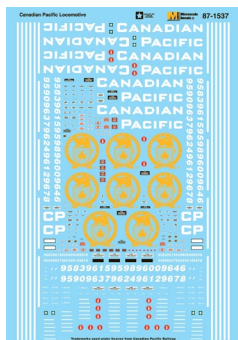
variety of configurations including round patterns, and single, double, and staggered rows. A good starting point for hobbyists to familiarize themselves with this modeling technique is Archer's Resin Rivet HO scale starter set (Item No. AR88087, above left) that includes 31 linear inches of 3-D resin rivets in 5/8 inch, 7/8 inch diameter in single-rows, and 27 linear inches of tank car double-row rivets.

A simulated grille decal (above right) is available for G, O and S scale applications. This is not a raised resin detail but rather a standard waterslide decal simulating a mesh or expanded metal grille. S scale is the smallest that can be reliably printed, however, depending on the application, modelers may find it suitable for smaller scales as well. For additional information visit archertransfers.com.



CustomTraxx sells a wide selection of water-slide decals for trolley, interurban, and modern light rail vehicles. Both HO and N scale decals

are available for Shapeway's San Diego S70 Light Rail Vehicles. Although designed for San Diego's 4001 series cars (above), the markings, numbers, and destination signs in the decal set can also be used to accurately decorate 2001 series cars and the 1001 series U2 vehicles that were retired in early 2015. For additional information visit customtraxx.com.



Microscale has HO and N scale waterslide decals for Canadian Pacific AC4400CW locomotives. For additional information contact a dealer or visit microscale.com.

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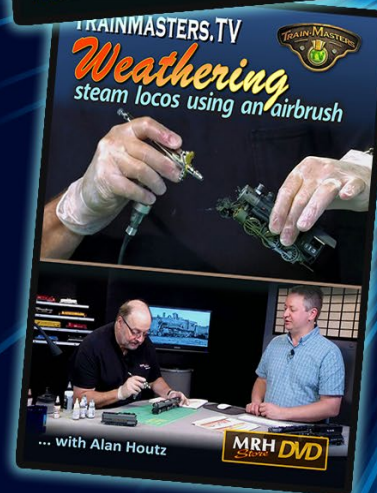
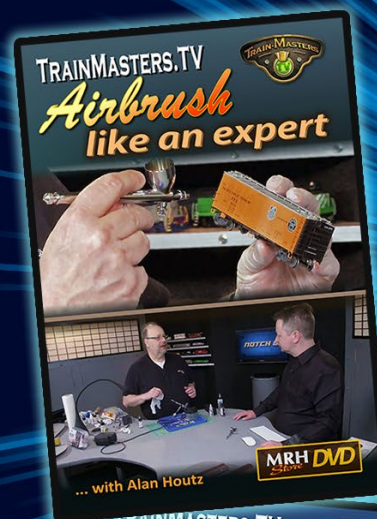


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! BRIEFLY NOTED AT PRESS TIME ...

Atlas's 2020 first quarter schedule includes a new N scale bay-window caboose, a 50-foot RBL boxcar, 53-foot 6-inch flat car, an X-72 boxcar, and a new HO scale heavyweight 14-section Pullman sleeper. New paint schemes will be available for N and HO scale GP40-2 locomotives. An articulated auto carrier and an FMC 5077 boxcar will be available in N, HO and O scale. HO models in new paint coming early next year include an Alco H15/16-44 locomotive, a 1932 40-foot ARA boxcar, a 50-foot GARX reefer, a 36-foot wood reefer, and a 50-foot postwar boxcar. Triple and six-bay cylindrical hoppers will be available in both HO and O scale. Additional Atlas O items due in the first quarter of 2020 include Comet and Horizon passenger cars, an X-29 boxcar, an 89-foot 6-inch flat car, a 50-foot stock car, and a 53-foot 6-inch wood express reefer ...

The Narrow Gauge Modeling Company of Hubbardston, MA, has acquired *Tall Timber Short Lines* from Northwest Short Line. The new owner plans to preserve previously published and unpublished information and make it available to researchers through an as yet unnamed historical society. Plans also call for reviving the magazine, which has not been published since 2008 ...

Railfan Models LLC has introduced an HO scale version of a Kasgro 325-ton 12-axle, 36-foot depressed deck flat car. Both kits and fully assembled models are available. For details visit railfanmodels.com ...

ScaleTrains.com has announced its fourth run of HO scale SD40-2s and second run of SD40T-2s. A new run of 31k Trinity tank cars includes Rivet Counter cars with placards for crude oil, ethanol, gasoline or petroleum. For details visit scaletrains.com ...

Rapido has announced a large number of new N scale products including GMDD FP9A diesels, both original and rebuild versions of VIA F40PH-2D diesels, VIA and Amtrak LRC coaches, Amtrak California Horizon cars, and passenger cars of The Canadian, arguably Canada's most famous passenger train. Check the August issue of MRH for full details ...

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SELECTED EVENTS



Model Railroad Hobbyist | July 2019 | #113

JULY 2019

(Many events charge a fee. Check individual info website for details.)

CALIFORNIA, McCLELLAN (metro Sacramento), July 10-14, National Summer Steamup (small-scale live steam), at Lions Gate Hotel, 3410 Westover. Info at www.steam-events.org.

FLORIDA, THE VILLAGES, July 8-9 and August 17-18, Train Show & Sale, at Savannah Regional Recreation Center, 1545 Buena Vista Blvd. Info at www.thevillagesmodeltrainclub.com.

ILLINOIS, COLLINSVILLE (metro St Louis), July 26-27, St. Louis RPM Meet, at Gateway Convention Centre. Info at www.icgdecals.com/stlrpm.

OHIO, MEDINA, July 12-14, 50th Annual Summer Live Steam Meet, sponsored by Northeastern Ohio Live Steamers, at Lester Rail Trail Park, 3654 Lester Road. Request info from Paul Weiss at cherryvalleyrr@gmail.com.

UTAH, SALT LAKE CITY, July 7-13, NMRA National Convention and National Train Show. HQ at Little America Hotel. Info at nmra2019slc.org.

August 2019, by location

KENTUCKY, LOUISVILLE, August 4-9, 11, St Matthews Eline Library Model Train Show, Sponsored by K& I Model Railroad Club, St Matthews Eline Library, 3940 Grandview Avenue. Info at www.kandimrr.com/schedule-of-events.

SELECTED EVENTS | 2

OHIO, MARION, August 10, Summerail 2019, sponsored by Marion Union Station Association, 532 West Center Street. Info at www.summerail.com.

OHIO, PAINESVILLE, August 23, Railroad Memorabilia Show, at Painesville Railroad Museum, 475 Railroad Street. Info at painesvillerrailroadmuseum.org.

OREGON, PORTLAND, August 27-31, 35th National Garden Railway Convention, hosted by Rose City Garden Railway Society, at DoubleTree by Hilton Hotel, 1000 NE Multnomah Street. Info at www.ngrc2019.org.

PENNSYLVANIA, ALTOONA, August 3-4, N-Scale Weekend & Model Train Show, sponsored by Bedford Model Railroaders at Altoona Jaffa Shrine Centre. Info at www.n-scaleweekend.com.

VIRGINIA, LYNCHBURG, August 10, Lynchburg Railroad Day, Model Train and Railroadiana Show, at Boonsboro Ruritan Club, 1065 Coffee Road. Info at www.blueridgenrhs.org/rail-day.

Future 2019, by location

CANADA, ONTARIO, BRAMPTON, October 5-6, Greater Toronto Train Show, at Brampton Fairgrounds, 12942 Heart Lake Road. Info at www.torontotrainshow.com.

ARIZONA, MESA, (Metro Phoenix), September 25-29, Arizona Junction, 2019 NMRA Pacific Southwest Region Convention, hosted by PSR Arizona Division, at Sheraton Mesa Hotel at Wrigleyville West, 860 North Riverview Mesa. Info at azdiv-nmra.org/psr2019convention.

CALIFORNIA, SACRAMENTO, September 4-7, National Narrow Gauge Convention, at DoubleTree by Hilton Hotel, 2001 Point West Way. Info at www.nngc2019.org.

CALIFORNIA, SAN LUIS OBISPO, October 4-6, Central Coast Railroad Festival and Train Show. Info at ccrrf.com.

SELECTED EVENTS | 3

CALIFORNIA, OCEANSIDE, October 12, Train Show & Swap Meet, sponsored by North County Model Railroad Society at Heritage Park, 230 Peyri Drive. Info at swapmeetinfo@ncmrs.org.

FLORIDA, DAVENPORT, November 9, NMRA SSR Eastern/Western Fall Workshop, at Edgehill Recreation Association Clubhouse, 50 Westridge Drive. Request info from Jim Robertson at 352-249-6862.

INDIANA, INDIANAPOLIS, September 14, Train Show & Sale, sponsored by Naptown & White River Model Railroad Club, at Emmerich Manual High School, 2405 S. Madison Avenue. Info at naptownrr.org.

KENTUCKY, LOUISVILLE, November 16, NMRA MCR Division 8 Train Show, at Holy Family Parish Saffin Center, 3938 Poplar Level Road. Info at www.div8-mcr-nmra.org.

MARYLAND, LINTHICUM HEIGHTS (Metro Baltimore), September 19-22, Mid Atlantic RPM Meet, at Double Tree by Hilton, BWI Airport, 890 Elkridge Landing Road. Info at marpm.org.

MASSACHUSETTS, GARDNER, October 5, Southern New England 2 Rail O Scale Fall Show, at United Methodist Church, 161 Chestnut Street. Info at www.snemrr.org.

MICHIGAN, EAST LANSING, November 10, Model Railroad Club Show and Sale, sponsored by Lansing Model Railroad Club at Michigan State University Pavilion. Info at www.lmrc.org.

MICHIGAN, TROY, November 7-10, NMRA NCR North Central Region Convention, at Troy Community Center, 3179 Livernois. Info at www.div8.ncr-nmra.org/ncx-2019.

MISSOURI, SPRINGFIELD, September 7, Fall Train Show, sponsored by Ozarks Model Railroad Association, at East Hall Ozark Empire Fairgrounds Eplex, 3001 N. Grant Ave. Info at www.omraspringfield.org.

SELECTED EVENTS | 4

NEW YORK, LIVERPOOL (Metro Syracuse), September 19-22, NMRA Northeastern Region Empire Junction 2019 Convention, at Holiday Inn, 441 Electronics Parkway. Info at empirejunction.org.

NORTH CAROLINA, FLETCHER, October 4-5, Autumn Rails Train Show, at Expo Building, Western North Carolina Agricultural Center, sponsored by French Broad e'N'pire NTRAK Club. Request info from Ray Baldwin at 607-72-9694.

OHIO, CAMBRIDGE, October 20, NMRA MCR Division 6 Swap Meet, at Pritchard Laughlin Center, 7033 Glenn Highway. Info at div6-mcr-nmra.org/swapmeet.html.

PENNSYLVANIA, EASTON, October 6, 43rd Annual Lehigh Valley Regional Train Show & Expo, at Charles Chrin Community Center, 4100 Green Pond Road. Info at www.lehighlines.org/events.html.

WASHINGTON, BATTLE GROUND, September 28, 46th Great Train Swap Meet, sponsored by Southwest Washington Model Railroaders at Battle Ground High School Gymnasium, 300 West Main Street. Request info from Larry Sprenkel at Larry.sprenkel@gmail.com.

Beyond 2019, by date

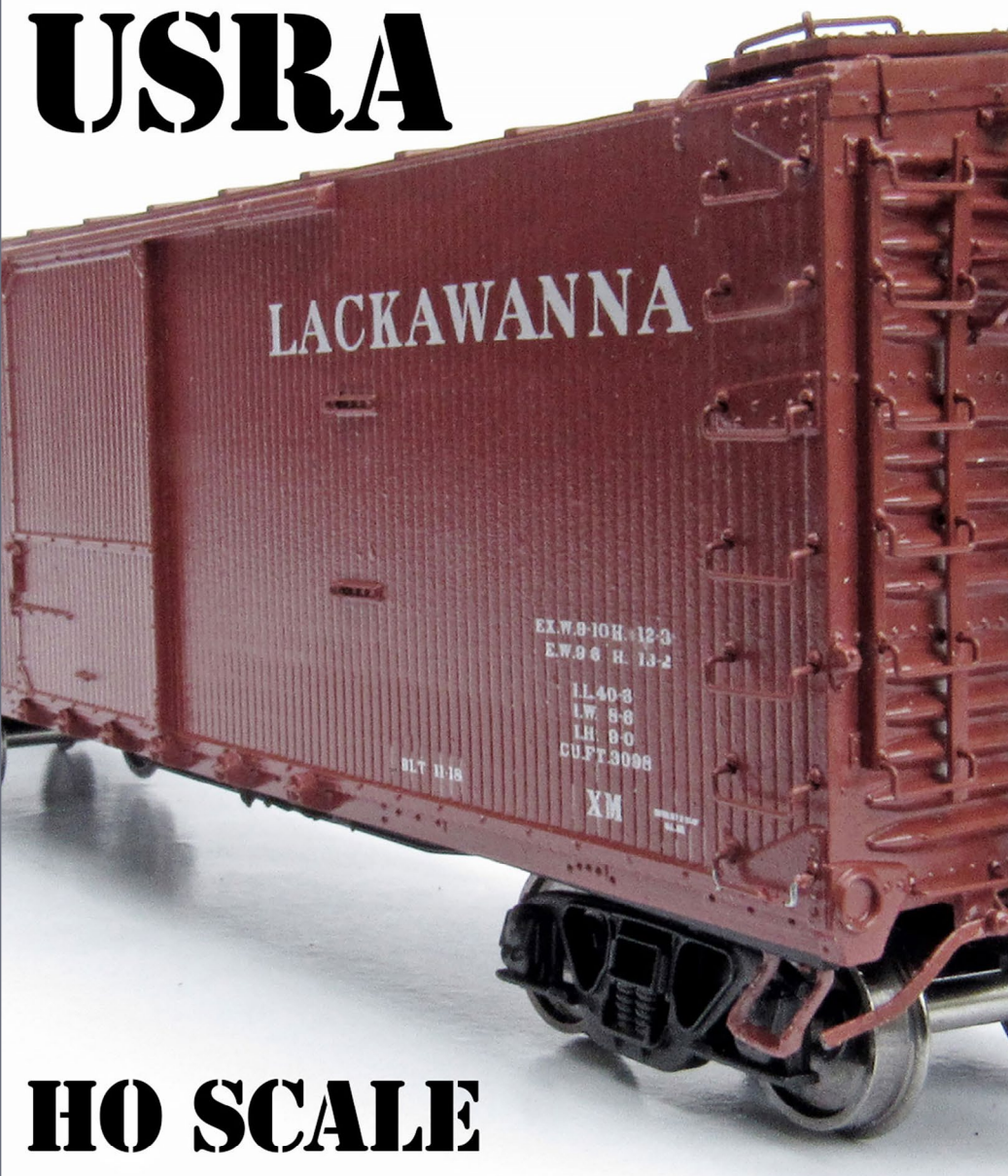
MISSOURI, ST. LOUIS, July 12-18, 2020, NMRA National Convention and National Train Show. HQ at Hilton St. Louis at the Ballpark. Info at gateway2020.org.

CALIFORNIA, SANTA CLARA, July 4 – 10, 2021, NMRA National Convention and National Train Show.

ENGLAND, BIRMINGHAM, August 14 – 21, 2022, NMRA National Convention and National Train Show. Info at www.nmra2022uk.org. ■



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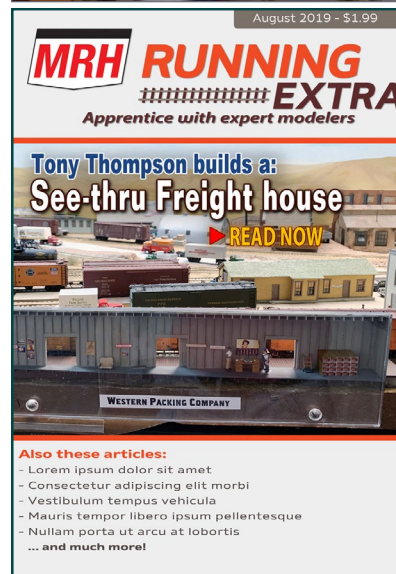
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