



# MRH *RUNNING* *EXTRA*

More modeling every month



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- How modelers helped me out
- ... and much more inside!



Jason Miller's

Module spawns a layout

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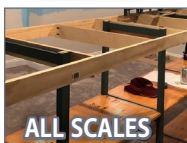
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**Limited Modeler: Limited manpower**  
JIM SIX



**Getting Real: IKEA benchwork**  
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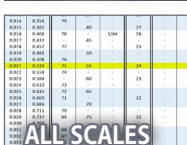
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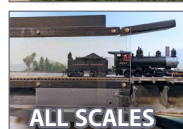
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RICHARD BALE and JEFF SHULTZ



# PUBLISHER'S WELCOME

## introduction



MRH Running Extra | June 2019

### JOE FUGATE: POWERED PIN VISE, THE SECOND TIME AROUND ...



**RATE THIS ARTICLE**

IN THE LAST ISSUE OF *RUNNING EXTRA*, I PROPOSED a powered pin vise in “Ah-Hah Moment” using a General mini-screwdriver and a special chuck from Micro-Mark specifically designed to fit the General screwdriver.

Much to my chagrin, right after we published the issue, Amazon raised the price on the General screwdriver, and some modelers reported problems purchasing the Micro-Mark chuck or getting it to fit properly on the screwdriver after receiving it.

So I went back to the drawing board with a plan B. I love my powered pin vise, but I figured there had to be more than one way to meet this need!

The solution was in a post made by one of our readers regarding a Rockler mini chuck that fits a standard 1/4” hex shaft found in almost all powered screw drivers. The General mini-screw driver uses an odd 1/8” hex shaft, which has almost nothing else available at this size.

The Rockler mini-chuck takes #60-#97 drills and sells for just \$12. A number #97 is *less than half* the diameter of a #80 drill – just a mere 0.0059” (0.14986mm).

Add to that a Black & Decker cordless screwdriver for just \$9 and at just over \$20 you’ve got a sweet handheld powered pin vise that spins at about 30-60 RPM and won’t melt plastic. Let’s hope this combination of parts is less of a hassle to locate and get to work. ☑

## PUBLISHER WELCOME | 2

BLACK+DECKER  
Alkaline Cordless  
Screwdriver

Model No. AS6NG

Price: ~\$9 US



1. This regular alkaline battery powered Black & Decker screwdriver is available all over: Walmart, Home Depot, Lowes, and of course on Amazon Prime: [amzn.com/B004HY3APW](https://www.amazon.com/B004HY3APW) .

Rockler Micro Drill  
Chuck

Part No. MICRO CHUCK

Price: ~\$12

takes #60 - #97 drill bits

1/4” hex shaft fits powered  
screwdrivers



2. This amazing little drill chuck from Rockler takes #60 to #97 drill bits, so it’s perfect for modeling use. Its standard 1/4” hex shaft fits most powered screwdrivers, making it easy to find a wide selection of powered units it will work with: [www.rockler.com/micro-drill-chuck?sid=V9146](https://www.rockler.com/micro-drill-chuck?sid=V9146).

# THE LIMITED MODELER

column



MRH Running Extra | June 2019

**JIM SIX** REVIEWS A VERY REAL  
LIMITATION, MANPOWER ...



## PICKING TOPICS TO WRITE ABOUT EACH MONTH

is not as easy as one might think. For starters, the name of this column is self-limiting. Narrowing the topic selection to limited modeling eliminates many otherwise great topics. I am learning as we go. So far, I have used my layout-building experiences to feed the column. Frankly, I am finding it difficult to get off this “limited” scope – pun intended.

I have written about all sorts of limitations we face every day in the hobby. One thing I have not brought up until now is manpower. Many of us build our layouts solo – that is, all by ourselves. Others utilize a crew of workers to do the physical work, relegating the layout owner to the role of project manager. Still others do a mix of both. Either way, it takes time and human resources to build a layout.

Some layout owners prefer to do all their own work, which can be limiting and can make layout construction take longer. Admittedly, it is nice to tell folks, “I did this all myself.” Me?

► DOING MORE WITH LESS

## THE LIMITED MODELER | 2

I do enough of my own work that I can make such a claim about most of my modeling. However, I have utilized the time and skills of several great model railroad friends in order to get things done in a reasonable time.

Then there is the aspect of our hobby that for me is the glue that holds the hobby together – friendship. Without the fellowship of my friends in the hobby I would not be a model railroader. There is not enough in it for me to go it alone. Featured in this column are some friends who have helped with layout construction. They are good guys with well-developed talents who have been a great help with the layout over the past decade. I build my own locomotives and rolling stock, but when it comes to the layout, I need the skills of friends.



1. Here's the crew that worked on the layout several years ago. Left-to-right we have Chris Thompson, Tom Johnson, Quintin Schini, Mark Plank, and Mark Belmonte.



## THE STURGIS LAYOUT CREW

The crew isn't always the same people, but these fellows have done a lot of work in my train room. All are fellow model railroaders, of course, and not a bunch of old guys. They have busy lives of their own, which can complicate gathering folks for a work session. In several cases, they are building their own layouts. Tom, Quintin, Bruce, Bob, Jason, and Maynard all have home layouts. Only Tom's is complete, but he always seems to be upgrading it. The other fellows are planning their own layouts.

Over the years there have been additional crew members, including Bruce Berta, Bob Blake, Jason Chasko, Maynard Mitchell, Earl Mur-



2. Jason Chasko and Mark Plank wiring track.

phy, and Jeff Youst. I am forever grateful for the many Saturday work sessions over the past 10 years.

Crew members often bring in specialized skills. Jason works in the telecommunications industry and is great at wiring the track. Mark is a jack-of-all-trades. He helped me build the layout shelf framing over one weekend!

Chris is a DCC- and sound-installation expert and has upgraded several of my locomotives. He is also a Norfolk Southern engineer, and knows how to operate a railroad. He trains new engineers for NS. Talk about a talented man!

Tom is a professional artist who can transform structures and scenery. In [4], he is applying the final paint on the rails, and aging



3. Chris Thompson is grading ceiling tiles for a new siding.



## THE LIMITED MODELER | 5



4. Tom Johnson works on layout scenery near a coal dealer.



5. The hand of Mark Plank installing a section of photo backdrop.

## THE LIMITED MODELER | 6

the appearance of the ties. Tom also paints ballast, dirt, and ground covers to finish the scene. I'm no slouch at art, but Tom has taught me many great scenery techniques. Thanks Tom!

As you can see in [5], the photo backdrop was installed after the scenery was in place so not to damage the photo. Mark lives only 20 minutes away, allowing me to "abuse" him regularly.

Another aspect of model railroader fellowship is going on photo safaris to snap pictures to use as photo backdrops, to use on



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TO STICK AROUND FOR A  
LONG TIME TO COME!

6. Tom Johnson and me on a photo safari. *Photo by Maynard Mitchell*



structures, and for modeling inspiration. You can see the cameras we use are in our hands [6]: iPhones. We found nothing more is needed. Smart phone cameras of any brand work well for model railroad applications.

## PROJECT REDUCTIONS

I've been thinking about why I scaled-back my hobby efforts and am in the process of reducing the size of my layout and train room. I believe a big reason is because I am manpower-limited. Some crew members have moved farther away, while others are busy raising their families. Tom and Mark remain available – thank goodness! Maynard can make it, but he lives pretty far away and is busy building his own layout. So, for the most part, I am pretty much alone.

Not having the time or human resources to build my original layout plan, I decided to scale back the size of the layout featured in recent “Limited Modeler” columns. However, this does not mean I have gained any wisdom. Really! I now plan to rip out the entire layout, re-finish the train room, then start the layout over again. Sturgis remains my inspiration, and the plan will follow details from the Sanborn maps discussed in the past few columns.

Am I crazy? Not really. The train room was never finished. It needs to be. I need to fix the water intrusion problem, but frankly, the quality of the layout is not what I want it to be. If I finish the room then start again with a new plan, I believe I'll end up with a far better layout that closely matches my Sturgis plans. The time would allow me to reassess the locomotives, rolling stock, and buildings on hand. I probably still have too much for my layout plans, and will need to thin the herd further.

The present Sturgis layout plan is for a 12'x24' layout. The original layout had been 12'x44'. This is a sizable reduction – about 45%. I know – many of you would consider such a reduction as insanity. However, for me, this is the right thing to do. Again, see the last several “Limited Modeler” columns.

Pausing for a moment to reflect over the past dozen years, I did learn a big lesson. I should have never built the layout until after the train room was finished and prepared. I was warned of this, but being bull-headed I started the layout in an unfinished room, and now I am paying for it.



7. NYC GP9 5756 pulls a local into South Bend on Dave's previous layout. The GP9 model used to be mine, and was one of the three NYC GPs featured in the May issue of *Running Extra*.

## DAVE FODNESS – A LIMITED MODELER

Another local model railroading friend is Dave Fodness. He moved from the Chicago area to Mishawaka, Indiana when he retired four years ago. Dave had a nice layout that had to be taken down for the move. He saved many of the structures for the new layout.

Dave is an excellent modeler and he moves faster than most when it comes to building layouts. His primary interest is operation. In his case, like Tom Johnson and me, Dave likes to operate local trains that do a lot of switching versus operating trains that run from location to location. As you can see in the accompanying photos, there was a lot of industrial switching on his layout. Dave is another “one-town” modeler.



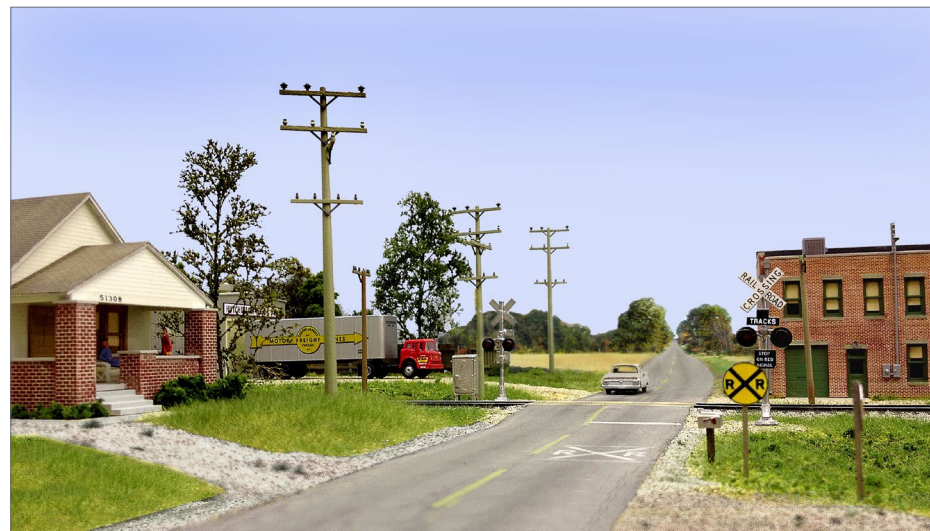
8. Dave's last layout represented the south side industrial area of South Bend with lots of switching.

Dave's scenery, structures, and track are all excellent. Notice in [9] that the ground is not completely flat. The minor roll to the land adds a lot to the realism of the photo.

## DAVE'S NEW LAYOUT

Dave and his wife – both retired now – live in a nice, story-and-a-half condo just east of South Bend. There is no basement. The layout is in an upstairs room and about half the size of Dave's previous layout. The new layout is not yet complete. Dave is still building and adding more detail and scenery.

Dave has not let the smaller space get the best of him. The new layout represents South Bend's industrial area just like his former layout. The setting is a passion for Dave and he was able to reuse many of the structures from the former layout.



9. Here's one of my favorite scenes from Dave's former layout where the railroad approaches South Bend.



While I really liked Dave's former layout, the new one is even better. The quality is further refined and track is enhanced. He used Peco switches and track. For sidings, he cut out some ties and re-spaced the remaining ties to represent lighter track, with effective results. The key to his rapid recovery has been reusing structures from the previous layout. The structures are well-done and fit right in to the new layout.



10. South Bend had a small engine facility buried in the industrial area. Dave added many details to make this come to life.



11. The Torrington Company made bearings for many years in South Bend. Dave used parts from a few kits to create this industrial facility.



12. South Bend had a range of industries. Here's a light industrial area on Dave's layout.



13. The original Drewrys Brewery was a large facility in South Bend. It was active into the 1970s and Dave has captured it on his layout.



## THE LIMITED MODELER | 13

Dave says that he is a builder and an operator. As I study these photos there is no doubt in my mind that Dave is a very skilled builder. His work in [12] includes a warehouse in the background at the right, an interlocking tower at the left, and a team track in the foreground. I will be operating this layout with him soon, and will see just how much of an operator he is! LOL!

I walked around the real Drewrys plant with Chris Thompson several years ago. I can attest to Dave's model capturing the feel of the site. The two tanks in the left foreground [13] are for storing grain for the brewing process.

Dave's work is nice, simple, and effective. With all the customer sidings on this layout, there is a lot of switching. Dave tells me his layout op sessions can take one to three hours.



14. The unloading dock and building for paper to the *South Bend Tribune*.

## THE LIMITED MODELER | 14

At one time South Bend was served by the Grand Trunk, New York Central, Pennsylvania, Norfolk and Western (NJI&I/Wabash), and the South Shore railroads. As you can see in a few photos, the layout is not complete. Weeds, ground cover, and ballast need to be installed. Out of sight of these photos is a layout addition Dave recently started. I can't wait to see that new development.

I hope you have enjoyed this month's column. In the months ahead we will bring you updates about Dave Fodness' layout. I hope to do an update of Tom Johnson's layout if he is willing. Tom and wife are thinking of moving to Florida now that they are retired. Tom's layout is one of the finest ever built, but may be short-lived. ☒



15. Studebaker cars were built in downtown South Bend. This was a large facility that received and shipped a lot of freight via rail. In Dave's 1971 setting, the plant was near the end of its life.



# GETTING REAL

column



MRH Running Extra | June 2019

**MARTY MCGUIRK USES IKEA  
IVAR COMPONENTS FOR ALMOST  
READY TO ASSEMBLE MODEL  
RAILROAD BENCHWORK ...**



**MY HO SCALE RICHFORD BRANCH IS AN** around-the-walls layout in an area approximately 22 x 30 feet on one side of a finished basement. A pair of stub-ended peninsulas jut from two of the short walls into the center of the space. I had some well-defined goals, self-imposed limitations really, that have resulted in a design that seems almost devoid of track when compared to other layouts of roughly the same dimensions [1].

As discussed in my last Getting Real column ([mrhpub.com/2018-06-jun/online/?page=59](http://mrhpub.com/2018-06-jun/online/?page=59)), I spent a great deal of time and effort “tweaking” a large layout over the better part of a decade. This time I was determined to start with a plan. I worked with my good friend and professional layout designer/builder Lance Mindheim ([www.shelflayouts.com](http://www.shelflayouts.com)) to develop my layout design.

Every decision we made centered on creating a final, buildable design that fits my lifestyle and interests. I’ve carried the same philosophy that drove our early layout design discussions into the construction phase of the Richford Branch.

► **MODELING REAL RAILROADS AND WHAT THEY DO**

## GETTING REAL | 2

That philosophy is simply “Maximize the fun stuff; minimize the stuff that isn’t fun.” So simple it almost seems daffy, but what it means is “take shortcuts wherever possible without compromising quality.” I cannot overstate how important this idea has become to the entire project. It was so important that until it became my mantra, I seriously considered not building another layout.

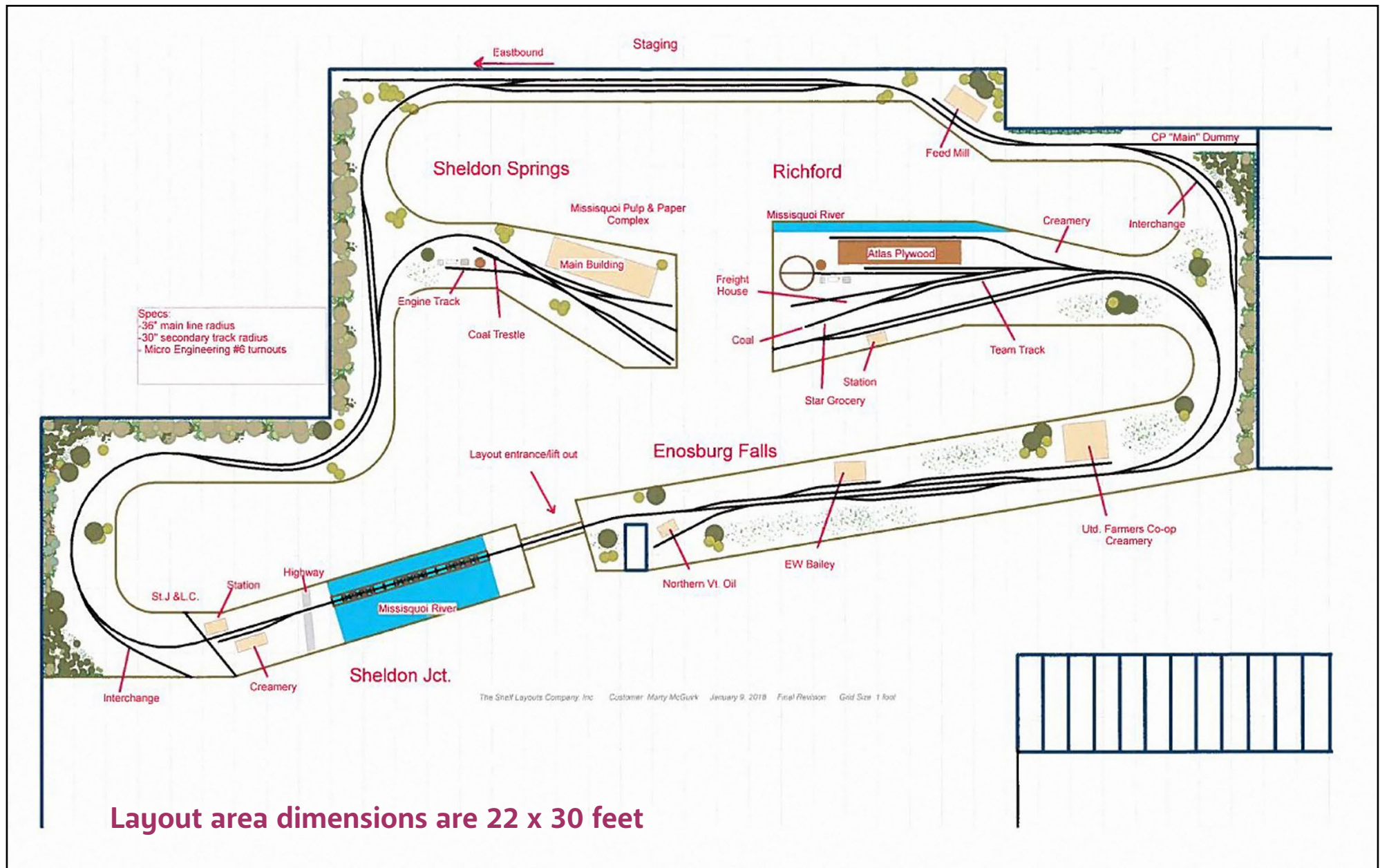
In all aspects of life, it’s easy to fall into a “clear the decks” mentality which takes the form of “once I get, A, B, and C done then I’ll finally move on to what I really enjoy.” Lance summed it up perfectly. “In your case it is ‘once I get a layout built, then I can finally move on to what I really enjoy which is building freight cars or scenery.’” Of course, the last layout and its constant build and rebuild cycles meant I never really got back to the modeling I built the thing for in the first place.

### **BENCHWORK BUILDING TOOLS AND TIPS**

My assortment of benchwork building tools is typical and likely to be found in any other model railroader’s tool box. A chop saw for making square cuts in dimensional lumber, (lots of) clamps, a cordless drill, etc. For this project I added two tools not typically found in lists of basic benchwork tools and both are useful enough to be worth a mention.

### **POCKET SCREW JIG**

One thing I’m doing on this layout (lesson learned from last one!) is using pocket screws primarily to permit easy movement of cross members when/if that proves necessary. I’m avoiding screws ending up against the wall, buried behind scenery, or behind the fascia. The pocket screw jig holds the wood in place as one or more precisely angled holes are drilled into the wood. Since the screws



### 1. Overall plan for the Central Vermont Richford branch.



are at an angle, they form a remarkably tight joint. Of course, you don't need this to build benchwork but who doesn't love an excuse to buy more tools?

## LASER LEVEL

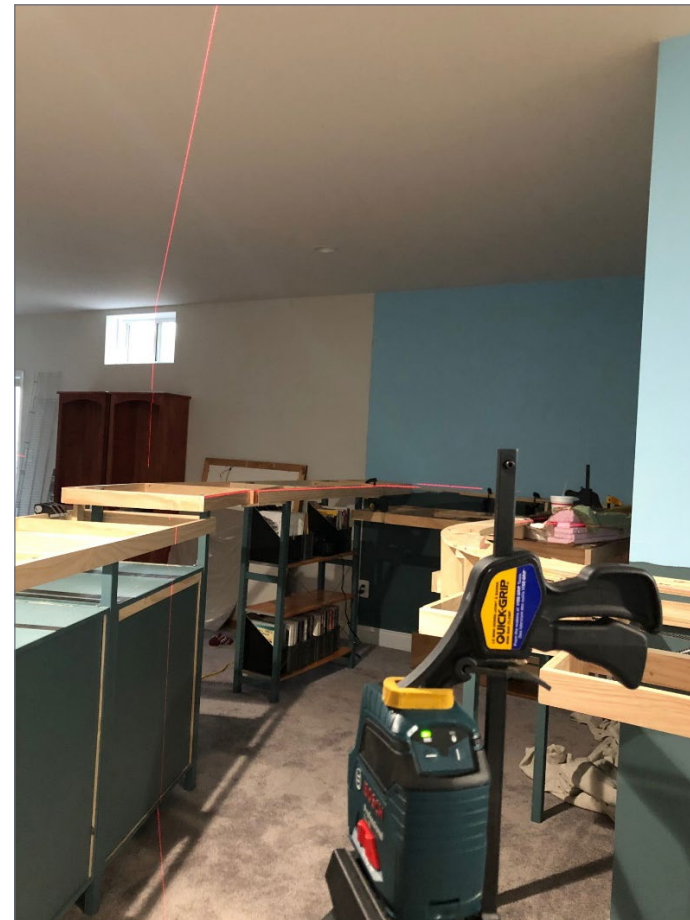
The pocket screw jig is nice to have but I'd put this second tool in the "must have" category. If you have a medium-size layout or larger, and if you intend to incorporate any grades into your track, it is essential. For years I've used a series of 1, 2, and 4-foot levels of various degrees of accuracy and reliability. While I still use conventional levels, I recently acquired a laser level [2].



2. The laser level has proven itself a valuable addition to the benchwork builder toolbox.

On prior layouts, leveling the sub-roadbed meant clamping plywood pieces in place while balancing a bubble level, all the while hoping the level or plywood, or both, don't end up on the floor. With the laser I simply set a level line for the plywood height, raise the plywood until the laser illuminates the top edge of the plywood, and then clamp everything in place [3] before securing.

I ended up with a \$130 Bosch level, but I've seen others, including a DeWalt, in action. The levels have all kinds of features. Those with



3. The laser makes it easy to verify the track position across a long distance.

more features have a higher price. I think the critical feature is auto-level (meaning the laser will project accurate horizontal and plumb (vertical) fixed lines, even if the unit is at an angle.

## **READY TO ASSEMBLE BENCHWORK ... FROM IKEA???**

My goals for the benchwork are simple and straightforward:

- Strong, with straight and square materials
- Visible wood painted and/or stained prior to installation. In the previous layout room, I installed the layout legs before painting and could never figure out how to paint or stain them without messing up the carpet, so they remained raw wood for the life of the layout.
- Storage underneath for layout building supplies and materials during construction that could be used as display shelves for finished models once basic construction was complete.

This last one was requested by my wife, although I certainly didn't object:

- Because the layout occupies one half of a finished basement, it should look like a cohesive part of the room, not a perpetual construction zone. To that end, I painted the walls under the layout the same color as the benchwork legs. The fascia will eventually be the same color, lending a finished look to the layout.

If you plan to build a model railroad layout of any size and haven't purchased lumber in a while you might experience sticker shock. The increase in lumber prices (and corresponding decrease in quality) for even a small or medium layout can equal the cost of several DCC/sound equipped locomotives. My friend Bernie Kempinski used IKEA Ivar shelving units for the benchwork under portions of his O scale Civil War layout. I ran into him and his mom at our local IKEA several years ago when he was purchasing more

of the same shelving for his HO Port of Los Angeles. After seeing it in place on Bernie's layout and after pricing the 1x3s, 1x4s, etc... I'd need, I investigated the Ivar system. The lumber was straight, strong, and the entire system offered shelves and even cabinets. I figured the cost was a little cheaper than building my own, and key elements like cabinets and legs were precut.



4. An early view of the first set of Ivar supports. This is the Enosburg Falls area of the track plan in [1]. I used five of the 48" tall wider leg sets for this section. You can see at the far right I needed to lower the open grid to clear a light switch. Murphy's Law saw to it that the height of the standard Ivar shelves put the benchwork dead center on the light switches!



## WHAT IS IVAR?

The Ivar system consists of unfinished leg “sets” in two widths and several heights, with corresponding shelves and either wood or metal cabinets. It requires some effort to finish, although it takes stain and paint well. I did find it necessary to treat the wood first and then apply two coats of paint or stain to get a nice finish.

I used a version with 48” tall legs in both widths, 11 ¾” and 19 5/8”. You could use the taller shelves. I think they go as tall as 96”. If you didn’t want to mount the backdrop directly to the wall, you could use the taller shelves, and remove the front Ivar legs down to the layout height and mount a backdrop to the face of the rear legs, essentially creating a stand-alone layout. You could even use the system for double-decked layouts. While the vertical legs would partially block the view of the lower level, this approach would be ideal for supporting something like an unscenicked staging yard beneath a visible deck.

In the end, I used the IKEA Ivar system for the layout underpinings and ripped plywood for the open grid benchwork. Using the Ivar system proved to be less expensive than purchasing dimensional lumber. The fact that it was literally ready to paint and screw together meant that constructing the legs, shelves, and storage cabinets did not tax my rudimentary cabinetry skills and woodworking tools. And though I painted and stained the components, I had a lot of help from my good friend Stic Harris in assembling the various pieces and building the benchwork.

I’ll let the photos and captions do the rest of the talking. The Ivar system is remarkably flexible and I recommend it highly for supporting open grid and L-girder benchwork. The worst part of the project was the three weekends and several evenings spent painting the stuff!



5. Here’s how I bridged the distance from the end of the Ivar shelves to the wall. You can also see the pocket screw holes. I lowered the base height slightly to clear those light switches. Fortunately, a curved wood trestle will eventually sit here so it worked out well. If pressed, I will claim that I planned it that way!

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... if you don’t share us, we don’t grow**



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6. The vast majority of the benchwork will be open grid, but for the peninsula's odd shape I chose L-girder for both the Richford (shown) and Sheldon Falls peninsulas. A wide Ivar cabinet provides storage and stability to the peninsula. To allow for a riverfront mill and turntable operating mechanism, the peninsula benchwork is lower than the Ivar legs with L-girders screwed directly to the legs. After securing the joists, the top of the legs will be trimmed flush.



7. A support column near one end of Enosburg Falls [1] supports layout benchwork. I used a pre-made triangular bracket (again, from IKEA!) screwed into 1 x 3 "L" shaped pieces that were long enough to span the benchwork.

★★★★★  
RATE THIS ARTICLE





8. This image shows how the Ivar shelves support the open grid benchwork sections. Note that it's not necessary to have Ivar units along the entire length of the layout - this grid benchwork spans the area between the Ivar units. In some cases I added a single leg, cut from the Ivar support posts, if I felt the benchwork needed some additional support. Sky blue paint above the layout, and everything beneath the layout painted or stained blends everything together and makes the layout look presentable even during the initial stages of construction.

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



9. I was concerned about anchoring the benchwork solidly enough to prevent the Sheldon Junction side of the lift out section from shifting. A support column firmly anchors the right side of the layout, seen just to the right and in [7]. Those Ivar cabinets are filled with back issues of model railroad magazines and are not moving anytime soon. Note how the Missisquoi riverbed section is lowered with the center cabinet legs trimmed flush.



10. Just to the left of the bridge, I installed a 12" deep set of Ivar shelves. Note how the 24" wide open grid benchwork is centered on the 12" wide legs.



## Marty has a video!

11. Marty has a tour video on YouTube showing his new layout space and benchwork. Check it out! ☒







# *How a module Grew into a layout*

*JASON MILLER built a module and got  
inspired to do a layout...*

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## EIGHT AND A HALF YEARS AGO, I BEGAN A

journey to test my skills and see if model railroading was a good fit as my hobby.

It began with a module, a test bed to try out my skills for a larger endeavor later on. I started with a small wood frame, some sub-roadbed, a little track, a turnout, a plastic structure, and some really big ideas.



J. Fugate

### THE "ONE MODULE" APPROACH (TOMA)

TOMA uses modular methods to build a home layout rather than a traveling show layout. The idea is to start small, build one or two modules to completion, and add some staging on the ends to allow

running trains. A TOMA layout is something that's small enough in scope you can likely complete it in months instead of years, and you have something finished-looking to show for your efforts.

If you had fun and would like more layout, then repeat the process, adding another one, two, or three modules and finish those. If at any time you find you're having too much fun running trains on a finished-looking layout, then too bad!

For a good bibliography on all things TOMA that we've published, see the August 2017 issue of MRH: [mrhmag.com/magazine/2017-08/online/22](http://mrhmag.com/magazine/2017-08/online/22).



1. Jason's original "shed" at the rear of his property houses his layout. It has since been expanded.

It was, in some ways, Joe Fugate's TOMA (The "One Module" Approach) eight years before its time.

What building the module actually did was inspire me to build a bigger layout. It gave me the confidence that I could do most of the skills required. In fact, it worked well enough that it now takes place of honor on the layout.

This article describes how I built that first module as a practice module, how it became incorporated into the first scenery-complete section of my layout, and how it became a signature scene.



## MODULE GREW INTO A LAYOUT | 5

I show how I built the original module and all the practice components I used – and how I integrated it into the layout, and finally, how I detailed it to its present-day state.

### THE IDEA

Some time ago, my wife Linden, stated, “you need to get a hobby.” Needless to say, I think she will forever regret saying that! But it inspired me to fulfill a childhood dream.

For many years I had wanted a model railroad layout. As a child and teenager, I never had the space for one. I did have a Tyco Road & Rail set that I would set up on the kitchen floor.

In my mid-30s, with my own family and home, and approval from Linden, the dream finally became reality. I had plans and a builder in mind to build a self-standing “shed” in our rear yard.

When we completed the shed’s concrete slab in June 2010, I thought it would be a good idea to build a small module to practice the skills needed for doing a larger layout, and to complete that module first with basic scenery.

### THE CONSTRUCTION PROCESS

My idea was to build a small wooden frame around 3 x 2 feet (900mm x 600mm) so I could practice building a frame with wood, one I could join with other modules if I chose that method.

I made the frame [2] from 3½ x ¾ inches (90mm x 19mm) pine. I fashioned it so it could easily connect to other modules or to a layout framework. I used plywood the original subroadbed, but I also changed it for a lauan pine door skin and a canite top. Canite [3] is a substance made from sugar cane husk here in Australia. I thought it would be a good choice with similar qualities to Homasote.

## MODULE GREW INTO A LAYOUT | 6



2. The pine frame constructed with plywood top.



3. The lauan pine door skin and Canite sub-roadbed Jason used on his module.

After completing the module, I changed my direction with the layout and went for a 15/32 inch (12mm) 5 ply plywood. To date, I've had no issues with warping when using the 12mm ply.

### BUILDING A SCENE

From the outset, I wanted the layout to have an industrial feel. I had read a few books by this stage, and visited many online layouts to get a sense of space and how others achieved the feel and space to do a scene justice, to be believable, and to work prototypically.

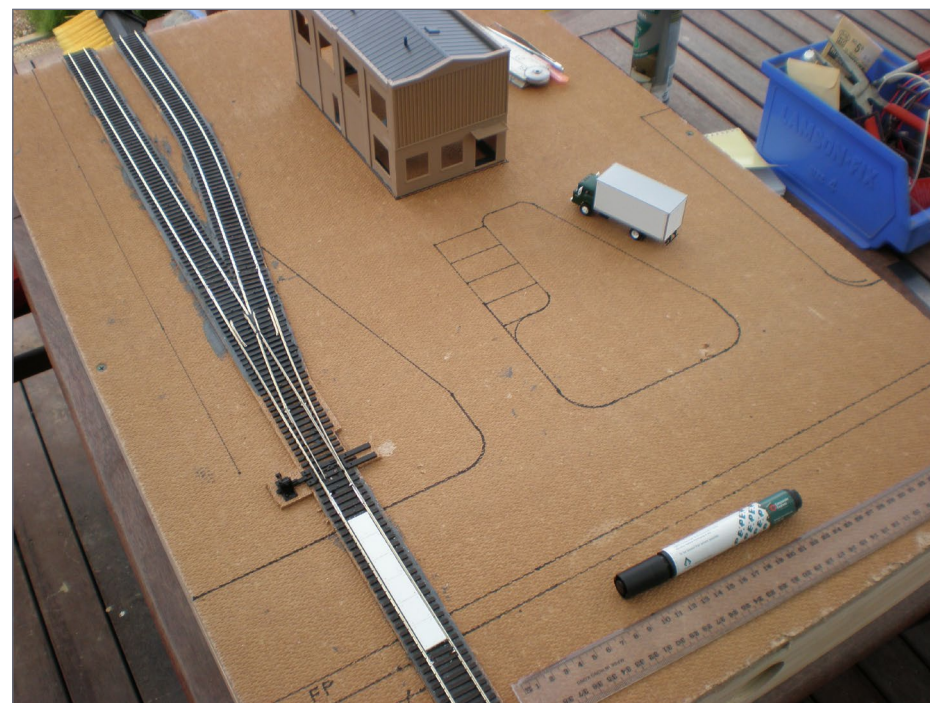
One thing I noticed early on – and I admit I fell for it too – was the over-compression of buildings and scenes. My original drawings had large industries crammed in and sitting on top of other industries. When I built the module frame and had the sub-roadbed installed, I installed the track and placed a GP30 locomotive, a caboose and three or four 40-foot boxcars on the module.

Then I placed the Walthers Modular kit I had built, and marked out some entrances/exits and a small yard all the way around the complex.

Straight away, I realized how much my perceived scale was off on my plans for the layout.

As can be seen [4], the dimensions for the industry infrastructure are not that bad. But the siding for the industry limited it to one 40-foot boxcar on the straight section, and maybe one more spotted in front.

Based on what I had learned from marking out this first module, I really needed to take another look at the layout plan as a whole. Starting small and working through the entire process to completion allowed me to find problems up front.



4. The industry placed on the module with hard-standing areas and access points marked.

### BUILDING ROADS, CURBS, AND SIDEWALKS

When I finished installing the track, turnout, and crossing, and marked-out the areas to be paved in concrete, I needed to find a method to model the concrete areas.

I'd looked through the new *MRH*, looked in my Local Hobby Shops (LHS) and trawled the internet trying to find a solution that was easy to install, easy to paint and weather, and one that could be replicated multiple times with the same sort of finish.

An industrial-themed layout means there is a lot of concrete. I'd looked at the plaster-type products and ruled them out straight away. I just didn't like the idea of the mess.



## MODULE GREW INTO A LAYOUT | 9

I used a small piece of styrene sheet to make the road/rail crossing. It glued down to the track easily with CA, I could carve it so I could put in concrete joints, and it also took acrylic paint from an airbrush well.

So in one of those “ah-hah” moments, I decided to give sheet styrene a go for my roads and sidewalks. It is cheap, readily available from most LHS, and easy to work with and install.

I used 0.030” Evergreen sheet styrene [5] for the road surface.



5. The 9030 Plain sheet, which is 0.030” (0.75mm) thick was the ideal sheet to use for the road surface.

**Please include  
a phone  
number when  
contacting  
MRH**  
(in case your spam  
filters eat our  
email response)

## MODULE GREW INTO A LAYOUT | 10



6. The finished crossing using Evergreen sheets. The road surface lies just below the rail head.

When I laid the 0.030” sheet on top of the ties of Peco Code 83 flex track, it would sit just under the top of the rail head on a crossing [6].

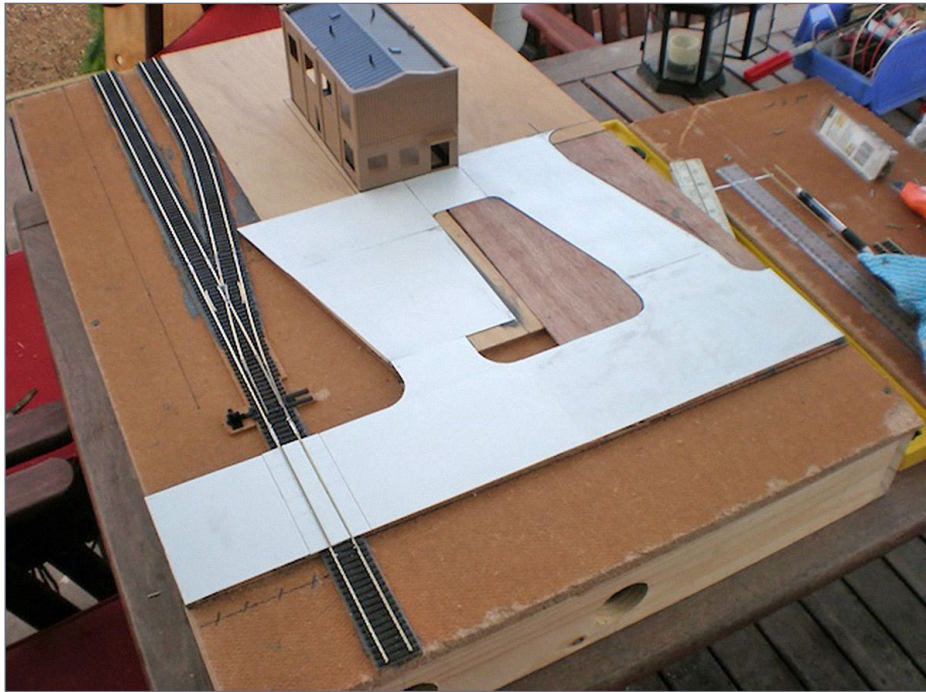
I cut styrene sheets for the roads, entrances, and exits, then secured them to the module top with a flexible caulk.

I secured the main areas [7]. Next, I moved to installing the sidewalks and curbs in the street and the property entrance and exit.

I used Evergreen Square 6x6 strips in HO scale for the curbs.

I glued down the curbs with Evergreen solvent-based glue. I manually formed the rough curves with my fingers, and then glued it in place.

## MODULE GREW INTO A LAYOUT | 11



7. The road, entrance and exit finished with the styrene sheet on Jason's module.

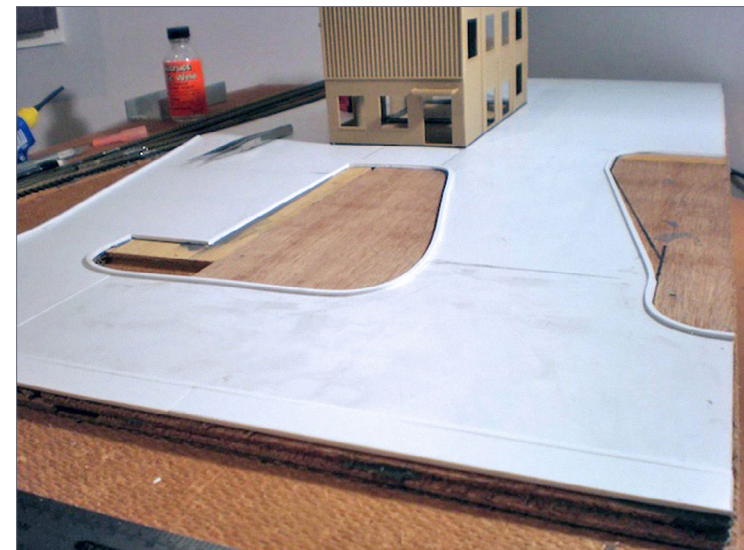


8. The 8606 is 0.066" x 0.066" (1.68mm x 1.68mm) or 6" in 1:87 - HO Scale strips used for curbs.



## MODULE GREW INTO A LAYOUT | 12

This process worked really well [9]. I had no issues forming curves into the curbs so long as they were not overly sharp. Once I had secured the curbs, I sanded the top edge with sandpaper to round-off the edges.

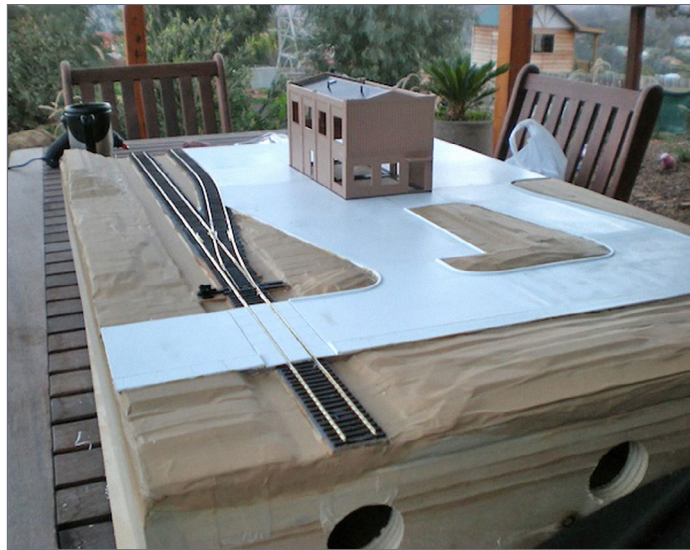
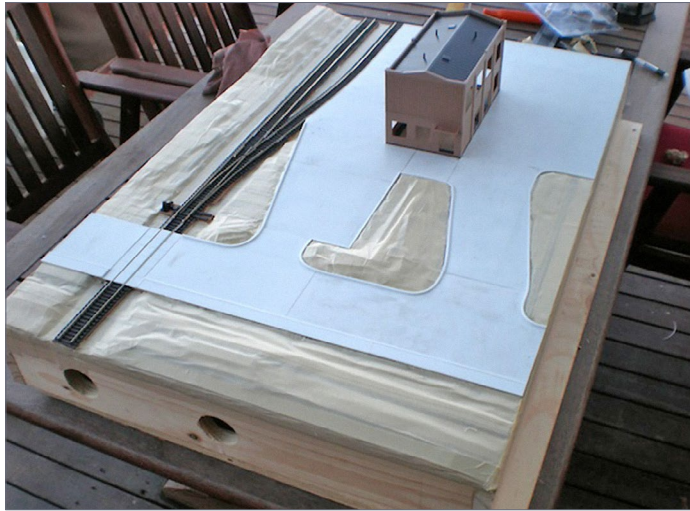


9a, b. The styrene curbs using Evergreen HO scale strips.



## TERRAFORMING THE GROUND

To form ground and terrain, I wanted to try Joe Fugate's method of using cardboard strips and painter's tape as the base, followed by a ground goop mixture.



10 a, b. The module with the cardboard strips and painter's tape installed to form the terrain.

Once I had a rough idea of the terrain I wanted, I placed the cardboard strips and tape onto the module [10a,10b]. This step makes a huge difference to the feel and look of a plain "Plywood Pacific."

The cardboard-strip method goes very quickly and easily. I used a hot-glue gun to secure the strips.

As seen in the photos, finishing off the terrain with a little earth-colored paint makes all the difference to a module or layout.

## GROUND GOOP

With the basic terrain shape and form created, I added my ground goop mix to the module. To make the mix I combined plaster, cement, vermiculite, and water. This forms a great terrain for adding zip texturing onto, and it can be sculpted.

The mixture is as follows:

- 4 parts fine vermiculite
- 3 parts patching plaster
- 1 part Portland cement

Once these ingredients were mixed well, I added water until I got the consistency of soft ice cream.



11. Ground goop mixed and ready for application to the module.



## MODULE GREW INTO A LAYOUT | 15

I found I had about 30 minutes of working time to get the ground goop onto the terrain before it started to set. To improve working time, and to smooth the final mix on the module, I sometimes sprayed it with a little water.



12a, b. The finished terrain on the module.

## MODULE GREW INTO A LAYOUT | 16

I used a spatula and my fingers for the best results to apply the goop to the tape.

Once applied, I let the ground goop dry overnight before applying the zip texturing.

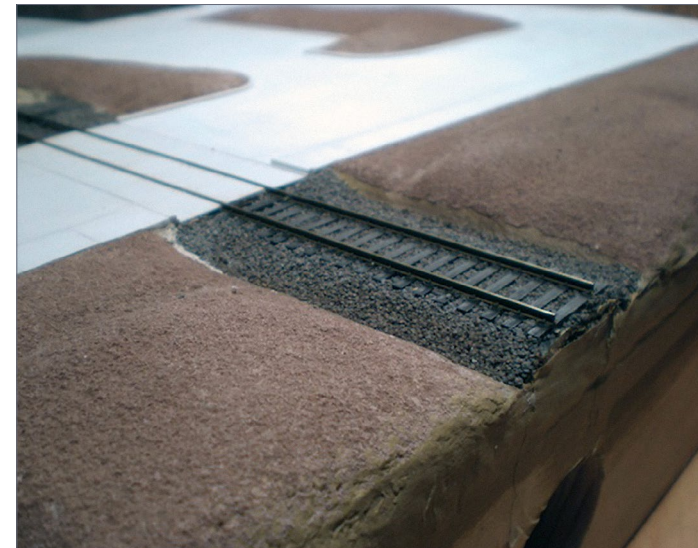
### ZIP TEXTURING

The final stage for the terrain is to add zip texturing for a dirt look. This is a mixture of plaster and various tempera paint powders.

The mixture for a tan color on the module was:

- 1 part black
- 1 part brown
- 1 part yellow
- 24 parts plaster

Before I added texturing, I masked any areas not to be textured, including all track work. Painter's tape worked fine for this.



13. The finished zip texture on Jason's module.



After mixing the dry colors and plaster, I sprayed water over the ground goop, then used a fine sieve to dust the texturing powder onto the terrain [13]. I found it best to do several light coats, letting the mixture dry in between. If I happened to apply too much water, I just sifted a little more texturing mixture over the top.

Once dried, there should be no loose fine powder. I allowed it to dry overnight before continuing.

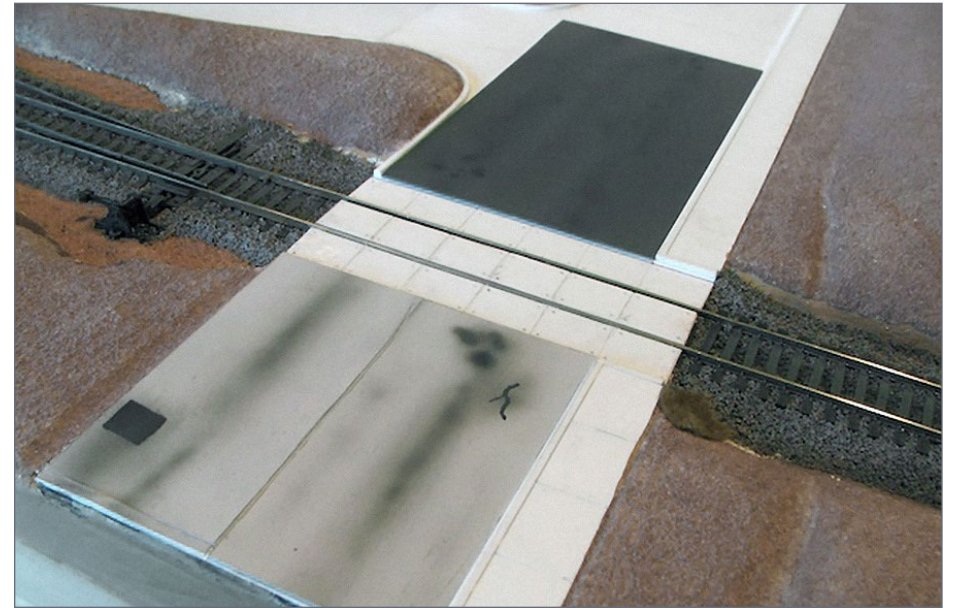
### ASPHALT ROADS AND CONCRETE AREAS

Next I needed to create some asphalt roads and concrete hard-standing areas for the industry and the module.

To begin, I started experimenting with some spare flat sheets of styrene [15] and various combinations of acrylic paints using an



14. The final texture looks just like real dirt.



15. Jason's practice asphalt and concrete roads, colored using an airbrush.

airbrush, and various PollyScale blends. Any fine-grained acrylic paint was suitable for this.

I settled on these formulas:

- Asphalt – Base coat of PollyScale SP Dark Gray  
Blended weathering coats of PollyScale CSX Gray  
Blended weathering coats of PollyScale Grimy Black
- Concrete – Base coat of gray acrylic house paint  
Blended coats of PollyScale Concrete and PollyScale Rust.

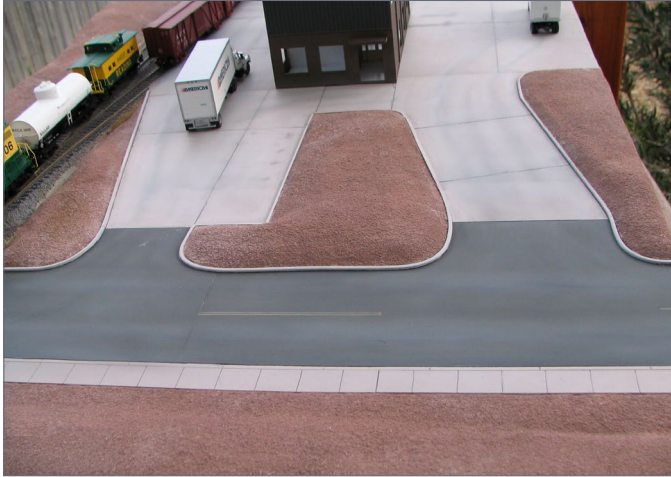
PollyScale is no longer available. To match colors to my formulas, check the charts in [mrhmag.com/subscribers-only/painting/acrylics](http://mrhmag.com/subscribers-only/painting/acrylics).



## MODULE GREW INTO A LAYOUT | 19

Once I decided on the final formulas, I painted all the styrene surfaces on the module.

After I applied the base coats, I blended-in the other colors and added the highlights and finer details, with the result in [16, 17, 18a, b].

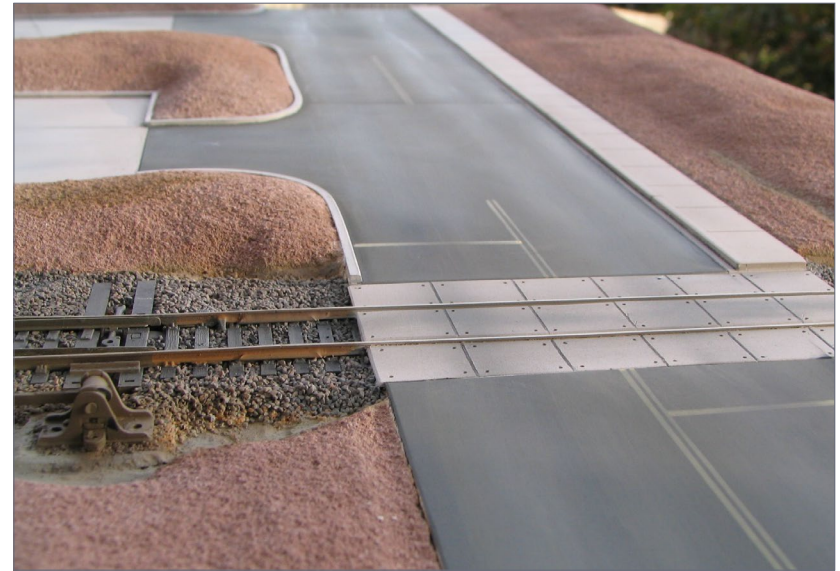


16. The final asphalt road and concrete areas.



17. The blending was achieved with an airbrush, and then lightly scuffing the surface with fine sandpaper.

## MODULE GREW INTO A LAYOUT | 20



18a, b. Outdoor afternoon light shows of the natural color of the zip texturing, the asphalt, and the concrete.



## USING STATIC GRASS

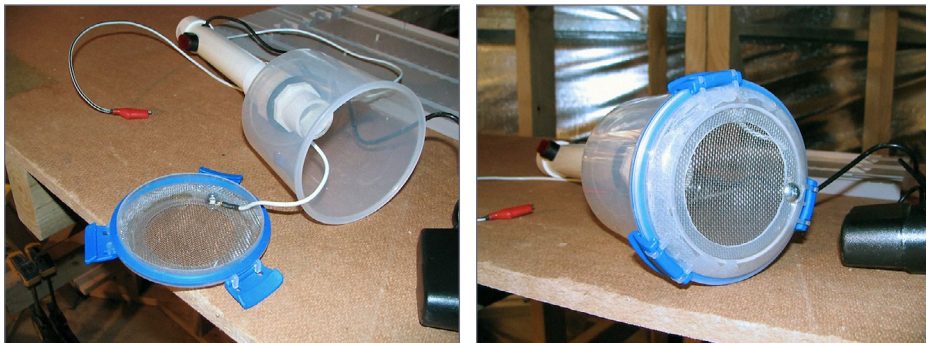
After completing the terrain and roads, I needed to add some grass. Again, the whole idea of this one module was to try everything that needed to also be done on a bigger layout.

I mulled over the idea of buying vs. building a static grass applicator. Luckily, about the time I was ready to apply static grass, *MRH* had a forum thread on building one. The best bit was that the ion generator was made here in Australia, so I built my own [19] and it still works great today.

I used a summer blend of static grass. The application went easily by using white glue as the base. I applied the grass along the road edge, right-of-way, and between the entrance and exit of the industry [20]. With the addition of structures and details, the module looked quite nice. Now what?

## AFTER THE MODULE

With the module complete, I began looking at the larger layout and how I might incorporate my module into it.



19. Jason's home-built static grass applicator.



20. The finished static grass on the module. The color represents summer grass.

I had to think about how the scene would flow into the remainder of a shelf section.

I added the module into my AnyRail plan [21] along with new shelf section behind the layout's center peninsula. I finally placed the module in the lower left-hand corner of the plan.

I had room on the right side of the module to add another small industry that would help hide most of the joint between the module and the new shelf layout. It also allowed me to hide one of the holes in the backdrop for the Reading branch [22a, b].

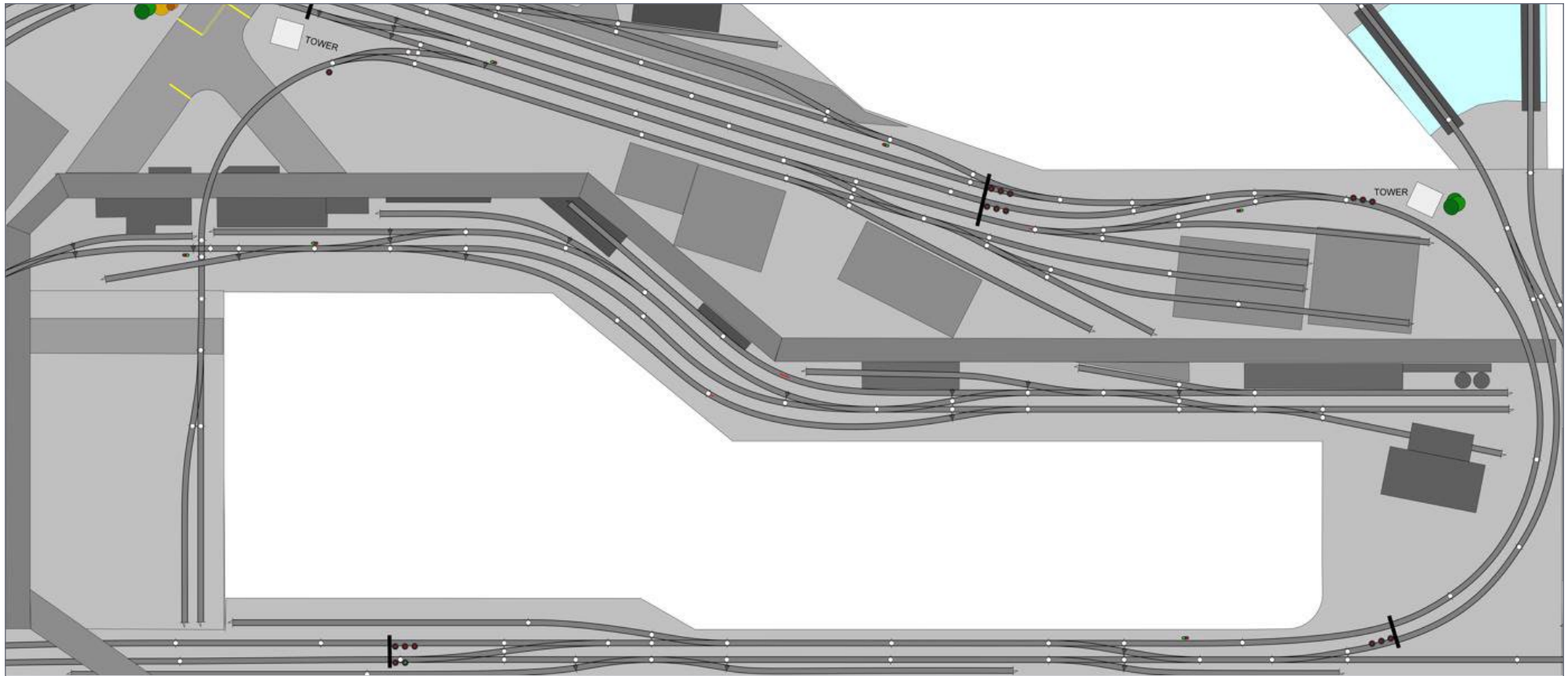
The new industry would be a small warehouse with a loading dock off a small siding. As a first step, I added an entrance from the existing road on the module.

## Jason's current layout plan

Dimensions of the shed are 11 metres x 4 metres (36' x 13').

This part of the plan is behind the center peninsula of the main layout area.

The plan was designed in AnyRail - Software program.



21. The module added to Jason's AnyRail software plan. This shows the entire shelf area of his layout.



## MODULE GREW INTO A LAYOUT | 25

I added two separate layers of 1/8-inch cork sheet to build up the module to the level of the new finished benchwork. I secured the cork sheets with exterior latex caulk [23].



22a, b. Removing the existing scenery, zip texturing, ground goop, and cardboard strip terrain.

## MODULE GREW INTO A LAYOUT | 26



23. Leveling the module with the new benchwork required using cork sheets.



24. The styrene sheets installed and ready for painting to represent asphalt and concrete.



## MODULE GREW INTO A LAYOUT | 27

Once the two were level, I added the styrene sheet that would form the asphalt entrance from the existing module road to the new industry. Again I used latex caulk to secure it [24].

I added the painter's tape to all of the existing module sub-base and the newer areas of the shelf layout. The tape, once painted, gives some tooth for the ground goop to adhere to, and also stops moisture seeping through [25].

Using ground goop, I blended the new work to the existing scenery on the module and formed it into the newer sections of the shelf layout [26].



25. Jason used painter's tape to seal and provide a base layer for the scenery.

## MODULE GREW INTO A LAYOUT | 28



26. The new ground goop added to the existing module scenery.

Once the ground goop had dried, it was time to zip texture the existing module areas and the new shelf section.

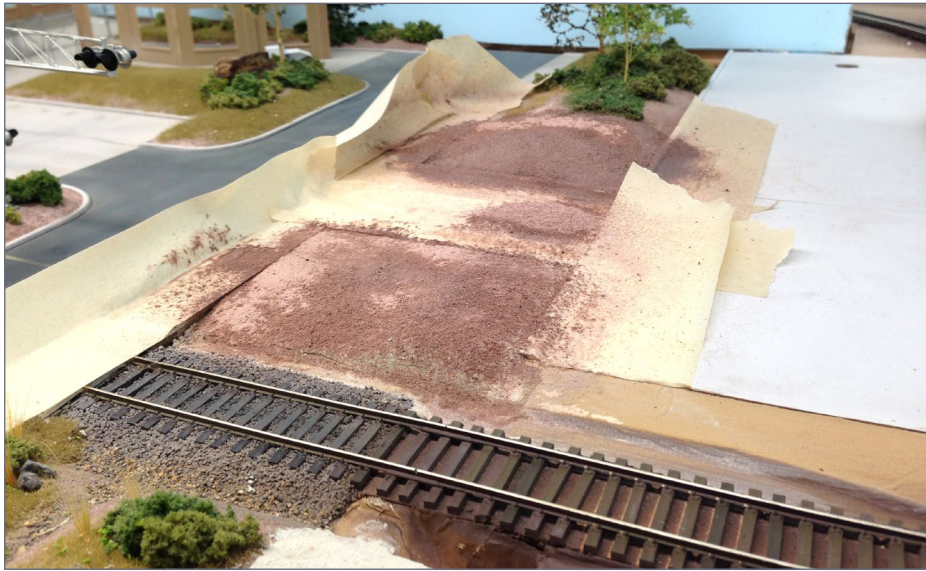
I used the same formula applied the original module. Once I had all the existing scenery masked, I added the texturing with a fine sieve [27, 28].

### AIRBRUSHING THE ASPHALT AND CONCRETE

The next step involved airbrushing the asphalt entrance and concrete area for the new industry. I used the same formula of PollyScale paints. I started by masking the areas of existing scenery, and sprayed the base coats first [29].



## MODULE GREW INTO A LAYOUT | 29



27. Zip texturing added to the scenery sections.



28. Masking tape removed, and the zip texturing allowed to dry overnight.

## MODULE GREW INTO A LAYOUT | 30

When the paint had dried, I blended-in the new asphalt, using an airbrush to give it a used, but newer look [30].



29. The asphalt base color sprayed using an airbrush.

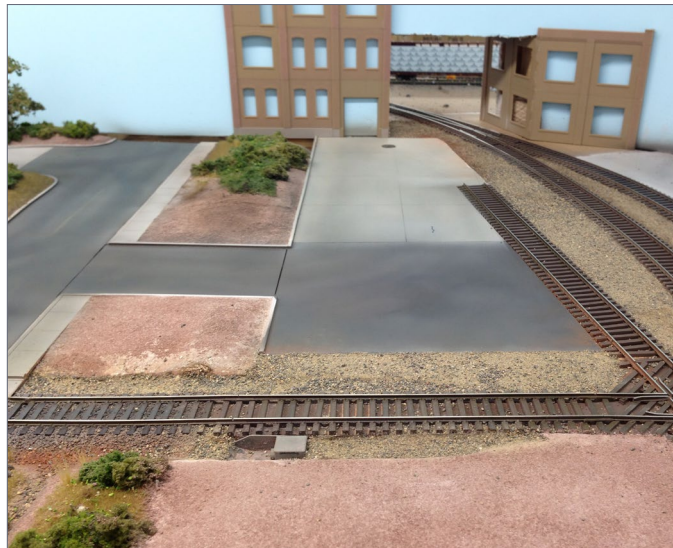
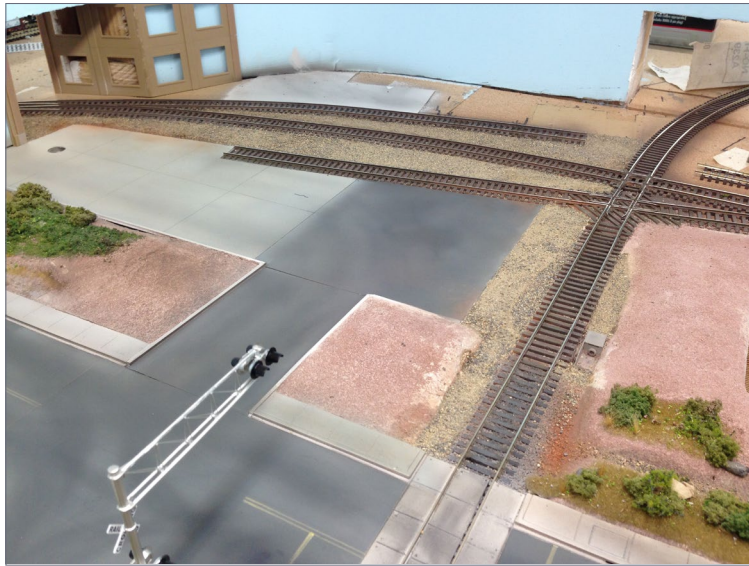


30. Light gray highlights and grimy black accents blended into the asphalt base color add a little age to the pavement.



## MODULE GREW INTO A LAYOUT | 31

Once the asphalt areas had completely dried, I moved on to the concrete hard standing area, again using the same paint formula as on the original module.



31a, b. The completed industry asphalt, concrete and scenery blending the module and new shelf layout together.

## MODULE GREW INTO A LAYOUT | 32

Once the concrete was done and had dried, I added expansion cuts into the concrete area with a pencil, then blended the concrete and asphalt areas together and matched them to the existing module. I used an airbrush with varying lighter shades of paint for this, matching it to the existing module road, and highlighting traffic wear on both [31a, b].

I also added real sifted fine dirt on the right-of-way and blended this into the existing scenery.

### PHOTO BACKDROPS

One goal for the layout has been to get a great deal of realism. Achieving realism probably is the most difficult part of making backdrops.

Some people leave them blank or painted sky-blue. Some paint them, while others use commercial backdrops. Some modelers use real photo backdrops.

### MRH product awareness survey

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*Seems like almost everyone wants a chance!*



## MODULE GREW INTO A LAYOUT | 33

Using a photo or color picture as your backdrop is a great idea. It's realistic, could be prototypical, and it can make a scene really pop!

I began by experimenting with various photos [32a, 32b] of industries from the internet. I started out looking for an industry that fit the era, area, and matched the perspective of the scene.



32a, b. Early tests of the photo backdrops.

## MODULE GREW INTO A LAYOUT | 34



33a, b. Jason's completed photo-realistic backdrops make his original module scene pop.



## MODULE GREW INTO A LAYOUT | 35

Photo [32a] has a great perspective and vanishing point when looking straight at the scene. The placement of the tractor-trailer helps with the visual perspective and draws the eye to left.

Once satisfied with the backdrops, I printed them out on premium color paper and then cut them out with an X-Acto knife. I secured them to the backdrop using double-sided tape.



## MODULE GREW INTO A LAYOUT | 36

As can be seen in [33], a few hours spent finding the right photo can yield very realistic backdrops with very little cost. The continued depth to the backdrops really adds to the entire scene.



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MOUTH TO GROW AND A  
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WE'RE IS MORE LIKELY TO  
STICK AROUND FOR A LONG  
TIME TO COME!

34. An upper valance and lower fascia frame the scene and enhance the feeling of increased depth.



### **SHADOW BOXES, ADDING DETAILS, AND STAGING THE SCENE**

When I had completed the module and shelf layout scenery, I wanted to add a fascia panel and upper fascia so that entire module and shelf scenes were shadow-boxed.



35a, b. (Above and following page) Reading SW1500 #2770 spots a Railbox in the siding as the crossing signals flash.

I really enjoy the effect of having my eye drawn into the scene by this effect. In fact, the whole area has been a favorite of my operators because of this – and the fact that it is a fully finished section of the layout with scenery.



## MODULE GREW INTO A LAYOUT | 39

The fascia and upper fascia use 1/8-inch (3mm) MDF board. It bends easily into smooth curves, is lightweight, and is easy to secure to the framework.

One of the offshoots of the hobby I enjoy as much as building and operating my layout is staging the scenes and photographing them at eye-level for a 1/87-size human.



## MODULE GREW INTO A LAYOUT | 40

This and previous photos are those that I took in 2019. I've done some mid-level detailing to this point. I added working cantilever crossing signals, crash barriers, an interlocking tower, finer scenery details, and I staged the industry.

### CONCLUSION

Eight years ago, I never thought that a simple module would lead to the layout that I have today. It became the catalyst for me to realize that I could develop the ability to build a much bigger layout.

I also found the resulting module also to be worthy as a signature scene on the later layout, and it became the first section to have fully completed scenery.

So what advice would I give to someone about to start building a layout?

★★★★★  
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36. Jason's completed module incorporated into his narrow shelf section, a signature scene on his later layout.

Do exactly what I did: build a small module, have a go at building the frame, laying the sub-roadbed, laying some track and a turnout, painting the track, spreading ballast, forming some terrain, laying out some scenery, building a structure, and weathering the whole thing. Then run some trains on it.

Then – after all of the above, if you enjoyed the process, made a few mistakes, learned some tricks and shortcuts, managed to finish it without getting too frustrated – then I think you'll be ready to have a go at building a full-sized layout. ☑



## JASON MILLER



Jason lives in Diamond Creek, Victoria, in Australia. He has been building his HO scale layout for the past eight years. The layout is HO scale and is based on the Reading Lines between the early to late 1970s, and into the Conrail merger era.

Jason is a professional firefighter and has been doing this for 16 years. When not at work, he enjoys spending time with his family. Jason is married to Linden and has two sons, Lachlan, 11, and Toby, 7. ■





1. Making your own custom photo backdrop can visually extend your layout space and make it look much larger as in this example. Can you spot the backdrop seam? Jim Six used Photoshop Elements to edit a photo and backdate it for his 1927-era layout. In this article, we show how you can do this too.

But how do you go about making such a photo backdrop? Let's see how and get some practical advice from other regular MRH forum contributors who have made photo backdrops.

## PREREQUISITE ONE: LEARN TO USE PHOTO EDITING SOFTWARE

Before getting to square one with your own photo backdrop, you need to become proficient with photo editing software. If you've never used photo editing software, prepare for a steep learning curve. Becoming comfortable with this software is the biggest hurdle to doing your own photo backdrops.

Besides the gold standard Photoshop, there are other options, including some free ones. We'll review a few of these options here, but our list is far from exhaustive. We're sure readers will also recommend software they have used, so check this article's comment thread as well before deciding on which software to go with.

Before we dismiss Photoshop out of hand, let's review the lay of the land with Photoshop as of 2019.

**Photoshop+Lightroom:** These days, Adobe offers what they call a photography software "rental plan" (termed Creative Cloud) for \$9.99 per month, paid a year in advance. It includes not only



# Making layout photo backdrops

Running Extra | June 2019

**THE MRH STAFF – WITH HELP FROM BILL BRILLINGER, SCOTT THORNTON, & JIM SIX** – looks at how to make your own photo backdrop ...

**THANKS TO DIGITAL PHOTOGRAPHY AND PHOTO EDITING** software, it's now possible to make convincing customized photo backdrops for your layout.



## MAKING PHOTO BACKDROPS | 3

Photoshop, but Lightroom as well, and 20GB of cloud storage out on the web. To learn more, see [amzn.com/B01CUQ10GY](http://amzn.com/B01CUQ10GY).

You've heard of Photoshop most likely, but what is Lightroom?

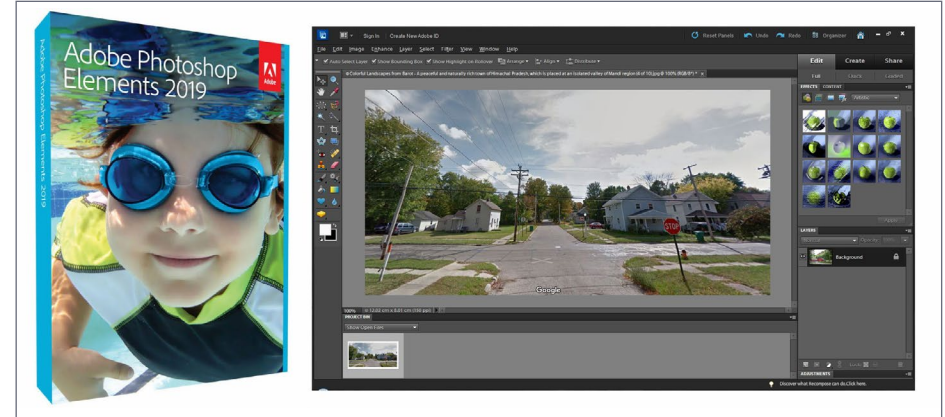
When it comes to ease of use with common photo collection basics, Lightroom blows Photoshop out of the water. Lightroom makes it insanely easy to create photo albums, to move multiple images around on your computer, to create photo slideshows, or to share your photos online easily.

If you think Photoshop's "recorded actions" playback feature makes things easy, they are nothing compared to the total ease of using Lightroom. You can create these Lightroom settings as presets



2. This video explains the differences between Lightroom and Photoshop and it also explains the monthly "Creative Cloud" rental for \$9.99 per month. If you're expecting to do a lot of photo editing, the \$10 per month option isn't bad.

## MAKING PHOTO BACKDROPS | 4



3. Photoshop Elements is a less expensive and less feature-rich version of Photoshop for image editing. Still, the newest Photoshop Elements 2019 has many features useful for creating and altering a photo panorama for use as a model railroading backdrop.

for easy application of your preferred image adjustment settings across many photos.

If you are just getting started with digital photo editing and want to use Adobe's deluxe photo editing tools, Lightroom is the place to begin. However, for making composite photos and removing or adding objects in photos, or building panoramas, it's Photoshop you will want to learn.

For more on the capabilities of Photoshop vs. Lightroom, see: [www.creativelive.com/blog/use-photoshop-lightroom](http://www.creativelive.com/blog/use-photoshop-lightroom).

**Photoshop Elements:** If you are not a professional photographer and prefer something with a more basic set of editing features, Adobe makes Photoshop Elements. Elements is the cheaper consumer version of Photoshop with fewer features. It's also a lot easier to learn than full-blown Photoshop.

## MAKING PHOTO BACKDROPS | 5

If you want to go this route, you should invest in Photoshop Elements 2019. It's \$70 and it has useful advanced photo editing features such as content aware object deletion. This one feature alone will save you hours of manual editing to remove an unwanted object from a photo.

Recent versions of Photoshop Elements (especially the 2019 version) incorporate enough of the power from its big brother Photoshop that it's become a quite adequate program now for model railroad photo backdrop preparation.

You can buy a disk version or downloadable copy of Photoshop Elements 2019 here: [amzn.com/B07HKQDL7Y](https://amzn.com/B07HKQDL7Y). It is also available at [www.adobe.com/creativecloud/photography.html](https://www.adobe.com/creativecloud/photography.html), from Best Buy, and other retailers.

**Gimp:** Gimp is free, but many feel it's also one of the more difficult photo editors to learn. Gimp runs on Windows, Mac, and Linux machines, making it a highly accessible option.

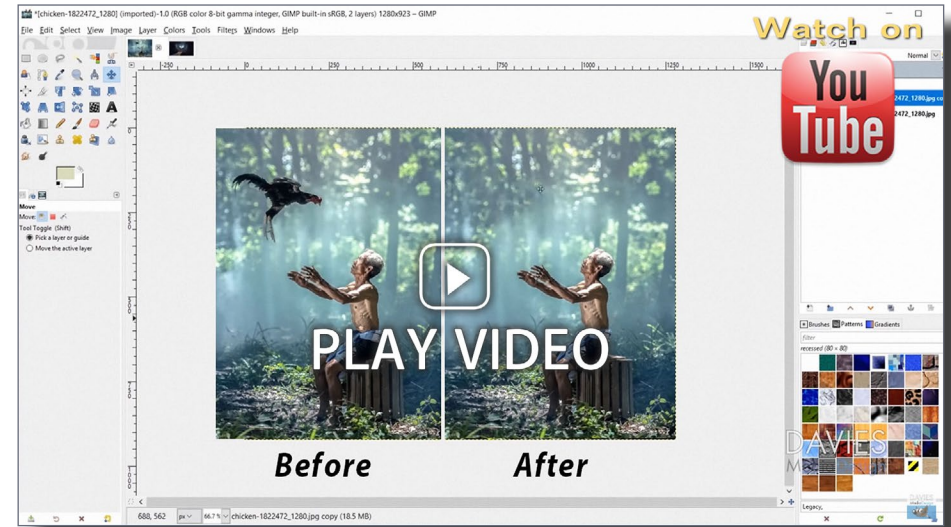
If you want to learn Gimp, there are thousands of YouTube videos on just about every topic you can imagine. For example, here's a tutorial [4] on deleting an object in a photo in Gimp using the equivalent of Photoshop's content aware deletion.

## FINDING PHOTOS

Once you have digital photo editing software under your belt, you need to find photos you can use as the source for your layout backdrop.

Using Google to search for appropriate photos is an obvious choice, as is going to the location and shooting your own photos. This path is easier if you live close to the area.

## MAKING PHOTO BACKDROPS | 6



4. Gimp is a free alternative to Photoshop, although some feel it's more difficult to learn. In this example, see how to use Gimp to easily delete an unwanted object. "Smart object deletion" is a much-needed capability for creating your own model railroad photo backdrop without endless hours of manual editing.

Another less obvious choice is Google Maps. Jim Six wanted to do a photo backdrop for a location on his layout, so he went to that location on Google Maps and did a street view. Let's have Jim explain.

## USING GOOGLE MAPS STREET VIEW

**Jim Six:** "Here is my layout as it is today with the photo backdrop installed [1]. The setting and buildings are not yet complete but will represent 1927, the year that I am modeling. The layout represents one town, Sturgis, Michigan. The brick structure at the left is



## MAKING PHOTO BACKDROPS | 7

the boiler house for Royal Chair Co. The buildings at the right are part of Sturgis Feed Mill.

“I created the photo backdrop from a photo of the actual street that I am modeling here.

“Here is the ‘raw’ photo that I used [5]. I got it from the street view on Google Maps. Obviously, there are things in this photo image that I do not want in 1927 – like the car and trucks, the utility lines, and for sure, the red stop sign. “

“Also, the perspective is off with the image narrowing at the top, causing the image to lean toward the center. I also had to eliminate the modern fire hydrant and the modern green plastic



5. Raw image straight out of Google Street View of Fourth Street in Sturgis, Michigan.

## MAKING PHOTO BACKDROPS | 8



6. After editing the image [5] by deleting objects that don't belong, removing the power lines, and correcting the perspective, here is the result.

garbage cans. I corrected all of this using my old Photoshop Elements 2.0.”

*[PE 2.0 was released 17 years ago and is ancient. Photoshop Elements 2019 (\$70) has rapid content aware deletion and many other features that will save you countless hours of manual editing. – ed.]*

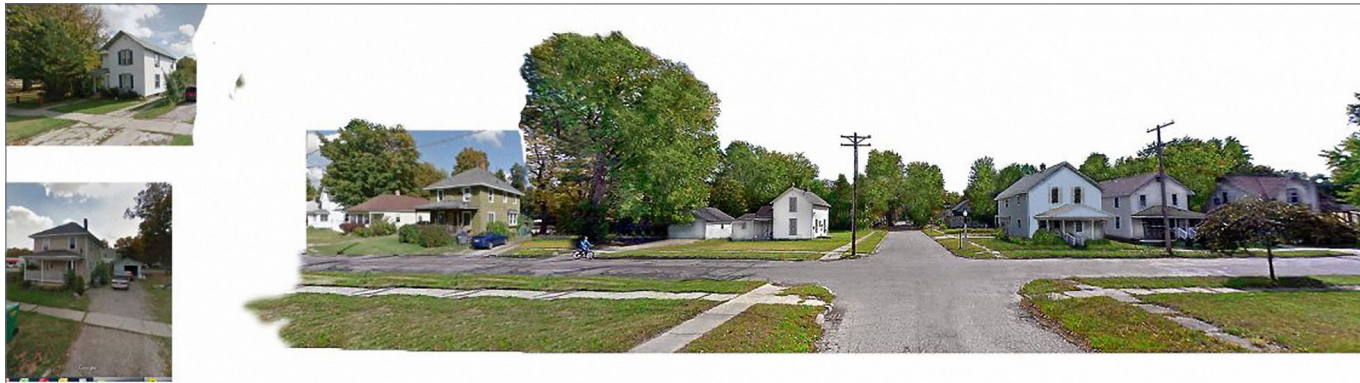
“The scene [6] was not quite wide enough to cover the space on the backdrop that I needed to fill. So, I went back to Google Maps and captured images of what is to the left and to the right of my original photo.

## MAKING PHOTO BACKDROPS | 9

“I then inserted parts of these auxiliary images into the original [7]. All of this work is time-consuming, but it’s fun and yields a great little panorama for my layout backdrop.”

“Note that I remove the sky [7]. I prefer to use a painted sky on my backdrop. This way I don’t need to match sky colors. Keep it simple!

“I did add back in the sky color after carefully matching it to my backdrop [8]. I cut out the sky with scissors, but since the sky color matches my backdrop exactly, any sky that did not get cut away effectively blends in and disappears, which makes cutting away the sky an easy task.”



7. Jim extended the left edge of the street image by capturing more Google Street View images to the left of the first view. He then pieced in the new images to widen his panorama enough to cover the backdrop gap between his structures.

## MAKING PHOTO BACKDROPS | 10



8. Jim Six's final photo backdrop image, ready to print and apply to his layout backdrop to get the scene in [1].

### MATCHING YOUR LAYOUT'S SKY COLOR



J. Fugate

Jim Six mentions matching the backdrop image sky color in the photo editor to his layout backdrop sky color. That's easy to do if you know the trick.

First, take a photo of your layout's plain blue (or whatever color) backdrop, making sure your camera white balance is set properly under your layout room lighting.

Next, drop that photo into your photo editing software and then print it using whatever method you're using to print your photo backdrop out (inkjet or color laser). Now hold that photo up against your actual backdrop and see how well it matches.

If it's off, try doing some photo color correction and then printing it again. With some trial and error, you will eventually reach a very close match and you're now good to go!

Then, save that image and use it to set the sky fill color on your backdrop panorama project.



## BACKDROP PHOTO EDITING TRICKS

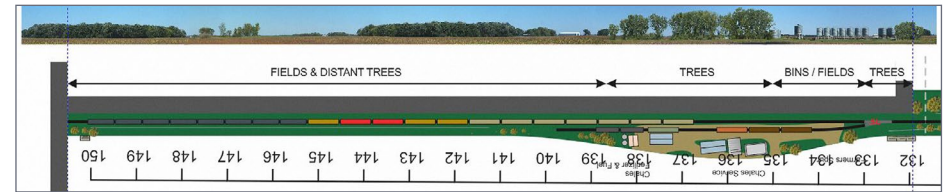
If you don't use Google Maps, but source your photos somewhere else, you can use some editing techniques to assemble backdrop photo panoramas. Bill Brillinger explains:

**Bill Brillinger:** “Some people like to paint the sky and fix images of buildings and distant trees to the sky. They trim the paper pieces for each scene and stick them on. I’m pretty sure that’s not how I want to do this. I think the hard edge of the top of the tree line would bother me – even if it was blended in with the sky paint.

“I have the software and skills to do the photo editing, so I decided to go with full photo backdrops. I’m creating my backdrops from photos I took in 2014 of buildings, fields and specific scenes along the prototype right of way.



9. Bill Brillinger used photographs he made of the area he's modeling and started making some backdrop components from it (top). From those components, he assembled the panorama for his backdrop (bottom photo).



10. Bill aligned his panorama with his layout track plan so he could see what needed to go where. You can see he has extended his panorama from [9] further by cleverly copying components and placing them.

“I started stitching some pictures together. I started with the photos for the St. Vincent area of the layout. This section is located along the wall above my office desk. I took the track plan for St. Vincent and aligned the backdrop with it.

“Using my photos, I created some photo components for my backdrop. In [9] you see three panoramas and some scenery components such as trees, bins, grass patches, and some distant structures. Note the top two panoramas [9] are actually one single panorama copied and flipped!”

“I edit, chop, and shop the photos until they fit together the way I want. This involves a lot of trimming, straightening, feathering, blending, and fading.

“I won't get into photo editing 101 here, I just want to give you an idea of how I put it together.”

Also notice it's generally best to keep the skyline low. Art class will tell you to put the skyline at eye level, but that tends not to look as good on model layouts. It generally looks better to keep the skyline closer to what looks good from a railfan view. That's often just a few inches above the scenery level. In the case of a

## MAKING PHOTO BACKDROPS | 13

mountainous backdrop or a city skyline, it can be higher, but still aim to keep it on the low side – it generally looks better that way.

### PRINTING YOUR BACKDROP

If you print your finished backdrop panorama yourself on letter or legal-size paper, you will need to deal with seams.

You can get inkjet printers that take roll paper, but they cost more than your typical \$50-\$100 inkjet. Examples include: Epson models 1280 (\$400), 2200 (\$800), and R1800 (\$450).

Color laser printers also work well.

If you print your backdrop yourself, make sure you get a heavy weight acid-free archival paper and use archival inks or toners. They cost more, but your backdrop won't fade or discolor over time. Most modelers recommend printing your backdrop on matte paper.

You can also send your panorama photo out to a poster printing service. If you keep your backdrop height shallow or cut off the sky, you can get panorama photo prints quite affordably.

Just Google “panorama photo prints”. For example, this service prints 10” high photos as long as 156 inches (13 feet long) for less than \$70: [www.ezprints.com/prints-and-panos/custom-pan-oramic-photo-prints.html](http://www.ezprints.com/prints-and-panos/custom-pan-oramic-photo-prints.html).

### MOUNTING YOUR BACKDROP

Putting your photo backdrop up doesn't need to be difficult or messy. You can glue it in place if you like, but it can be difficult to avoid air bubbles and wrinkles.

Unbelievably, it can be easier to just tape up the backdrop. You can get removable glue dots and removable double-sided tape to allow

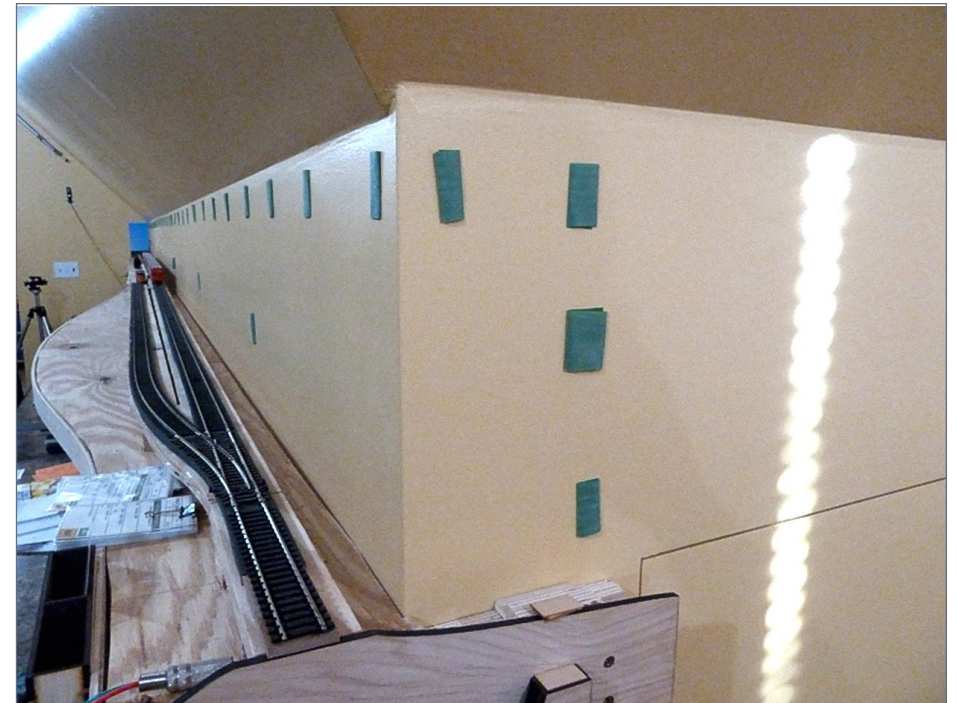
## MAKING PHOTO BACKDROPS | 14

adjusting if you need to while putting it up. Here's some links to these on Amazon:

Removable glue dots (\$7 for 200): [amzn.com/B00161UBTW](http://amzn.com/B00161UBTW)

Removable double-sided tape (\$5 per 33ft roll): [amzn.com/B00006IF63](http://amzn.com/B00006IF63)

You may not need to be so fancy. Bill Brillinger used blue/green painters tape, applying short pieces sticky side out on his backdrop board [11, 12].



11. Bill Brillinger put simple rolls of painter's tape sticky side out on the backdrop board to hold his photo backdrop in place. See the result in [12].





12. Here is Bill Brillinger's final backdrop fastened in place, using painter's tape sticky side out [11].

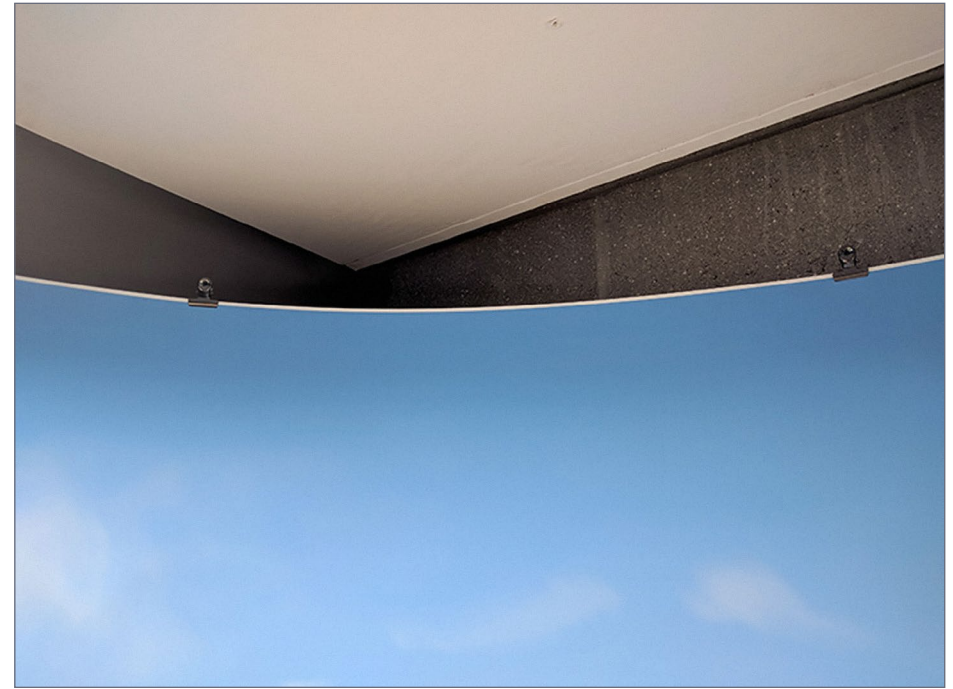
In another case, Scott Thornton used a full-width backdrop printed out as a long roll including the sky and just clipped it to his backdrop board with common metal clips.

**Scott:** "I wanted the flexibility to remove the sections, so each one is simply clipped to the top and bottom of my 1/8" Masonite base [13]. I used darker clips to help minimize them in the upper valance shadows.

"Since the paper has a good weight, the sections hang very nice and smooth. I still need to tape down the five seam areas. I purchased some acid-free 1/2 in. double-sided [removable] tape to handle the seams. I also overlapped the sections away from the layout entrance to minimize the seams visually."

### **BLENDING THE BACKDROP INTO THE LAYOUT**

Once the backdrop is up, you can use a few further tricks to blend it into the 3D scenery in front of it.



13. Scott Thornton used ordinary metal clips to attach his backdrop (printed in long rolls) to his 1/8" Masonite backdrop board.

Bushes and vegetation can help blend the flat backdrop with foreground scenery, as you can see in Jim Six's photos [14, 15]. Another consideration is to test the color of your backdrop with the foreground scenery colors before you print the backdrop.

Test different color variations until you get something that is compatible with your foreground colors. If you like, you can fade and tint the distant background slightly bluer to add a greater sense of distance. But be careful and do some test prints first. It's easy to overdo it.

## MAKING PHOTO BACKDROPS | 17



14. Jim Six used a low sky horizon line and blended his photo backdrop with his foreground scenery by blending to his scenery colors and placing some bushes and trees along the boundary.



15. Here is another example of how Jim Six blended the transition from his backdrop to foreground scenery, using foliage and matching backdrop and foreground scenery colors.

## MAKING PHOTO BACKDROPS | 18

Scott Thornton took this photo of Jason Klocke's backdrop [16], further illustrating this point. Most of these backdrops are sky in flatter country.

For an example of a backdrop with mountains and a bit higher sky horizon level, here's an example on the late Vern Niner's layout [17]. Note the horizon line is higher, but not too high.

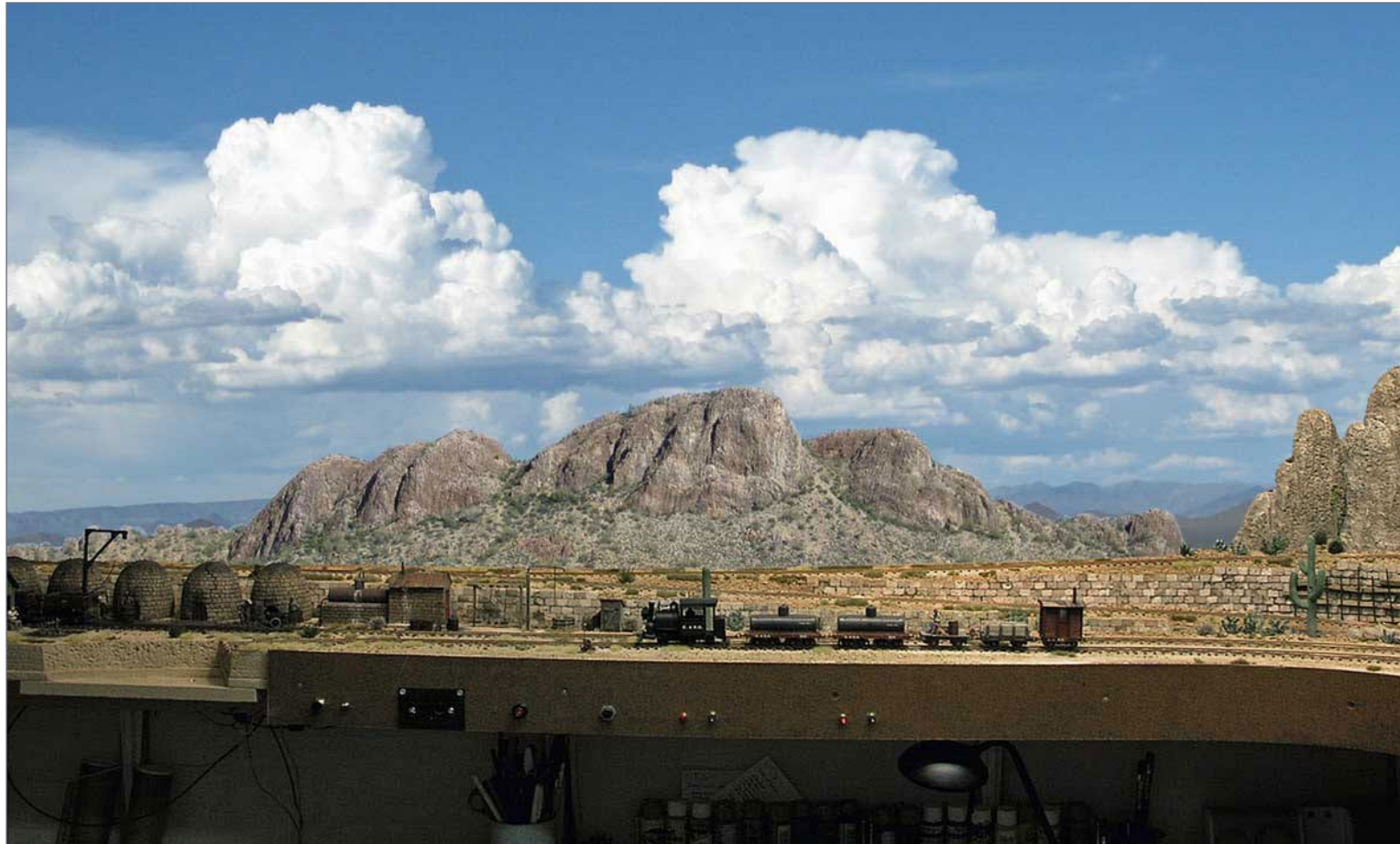


16. The backdrop to foreground scenery transition on Jason Klocke's layout. *Photo by Scott Thornton*



### CONCLUDING THOUGHTS

We hope this discussion of how to do photo backdrops has been helpful.



17. A Photoshop background mock-up the late Verne Niner was exploring. Note that the horizon line is higher than it is on many flatland layouts, but it's still not *too high*.

For more, see the MRH website. Go to the search box at the right and type “photo backdrops” and press “search.” You can peruse all the threads that come up for more examples and insights! ☒

**Tell your friends about Running Extra!**

**We depend on word-of-mouth to grow ... if you don't share us, we don't grow**





# The Internet *For model railroaders*

Running Extra | June 2019

**THE MRH STAFF** has simple tricks for getting a lot more out of your hobby time online ...

**IF YOU'RE READING THIS ARTICLE, YOU OBVIOUSLY KNOW** something about getting online and using the internet. The internet has a lot of great resources for model railroaders that you may not be aware of.

We also want to share several little-known but quick-and-powerful internet usage tricks that can *turbo-charge your time online*.



Our goal here isn't to get you spending more time online – no, not at all! If anything, we're showing you how to spend less time online but get more to show for it. Finding what you need online and then getting back to your modeling sooner – that's what we're aiming for here!

There are so many cool tricks we have to show you; this will take more than one article. In Part One, we'll fill in any gaps you may have on the basics of the web, and then help you become a search pro.

Let's get started!

## **INTERNET LINGO**

When using the internet, unless you're a techie already, you're going to encounter terms and concepts that are unfamiliar. Let's discuss some of the most common, along with tips on how to become a far more savvy web user.

This material is deliberately brief but loaded with insights. If you take the time to watch these short videos (two to three minutes each in most cases), you will shortly be using the web like a pro!

**Internet/World Wide Web:** Put simply, the Internet is an interconnected collection of networks. Using special computer programs, the World Wide Web connects computers around the world into a web-like network using the Internet.

Many modelers can benefit from finally having Internet concepts explained in plain English – and for that, this two and a half-minute video is quite good (next page).



THE

# Internet

in plain English



Play video



Don't worry about the rest of the topics on this web page off to the side – we'll give you those insights – and lots more in these articles, with an emphasis on model railroading resources.

## MRH product awareness survey

**Take survey now**

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

click here (takes ~5 min)



Seems like almost everyone wants a chance!

WHAT IS A

# Browser?

( PLUS SOME SAVVY TRICKS )



Play video



**Browser:** This is a computer program you use to access the Internet. Many modelers may be unaware of the power hiding in their browser (such as bookmarks) that can save them a load of time online.

This three-minute video shows you a few simple tricks for becoming a savvy browser user (above).



WHAT IS A

# URL ...

( AND HOW CAN I USE IT? )



Play video



**Links/URLs:** If you've ever clicked a link, or typed a web address into a browser, you've used a URL, or a Universal Resource Locator. A URL is like a street address for a web page.

As a model railroader, understanding what a URL is and how to best use it can really help you locate the stuff you're looking for online. For that insight, check out this two-minute video (above).

WHAT IS AN

# ISP ...

( AND WHAT IS WI-FI? )



Play video



**ISP:** When you connect to the Internet, you use an Internet Service Provider, or ISP, along with a device in your home called a modem/router. If you would like the ability to wirelessly connect to the Internet, you can set up a wireless network, or WiFi for short. For more on connecting to the internet through an ISP, please watch this three and a half-minute video (above).

**Did you know  
there's an  
MRH/RE index  
available?**

CLICK TO FIND OUT MORE





WHAT IS

# SPAM...

( AND WHAT IS PHISHING? )



Play video



**Spam:** Spam is the term used to describe one of the banes of the modern Internet: wasteful junk email. The worst of the email spam can involve what's called phishing – emails that pretend to be something serious in order to scare you into revealing passwords.

This next video outlines how to properly deal with spam and phishing attempts and should be required viewing by anyone who uses the internet (above).

**Use our custom  
Google search on the  
MRH website to find  
topics of interest**

CLICK TO FIND OUT MORE



WHAT IS A

# COOKIE...

( AND WHAT ARE THEY FOR? )



Play video



**Cookie:** If you've been online very much, you may have heard of something called a cookie. Put simply, a cookie is a short snippet (some might say a "tasty snippet") given to your browser to remember you for the next time you visit.

For instance, when you login on to the *MRH* or TrainMasters TV website, that involves giving your browser a cookie to say that you're now logged in and to open up previously locked-away content to you.

But there's more to cookies, as this short video explains (above).



WHY ARE

# COOKIES

A GOOD THING?



Play video



We don't recommend turning off cookies. If you turn off all cookies, you won't be able to log in and access the bonus downloads on the *MRH* site, post a question on our forums, or login and watch a TrainMasters TV video.

If you're concerned about cookies, you should not be. They're just part of how the web works to remember who you are and what you're doing such as being logged in or adding products to a shopping cart.

Turning off cookies will just hinder your ability to use the web productively. With cookies turned off, you won't be able to shop online, to bank online, or to participate in forums. You also will remove Google's ability to tailor search returns for you.

Here's a video that should set your mind at ease regarding cookies (above).

We also don't recommend you disable third-party cookies either (watch the video) – disabling third-party cookies won't stop ads from appearing.

In fact, disabling third-party cookies won't do anything to remove the ads and will make the ads *even more annoying*. The ad display server won't know you've already seen the ad, so it may barrage you repeatedly with the same ad over and over – that's far more annoying!

If you want to block ads, then blocking cookies won't help. You need to use an ad blocker. Most modern browsers come with an ad-blocker built in and enabled by default. More on this later.

If cookies bother you, then we have to ask: what are you doing on the World Wide Web in the first place? Once you get online, the internet knows how to find your exact location – otherwise how would it know where to send the web pages?

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





WHAT IS A

# BLOG ...

AND HOW DOES IT WORK?



Play video



**Blog:** It's easy to create a personal journal on the web to talk about whatever you're interested in. It's called a weblog or blog for short. For more about blogs, here's a short 3-minute video (above).

On the *MRH* website, we provide the ability for you to create your own blog. Here's a link to some of the most recent blog threads on our website:

[mrhmag.com/blog](http://mrhmag.com/blog)



Now that we've covered some basic Internet-savvy knowledge, let's get into something more specific: how to search like a pro.

## SEARCHING LIKE A PRO

Have you ever searched for something like "frogs" wanting to get more information on wiring your turnout frogs only to get lots of links to sites talking about the little green guys who croak, eat flies, and live in ponds instead?

Or how often have you done a search only to get two million results back? What if the page you're really looking for is several hundred thousand links in?

Would you like to know some easy tricks for quickly narrowing down a search to exactly what you're looking for?

Or have you ever downloaded a photo from the web only to forget later where you got it, and not know how to reference it for giving credit in a slideshow or in an article?

Did you know you can do a "reverse search" for a photo you have and find it or similar ones on the web easily?

Get ready to learn how to make your Google searches a lot more effective!

**Search trick 1:** Removing something from your search results is easy. For example, let's take the "frog" search example. If you want to remove something from the search, just put a minus in front of it with no space:

Google: frog -amphibian

It can sometimes be quite helpful to know this!

**Search trick 2:** If you want to make sure a given word is closely associated with your search term (but not necessarily right next to

it), you can use a plus in front of it with no space. For example, if I search for engine, I get a lot of references to an internal combustion engine, but I'm looking for railroad engines, so I can search like this:

Google: engine +railroad

**Search trick 3:** Sometimes you can get a lot of mixed results you don't want when searching for more than one term together. For example, let's say you use this search phrase:

Google: locomotive painted green and black

What you get back are locomotives painted green, locomotives painted black, and locomotives painted green and black. What you want is just locomotives painted green and black.

To make sure you're getting just the green and black locomotives only, put the search phrase in quotes like this:

Google: locomotives painted "green and black"

This returns more of the locomotives painted green and black. You get fewer of the just black or just green locomotives.

You can also use the quote tips to search for an exact phrase from a website or book. For instance, if I type TOMA (intending to search for MRH's published info on The "One Module" Approach) into Google, I get 348 million results most of which have nothing to do with TOMA for model railroading.

Now if I instead type this into Google:

Google: the one module approach

Now that's better, I do get some relevant results on the first page, but I still get a lot of non-TOMA modular stuff and I now have 350 million results.

USING

# SEARCH STRATEGIES



Play video



But I'm searching for this exact phrase as used for TOMA model railroads in MRH literature, so I type this into Google instead:

Google: "the one module approach"

Now I get just 1320 results, most related directly to the TOMA method of doing a model railroad. However, there are some computer software links about doing a one module approach, so let's add in the minus for software to remove those from the results:

Google: "the one module approach" -software

Now I get just 462 results – 15 pages in all! That's small enough I can check all the links.

Here are how to use these search strategies and more in this short three-minute video (above).



**RATE THIS ARTICLE**



TOP 10

# GOOGLE

## SEARCH TRICKS



Play video



And for even more clever search tips such as a reverse image search, see this video (above).

Next month we'll get into more, focusing on better downloading, the power of bookmarking, making it easier to remember passwords, and how to whitelist an email address so things like emails from the *MRH* Store or other hobby websites don't go to spam. ✓



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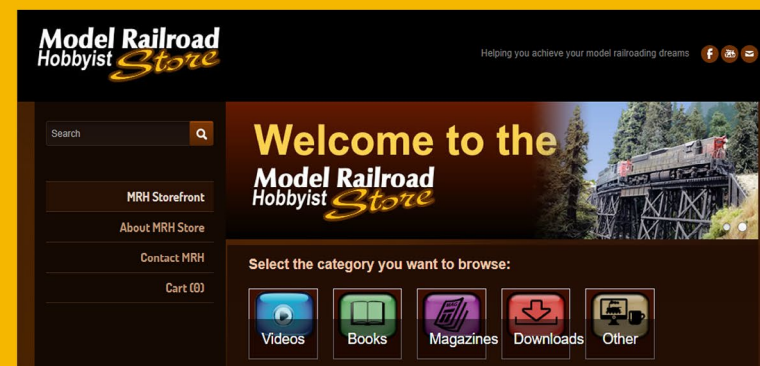
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# THE AH-HAH MOMENT

column



MRH Running Extra | June 2019

## JOE FUGATE: WHAT TO DO ABOUT CLOGGED DISPENSING NEEDLES ...



On the MRH forum recently, a reader posted that he was using a tiny 27ga needle applicator (see the “Welcome” in April’s issue of *Running Extra*) and the needle got clogged. Now what?

Obviously, he needs to ream out the clogged needle with something, but what?

I took a 27ga needle applicator and tried some of my tiny drill bits on it to see what would fit the most snugly, yet still slip in/out without getting jammed. The answer came quickly: a #75 drill bit.

Using my handy **MRH Universal Modeling Sizes Chart** [1], I could see it was about 0.021" in diameter. I could also see some #24 AWG wire also was the proper size.

So the next step is to go get a length of 0.020" wire or some 24 AWG wire and strip off the insulation. Strip away the insulation and just ream out the needle with the wire to remove the obstruction[2].

We’ve published various versions of this chart over the years, and this month we’ve just updated the chart with drill bit sizes down to #97 to go with the new micro drill chuck featured in this month’s Welcome on making a powered pin vise take 2.

Armed with this chart and a bit of thinking through the problem, you can quickly determine what size something needs to be when you are working with your tools and models. ☑

## THE AH-HAH MOMENT | 2

### UNIVERSAL MODELING SIZES CHART

| English (in) | Metric (mm) | Drill Sizes |     |         | Wire AWG | Screws |       | Scale dimensions |        |        |        |        |
|--------------|-------------|-------------|-----|---------|----------|--------|-------|------------------|--------|--------|--------|--------|
|              |             | ANSI        | ISO | Decimal |          | TAP    | CLEAR | Z                | N      | HO     | S      | O      |
| 0.001        | 0.025       | -           | -   | -       | -        | -      | -     | -                | -      | -      | -      | -      |
| 0.002        | 0.051       | -           | -   | -       | -        | -      | -     | -                | -      | -      | -      | -      |
| 0.003        | 0.076       | -           | -   | -       | 40       | -      | -     | 1/2"             | 1/2"   | 1/4"   | -      | -      |
| 0.004        | 0.102       | -           | -   | -       | 38       | -      | -     | -                | -      | -      | 1/4"   | -      |
| 0.005        | 0.127       | 97          | -   | -       | 36       | -      | -     | 1"               | -      | -      | -      | 1/4"   |
| 0.006        | 0.152       | 95          | -   | -       | -        | -      | -     | -                | 1"     | 1/2"   | -      | -      |
| 0.007        | 0.178       | 94          | -   | -       | 34       | -      | -     | 1-1/2"           | -      | -      | 1/2"   | -      |
| 0.008        | 0.203       | 91          | -   | -       | 32       | -      | -     | -                | -      | -      | -      | -      |
| 0.009        | 0.229       | 88          | -   | -       | 31       | -      | -     | 2"               | 1-1/2" | 3/4"   | -      | -      |
| 0.010        | 0.254       | 86          | -   | -       | 30       | -      | -     | -                | -      | -      | -      | 1/2"   |
| 0.011        | 0.279       | 84          | -   | -       | -        | -      | -     | 2-1/2"           | -      | -      | -      | -      |
| 0.012        | 0.305       | 82          | -   | -       | 29       | -      | -     | -                | 2"     | 1"     | 3/4"   | -      |
| 0.013        | 0.330       | 80          | .35 | -       | 28       | -      | -     | -                | -      | -      | -      | -      |
| 0.014        | 0.356       | 79          | -   | -       | -        | -      | -     | 3"               | -      | -      | -      | -      |
| 0.015        | 0.381       | -           | .40 | -       | 27       | -      | -     | -                | -      | -      | -      | 3/4"   |
| 0.016        | 0.406       | 78          | -   | 1/64    | 26       | -      | -     | 3-1/2"           | 2-1/2" | -      | 1"     | -      |
| 0.017        | 0.432       | -           | .45 | -       | -        | -      | -     | -                | -      | 1-1/2" | -      | -      |
| 0.018        | 0.457       | 77          | -   | -       | 25       | -      | -     | 4"               | -      | -      | -      | -      |
| 0.019        | 0.483       | -           | .50 | -       | -        | -      | -     | -                | 3"     | -      | -      | -      |
| 0.020        | 0.508       | 76          | -   | -       | -        | -      | -     | 4-1/2"           | -      | -      | -      | 1"     |
| 0.021        | 0.533       | 75          | .55 | -       | 24       | -      | -     | -                | -      | -      | -      | -      |
| 0.022        | 0.559       | 74          | -   | -       | -        | -      | -     | -                | 3-1/2" | -      | -      | -      |
| 0.023        | 0.584       | -           | .60 | -       | 23       | -      | -     | 5"               | -      | 2"     | -      | -      |
| 0.024        | 0.610       | 73          | -   | -       | -        | -      | -     | -                | -      | -      | 1-1/2" | -      |
| 0.025        | 0.635       | 72          | .65 | -       | -        | -      | -     | 5-1/2"           | 4"     | -      | -      | -      |
| 0.026        | 0.660       | 71          | -   | -       | 22       | -      | -     | -                | -      | -      | -      | 1-1/4" |
| 0.027        | 0.686       | -           | .70 | -       | -        | -      | -     | 6"               | -      | -      | -      | -      |

1. Using this chart, I quickly determined a #75 bit = 24 AWG wire.



2. I then took some #24 AWG wire and reamed out the clogged needle.



## UNIVERSAL MODELING SIZES CHART

| English<br>(in) | Metric<br>(mm) | Drill Sizes |      |         | Wire<br>AWG | Screws |       | Scale dimensions |        |        |        |        |
|-----------------|----------------|-------------|------|---------|-------------|--------|-------|------------------|--------|--------|--------|--------|
|                 |                | ANSI        | ISO  | Decimal |             | TAP    | CLEAR | Z                | N      | HO     | S      | O      |
| 0.001           | 0.025          |             |      |         |             |        |       |                  |        |        |        |        |
| 0.002           | 0.051          |             |      |         |             |        |       | 1/2"             |        |        |        |        |
| 0.003           | 0.076          |             |      |         | 40          |        |       |                  | 1/2"   | 1/4"   |        |        |
| 0.004           | 0.102          |             |      |         | 38          |        |       |                  |        |        | 1/4"   |        |
| 0.005           | 0.127          | 97          |      |         | 36          |        |       | 1"               |        |        |        | 1/4"   |
| 0.006           | 0.152          | 95          |      |         |             |        |       |                  | 1"     | 1/2"   |        |        |
| 0.007           | 0.178          | 94          |      |         | 34          |        |       | 1-1/2"           |        |        | 1/2"   |        |
| 0.008           | 0.203          | 91          |      |         | 32          |        |       |                  |        |        |        |        |
| 0.009           | 0.229          | 88          |      |         | 31          |        |       | 2"               | 1-1/2" | 3/4"   |        |        |
| 0.010           | 0.254          | 86          |      |         | 30          |        |       |                  |        |        |        | 1/2"   |
| 0.011           | 0.279          | 84          |      |         |             |        |       | 2-1/2"           |        |        |        |        |
| 0.012           | 0.305          | 82          |      |         | 29          |        |       |                  | 2"     | 1"     | 3/4"   |        |
| 0.013           | 0.330          | 80          | .35  |         | 28          |        |       |                  |        |        |        |        |
| 0.014           | 0.356          | 79          |      |         |             |        |       | 3"               |        |        |        |        |
| 0.015           | 0.381          |             | .40  |         | 27          |        |       |                  |        |        |        | 3/4"   |
| 0.016           | 0.406          | 78          |      | 1/64    | 26          |        |       | 3-1/2"           | 2-1/2" |        | 1"     |        |
| 0.017           | 0.432          |             | .45  |         |             |        |       |                  |        | 1-1/2" |        |        |
| 0.018           | 0.457          | 77          |      |         | 25          |        |       | 4"               |        |        |        |        |
| 0.019           | 0.483          |             | .50  |         |             |        |       |                  | 3"     |        |        |        |
| 0.020           | 0.508          | 76          |      |         |             |        |       | 4-1/2"           |        |        |        | 1"     |
| 0.021           | 0.533          | 75          | .55  |         | 24          |        |       |                  |        |        |        |        |
| 0.022           | 0.559          | 74          |      |         |             |        |       |                  | 3-1/2" |        |        |        |
| 0.023           | 0.584          |             | .60  |         | 23          |        |       | 5"               |        | 2"     |        |        |
| 0.024           | 0.610          | 73          |      |         |             |        |       |                  |        |        | 1-1/2" |        |
| 0.025           | 0.635          | 72          | .65  |         |             |        |       | 5-1/2"           | 4"     |        |        |        |
| 0.026           | 0.660          | 71          |      |         | 22          |        |       |                  |        |        |        | 1-1/4" |
| 0.027           | 0.686          |             | .70  |         |             |        |       | 6"               |        |        |        |        |
| 0.028           | 0.711          | 70          |      |         |             |        |       |                  | 4-1/2" |        |        |        |
| 0.029           | 0.737          | 69          | .75  |         | 21          |        |       |                  |        | 2-1/2" |        |        |
| 0.030           | 0.762          |             |      |         |             |        |       | 6-1/2"           |        |        |        |        |
| 0.031           | 0.787          | 68          | .80  | 1/32    |             |        |       | 5"               |        |        | 2"     | 1-1/2" |
| 0.032           | 0.813          | 67          |      |         | 20          |        |       | 7"               |        |        |        |        |
| 0.033           | 0.838          | 66          | .85  |         |             |        |       |                  |        |        |        |        |
| 0.034           | 0.864          |             |      |         |             |        |       | 7-1/2"           | 5-1/2" |        |        |        |
| 0.035           | 0.889          | 65          | .90  |         |             |        |       | 8"               |        | 3"     |        |        |
| 0.036           | 0.914          | 64          |      |         | 19          |        |       |                  |        |        |        |        |
| 0.037           | 0.940          | 63          | .95  |         |             | 00-90  |       |                  |        |        |        | 1-3/4" |
| 0.038           | 0.965          | 62          |      |         |             |        |       | 6"               |        |        |        |        |
| 0.039           | 0.991          | 61          | 1.00 |         |             |        |       | 8-1/2"           |        |        | 2-1/2" |        |
| 0.040           | 1.016          | 60          |      |         |             |        |       |                  |        | 3-1/2" |        |        |
| 0.041           | 1.041          | 59          | 1.05 |         | 18          |        |       | 9"               | 6-1/2" |        |        |        |
| 0.042           | 1.067          | 58          |      |         |             |        |       |                  |        |        |        | 2"     |
| 0.043           | 1.092          | 57          | 1.10 |         |             |        |       | 9-1/2"           |        |        |        |        |
| 0.044           | 1.118          |             |      |         |             |        |       |                  | 7"     |        |        |        |
| 0.045           | 1.143          |             | 1.15 |         |             |        |       | 10"              |        |        |        |        |
| 0.046           | 1.168          | 56          |      | 3/64    | 17          |        |       |                  |        | 4"     | 3"     |        |
| 0.047           | 1.194          |             | 1.20 |         |             |        |       |                  | 7-1/2" |        |        |        |
| 0.048           | 1.219          |             |      |         |             |        |       | 10-1/2"          |        |        |        |        |
| 0.049           | 1.245          |             | 1.25 |         |             |        |       |                  |        |        |        |        |
| 0.050           | 1.270          |             |      |         |             |        |       | 11"              | 8"     |        |        |        |
| 0.051           | 1.295          |             | 1.30 |         | 16          |        |       |                  |        |        |        |        |
| 0.052           | 1.321          | 55          |      |         |             | 00-80  | 00-90 | 11-1/2"          |        | 4-1/2" |        | 2-1/2" |
| 0.053           | 1.346          |             | 1.35 |         |             |        |       |                  | 8-1/2" |        | 3-1/2" |        |
| 0.054           | 1.372          |             |      |         |             |        |       |                  |        |        |        |        |
| 0.055           | 1.397          | 54          | 1.40 |         |             |        |       | 12"              |        |        |        |        |
| 0.056           | 1.422          |             |      |         |             |        |       |                  | 9"     |        |        |        |
| 0.057           | 1.448          |             | 1.45 |         |             |        |       |                  |        | 5"     |        |        |
| 0.058           | 1.473          |             |      |         | 15          |        |       |                  |        |        |        |        |

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| English<br>(in) | Metric<br>(mm) | Drill Sizes |      |         | Wire<br>AWG | Screws |       | Scale dimensions |         |        |        |        |
|-----------------|----------------|-------------|------|---------|-------------|--------|-------|------------------|---------|--------|--------|--------|
|                 |                | ANSI        | ISO  | Decimal |             | TAP    | CLEAR | Z                | N       | HO     | S      | O      |
| 0.059           | 1.499          |             | 1.50 |         |             |        |       |                  |         | 9-1/2" |        |        |
| 0.060           | 1.524          | 53          |      |         |             | 1-72   |       | 13"              |         |        |        |        |
| 0.061           | 1.549          |             | 1.55 |         |             |        |       |                  |         |        |        |        |
| 0.062           | 1.575          |             |      | 1/16    |             |        |       |                  |         |        | 4"     | 3"     |
| 0.063           | 1.600          | 52          | 1.60 |         |             |        |       |                  | 10"     | 5-1/2" |        |        |
| 0.064           | 1.626          |             |      |         |             |        |       | 14"              |         |        |        |        |
| 0.065           | 1.651          |             | 1.65 |         | 14          |        |       |                  |         |        |        |        |
| 0.066           | 1.676          |             | 1.70 |         |             |        |       |                  | 10-1/2" |        |        |        |
| 0.067           | 1.702          | 51          |      |         |             |        | 00-80 |                  |         |        |        |        |
| 0.068           | 1.727          |             | 1.75 |         |             |        |       | 15"              |         |        |        |        |
| 0.069           | 1.753          |             |      |         |             |        |       |                  | 11"     | 6"     |        |        |
| 0.070           | 1.778          | 50          | 1.80 |         |             | 2-56   |       |                  |         |        | 4-1/2" |        |
| 0.071           | 1.803          |             |      |         |             |        |       |                  |         |        |        |        |
| 0.072           | 1.829          |             | 1.85 |         | 13          |        |       |                  | 11-1/2" |        |        |        |
| 0.073           | 1.854          | 49          |      |         |             |        |       | 16"              |         |        |        | 3-1/2" |
| 0.074           | 1.880          |             | 1.90 |         |             |        |       |                  | 12"     | 6-1/2" |        |        |
| 0.075           | 1.905          |             |      |         |             |        |       |                  |         |        |        |        |
| 0.076           | 1.930          | 48          | 1.95 |         |             |        |       |                  |         |        |        |        |
| 0.077           | 1.956          |             |      |         |             |        |       | 17"              |         |        |        |        |
| 0.078           | 1.981          | 47          | 2.00 | 5/64    |             |        |       |                  |         |        | 5"     |        |
| 0.079           | 2.007          |             |      |         |             |        | 1-72  |                  |         |        |        |        |
| 0.080           | 2.032          |             | 2.05 |         |             |        |       |                  |         | 7"     |        |        |
| 0.081           | 2.057          | 46          |      |         | 12          | 3-48   |       |                  | 13"     |        |        |        |
| 0.082           | 2.083          | 45          | 2.10 |         |             |        |       | 18"              |         |        |        |        |
| 0.083           | 2.108          |             |      |         |             |        |       |                  |         |        |        | 4"     |
| 0.084           | 2.134          |             | 2.15 |         |             |        |       |                  |         |        |        |        |
| 0.085           | 2.159          |             |      |         |             |        |       |                  |         |        | 5-1/2" |        |
| 0.086           | 2.184          | 44          | 2.20 |         |             |        |       | 19"              |         | 7-1/2" |        |        |
| 0.088           | 2.235          |             | 2.25 |         |             |        |       |                  | 14"     |        |        |        |
| 0.089           | 2.261          | 43          |      |         |             | 4-40   |       |                  |         |        |        |        |
| 0.090           | 2.286          |             | 2.30 |         |             |        |       |                  |         |        |        |        |
| 0.091           | 2.311          |             |      |         | 11          |        |       | 20"              |         |        |        |        |
| 0.092           | 2.337          |             | 2.35 |         |             |        |       |                  |         | 8"     |        |        |
| 0.093           | 2.362          | 42          |      | 3/32    |             |        |       |                  |         |        | 6"     | 4-1/2" |
| 0.094           | 2.388          |             | 2.40 |         |             |        | 2-56  |                  | 15"     |        |        |        |
| 0.095           | 2.413          |             |      |         |             |        |       | 21"              |         |        |        |        |
| 0.096           | 2.438          | 41          | 2.45 |         |             |        |       |                  |         |        |        |        |
| 0.098           | 2.489          | 40          | 2.50 |         |             |        |       |                  |         | 8-1/2" |        |        |
| 0.099           | 2.515          | 39          |      |         |             |        |       |                  |         |        |        |        |
| 0.100           | 2.540          |             | 2.55 |         |             |        |       | 22"              | 16"     |        |        |        |
| 0.101           | 2.565          | 38          |      |         |             |        |       |                  |         |        | 6-1/2" |        |
| 0.102           | 2.591          |             | 2.60 |         | 10          |        |       |                  |         |        |        |        |
| 0.103           | 2.616          |             |      |         |             |        |       |                  |         | 9"     |        |        |
| 0.104           | 2.642          | 37          | 2.65 |         |             |        |       |                  |         |        |        |        |
| 0.105           | 2.667          |             |      |         |             |        |       | 23"              |         |        |        | 5"     |
| 0.106           | 2.692          | 36          | 2.70 |         |             |        |       |                  | 17"     |        |        |        |
| 0.107           | 2.718          |             |      |         |             |        | 3-48  |                  |         |        |        |        |
| 0.108           | 2.743          |             | 2.75 |         |             |        |       |                  |         |        |        |        |
| 0.109           | 2.769          |             |      | 7/64    |             |        |       | 24"              |         | 9-1/2" | 7"     |        |
| 0.110           | 2.794          | 35          | 2.80 |         |             | 6-32   |       |                  |         |        |        |        |
| 0.111           | 2.819          | 34          |      |         |             |        |       |                  |         |        |        |        |
| 0.113           | 2.870          | 33          |      |         |             |        |       |                  | 18"     |        |        |        |
| 0.114           | 2.896          |             | 2.90 |         |             |        |       | 25"              |         |        |        |        |
| 0.115           | 2.921          |             |      |         | 9           |        |       |                  |         | 10"    |        | 5-1/2" |
| 0.116           | 2.946          | 32          |      |         |             |        |       |                  |         |        |        |        |
| 0.117           | 2.972          |             |      |         |             |        |       |                  |         |        | 7-1/2" |        |
| 0.118           | 2.997          |             | 3.00 |         |             |        |       | 26"              |         |        |        |        |
| 0.119           | 3.023          |             |      |         |             |        |       |                  | 19"     |        |        |        |

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## UNIVERSAL MODELING SIZES CHART

| English<br>(in) | Metric<br>(mm) | Drill Sizes |      |         | Wire<br>AWG | Screws |       | Scale dimensions |     |         |         |        |
|-----------------|----------------|-------------|------|---------|-------------|--------|-------|------------------|-----|---------|---------|--------|
|                 |                | ANSI        | ISO  | Decimal |             | TAP    | CLEAR | Z                | N   | HO      | S       | O      |
| 0.120           | 3.048          | 31          | "    | "       | "           | "      | 4-40  | "                | "   | "       | "       | "      |
| 0.121           | 3.073          | "           | "    | "       | "           | "      | "     | "                | "   | 10-1/2" | "       | "      |
| 0.122           | 3.099          | "           | 3.10 | "       | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.123           | 3.124          | "           | "    | "       | "           | "      | "     | 27"              | "   | "       | "       | "      |
| 0.125           | 3.175          | "           | "    | 1/8     | "           | "      | "     | "                | 20" | 11"     | 8"      | 6"     |
| 0.126           | 3.200          | "           | 3.20 | "       | "           | "      | "     | 28"              | "   | "       | "       | "      |
| 0.127           | 3.226          | "           | "    | "       | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.128           | 3.251          | 30          | 3.25 | "       | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.129           | 3.277          | "           | 3.30 | "       | 8           | "      | "     | "                | "   | "       | "       | "      |
| 0.131           | 3.327          | "           | "    | "       | "           | "      | "     | "                | 21" | "       | "       | "      |
| 0.132           | 3.353          | "           | "    | "       | "           | "      | "     | 29"              | "   | 11-1/2" | 8-1/2"  | "      |
| 0.133           | 3.378          | "           | 3.40 | "       | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.134           | 3.404          | "           | "    | "       | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.135           | 3.429          | "           | "    | "       | "           | "      | "     | "                | "   | "       | "       | 6-1/2" |
| 0.136           | 3.454          | 29          | "    | "       | "           | 8-32   | "     | 30"              | "   | "       | "       | "      |
| 0.137           | 3.480          | "           | 3.50 | "       | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.138           | 3.505          | "           | "    | "       | "           | "      | "     | "                | 22" | 12"     | 9"      | "      |
| 0.140           | 3.556          | 28          | "    | 9/64    | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.141           | 3.581          | "           | 3.60 | "       | "           | "      | "     | 31"              | "   | "       | "       | "      |
| 0.144           | 3.658          | 27          | "    | "       | "           | "      | "     | "                | 23" | "       | "       | "      |
| 0.145           | 3.683          | "           | 3.70 | "       | 7           | "      | "     | 32"              | "   | "       | "       | 7"     |
| 0.146           | 3.708          | "           | "    | "       | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.147           | 3.734          | 26          | 3.75 | "       | "           | 6-32   | "     | "                | "   | "       | "       | "      |
| 0.149           | 3.785          | 25          | 3.80 | "       | "           | "      | "     | "                | "   | "       | 9-1/2"  | "      |
| 0.150           | 3.810          | "           | "    | "       | "           | "      | "     | 33"              | 24" | 13"     | "       | "      |
| 0.152           | 3.861          | 24          | "    | "       | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.153           | 3.886          | "           | 3.90 | "       | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.154           | 3.912          | 23          | "    | "       | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.155           | 3.937          | "           | "    | "       | "           | "      | "     | 34"              | "   | "       | "       | "      |
| 0.156           | 3.962          | "           | "    | 5/32    | "           | "      | "     | "                | 25" | "       | 10"     | 7-1/2" |
| 0.157           | 3.988          | 22          | 4.00 | "       | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.159           | 4.039          | 21          | "    | "       | "           | "      | "     | 35"              | "   | "       | "       | "      |
| 0.161           | 4.089          | 20          | 4.10 | "       | "           | 10-32  | "     | "                | "   | 14"     | "       | "      |
| 0.162           | 4.115          | "           | "    | "       | 6           | "      | "     | "                | "   | "       | "       | "      |
| 0.163           | 4.140          | "           | "    | "       | "           | "      | "     | "                | 26" | "       | "       | "      |
| 0.164           | 4.166          | "           | "    | "       | "           | "      | "     | 36"              | "   | "       | 10-1/2" | "      |
| 0.165           | 4.191          | "           | 4.20 | "       | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.166           | 4.216          | 19          | "    | "       | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.167           | 4.242          | "           | 4.25 | "       | "           | "      | "     | "                | "   | "       | "       | 8"     |
| 0.168           | 4.267          | "           | "    | "       | "           | "      | "     | 37"              | "   | "       | "       | "      |
| 0.169           | 4.293          | 18          | 4.30 | "       | "           | "      | "     | "                | 27" | "       | "       | "      |
| 0.171           | 4.343          | "           | "    | 11/64   | "           | "      | "     | "                | "   | "       | 11"     | "      |
| 0.172           | 4.369          | "           | "    | "       | "           | "      | "     | "                | "   | 15"     | "       | "      |
| 0.173           | 4.394          | 17          | 4.40 | "       | "           | 8-32   | "     | 38"              | "   | "       | "       | "      |
| 0.175           | 4.445          | "           | "    | "       | "           | "      | "     | "                | 28" | "       | "       | "      |
| 0.177           | 4.496          | 16          | 4.50 | "       | "           | "      | "     | 39"              | "   | "       | 11-1/2" | 8-1/2" |
| 0.180           | 4.572          | 15          | "    | "       | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.181           | 4.597          | "           | 4.60 | "       | "           | "      | "     | "                | 29" | "       | "       | "      |
| 0.182           | 4.623          | 14          | "    | "       | 5           | "      | "     | 40"              | "   | "       | "       | "      |
| 0.184           | 4.674          | "           | "    | "       | "           | "      | "     | "                | "   | 16"     | "       | "      |
| 0.185           | 4.699          | 13          | 4.70 | "       | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.186           | 4.724          | "           | "    | "       | "           | "      | "     | 41"              | "   | "       | "       | "      |
| 0.187           | 4.750          | "           | 4.75 | 3/16    | "           | "      | "     | "                | "   | "       | 12"     | 9"     |
| 0.188           | 4.775          | "           | "    | "       | "           | "      | "     | "                | 30" | "       | "       | "      |
| 0.189           | 4.801          | 12          | 4.80 | "       | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.191           | 4.851          | 11          | "    | "       | "           | "      | "     | 42"              | "   | "       | "       | "      |
| 0.192           | 4.877          | "           | 4.90 | "       | "           | "      | "     | "                | "   | "       | "       | "      |
| 0.193           | 4.902          | 10          | "    | "       | "           | "      | "     | "                | "   | "       | "       | "      |

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## UNIVERSAL MODELING SIZES CHART

| English<br>(in) | Metric<br>(mm) | Drill Sizes |      |         | Wire<br>AWG | Screws |       | Scale dimensions |     |     |     |         |
|-----------------|----------------|-------------|------|---------|-------------|--------|-------|------------------|-----|-----|-----|---------|
|                 |                | ANSI        | ISO  | Decimal |             | TAP    | CLEAR | Z                | N   | HO  | S   | O       |
| 0.194           | 4.928          | "           | "    | "       | "           | "      | "     | "                | 31" | "   | "   | "       |
| 0.195           | 4.953          | "           | "    | "       | "           | "      | "     | 43"              | "   | 17" | "   | "       |
| 0.196           | 4.978          | 9           | 5.00 | "       | "           | "      | "     | "                | "   | "   | "   | "       |
| 0.198           | 5.029          | "           | "    | "       | "           | "      | "     | "                | "   | "   | "   | 9-1/2"  |
| 0.199           | 5.055          | 8           | "    | "       | "           | "      | "     | "                | "   | "   | "   | "       |
| 0.200           | 5.080          | "           | 5.10 | "       | "           | "      | "     | 44"              | 32" | "   | "   | "       |
| 0.201           | 5.105          | 7           | "    | "       | "           | "      | 10-32 | "                | "   | "   | "   | "       |
| 0.203           | 5.156          | "           | "    | 13/64   | "           | "      | "     | "                | "   | "   | 13" | "       |
| 0.204           | 5.182          | 6           | 5.20 | "       | "           | "      | "     | "                | "   | "   | "   | "       |
| 0.205           | 5.207          | 5           | "    | "       | 4           | "      | "     | 45"              | "   | "   | "   | "       |
| 0.206           | 5.232          | "           | 5.25 | "       | "           | "      | "     | "                | 33" | "   | "   | "       |
| 0.207           | 5.258          | "           | "    | "       | "           | "      | "     | "                | "   | 18" | "   | "       |
| 0.208           | 5.283          | "           | 5.30 | "       | "           | "      | "     | "                | "   | "   | "   | "       |
| 0.209           | 5.309          | 4           | "    | "       | "           | "      | "     | "                | "   | "   | "   | 10"     |
| 0.210           | 5.334          | "           | "    | "       | "           | "      | "     | 46"              | "   | "   | "   | "       |
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| 0.216           | 5.486          | "           | 5.50 | "       | "           | "      | "     | "                | "   | "   | "   | "       |
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| 0.219           | 5.563          | "           | "    | "       | "           | "      | "     | "                | 35" | "   | "   | "       |
| 0.220           | 5.588          | "           | 5.60 | "       | "           | "      | "     | "                | "   | "   | "   | "       |
| 0.221           | 5.613          | 2           | "    | "       | "           | "      | "     | "                | "   | "   | "   | "       |
| 0.223           | 5.664          | "           | "    | "       | "           | "      | "     | 49"              | "   | "   | "   | "       |
| 0.224           | 5.690          | "           | 5.70 | "       | "           | "      | "     | "                | "   | "   | "   | "       |
| 0.225           | 5.715          | "           | "    | "       | "           | "      | "     | "                | 36" | "   | "   | "       |
| 0.226           | 5.740          | "           | 5.75 | "       | "           | "      | "     | "                | "   | "   | "   | "       |
| 0.227           | 5.766          | "           | "    | "       | "           | "      | "     | 50"              | "   | "   | "   | "       |
| 0.228           | 5.791          | 1           | 5.80 | "       | "           | "      | "     | "                | "   | "   | "   | "       |
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| 0.231           | 5.867          | "           | "    | "       | "           | "      | "     | "                | 37" | "   | "   | "       |
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| 0.234           | 5.944          | A           | "    | 15/64   | "           | "      | "     | "                | "   | "   | 15" | "       |
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| 0.238           | 6.045          | B           | "    | "       | "           | "      | "     | "                | 38" | "   | "   | "       |
| 0.240           | 6.096          | "           | 6.10 | "       | "           | "      | "     | "                | "   | "   | "   | 11-1/2" |
| 0.241           | 6.121          | "           | "    | "       | "           | "      | "     | 53"              | "   | 21" | "   | "       |
| 0.242           | 6.147          | C           | "    | "       | "           | "      | "     | "                | "   | "   | "   | "       |
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| 0.245           | 6.223          | "           | "    | "       | "           | "      | "     | 54"              | "   | "   | "   | "       |
| 0.246           | 6.248          | D           | 6.25 | "       | "           | "      | "     | "                | "   | "   | "   | "       |
| 0.248           | 6.299          | "           | 6.30 | "       | "           | "      | "     | "                | "   | "   | "   | "       |
| 0.250           | 6.350          | E           | "    | 1/4     | "           | "      | "     | 55"              | 40" | "   | 16" | 12"     |

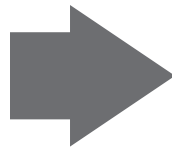
Note:

On any ten-thousandths place past the decimal, rounded up on drill size and rounded down on wire size. The idea is to end up drilling a hole for a given wire size that actually allows the wire to fit into the hole!

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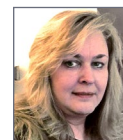
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(Updated 06/02/19)

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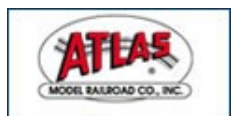
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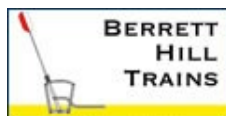
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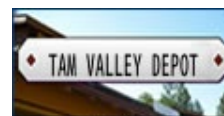
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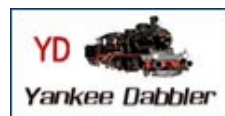
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# PUBLISHER'S MUSINGS



Model Railroad Hobbyist | June 2019

**NICHOLAS KALIS:** COMBATING THE  
"TEXAS SYNDROME" (JOE HANDS OFF  
THIS MONTH'S EDITORIAL TO A GUEST)

★★★★★  
**RATE THIS ARTICLE**

**WOULD BANISHING "DREAM LAYOUT" FROM OUR** vocabulary help our hobby? I sometimes think so. Dream layouts are often just that, a dream. They rarely get finished and in too many cases, never really started.

I come to this conclusion from serving many years as the layout tour coordinator for my Potomac Division of the Mid East Region.

What is our challenge? I sometimes call it the "Texas syndrome" – the feeling that bigger or biggest is best. They say proudly that everything is bigger in Texas – that's fine with me.

Striving for the best is in the American DNA (or even in the human DNA). And that's fine. But do dreams of basement empires suit most modelers? I think not. Do not get me wrong, I love visiting a basement empire and have done so many times. Visitors are charmed and hosts are fulfilled.

As a serving NMRA layout tour coordinator, I have gladly signed up owners of basement empires as hosts for our layout tours. Nothing I write here should be misconstrued as some attack on the basement empire.

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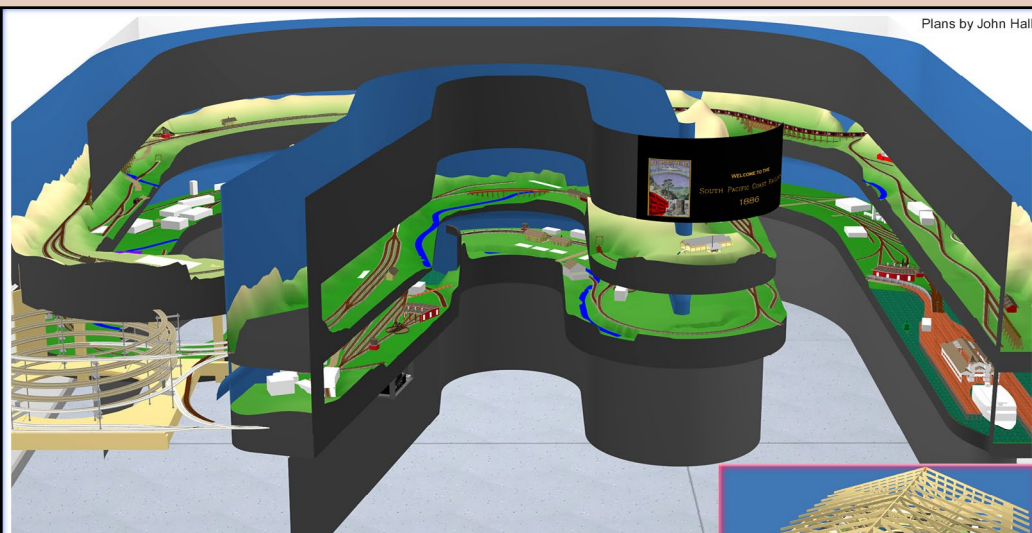
Keep building them and they will come – to paraphrase a line from a popular movie. If you have the talents to build a basement empire, all power to you! Do it and don't look back.

All I seek is a frank discussion of what the rest of us can do to get out of our armchairs.

Reading overseas model railroad magazines and comparing them with those published here in the states, I cannot help but see a great difference. Our American modeling magazines celebrate 'bigger is better.' It is hard to quarrel with that. Even when they run an article about a supposed small layout, it is not that small.

In contrast, many overseas magazines – and Bob Brown's *Narrow Gauge and Shortline Gazette* \* – can devote an article of several pages to a layout a mere one foot by four feet.

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## PUBLISHER'S MUSINGS | 3

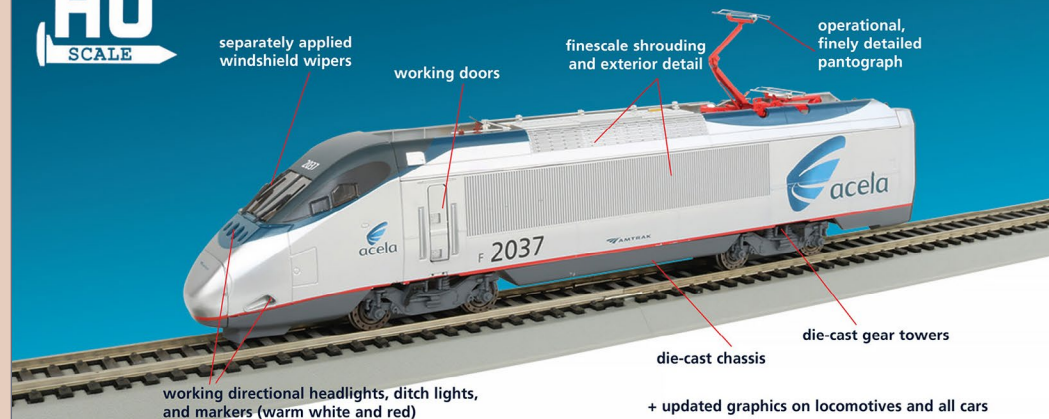
Overseas model railroad magazines seem better at encouraging smaller layouts that celebrate creativity and a host of other goals we seek as model railroaders.

I firmly believe that the modeling press' short run goals of selling magazines to those who enjoy basement empires is at cross purposes with the publishing houses' long-term interest in a growing subscriber base rather than a dwindling one.

How many of you have overheard at a train show one fellow telling another that he will never build a layout? How many of you have heard a fellow modeler remark something to the effect "well, his layout is mighty big, but when I build mine, it will be bigger."

From where else might I draw my observations, besides contrasting domestic and foreign magazines or statistics that showing falling membership in groups like the NMRA?

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NMRA membership numbers are down, *Model Railroader* pages are down, *Model Railroader* subscribers are down. Magazines many of us enjoyed have folded. Before you accuse me of being Chicken Little shouting “the sky is falling”, let’s have a candid discussion of what ails us.

I have shared these thoughts elsewhere and can predict the reaction to my message. One fellow once wrote that I must be one of those folks against grading for school children – his message was that since I encourage building small layouts, I must be an advocate for mediocrity. How wrong he was and is!

The most troubling aspect of hostility to smaller layouts seems to be that a small, vociferous minority in our hobby are confirmed armchair modelers. They will never be coaxed out of their armchairs; rather, they want a steady supply of basement empires to visit either vicariously through publications or through an actual open house during a layout tour.

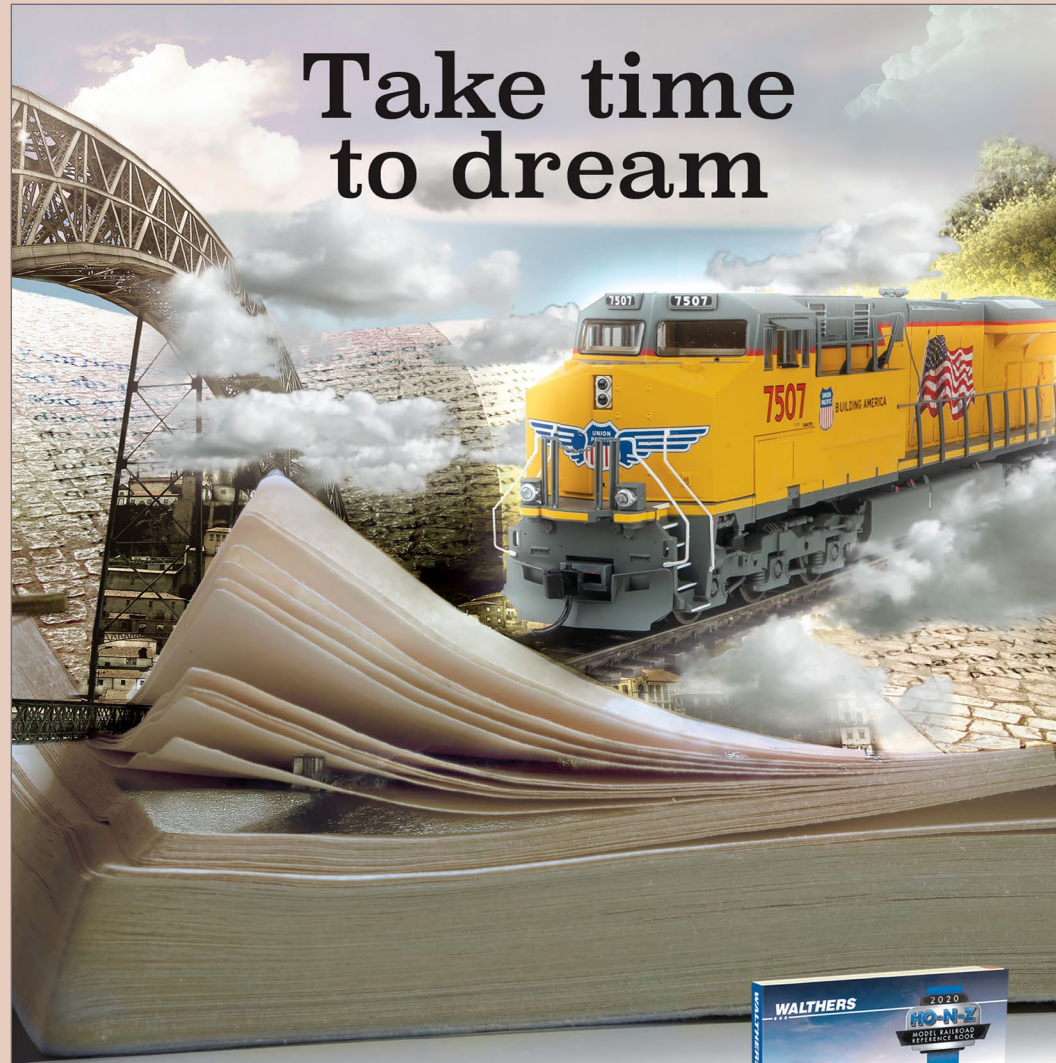
The NMRA is a big tent – the confirmed armchair modelers should be as welcome as the builders of basement empires. What should not be tolerated is a negative bias toward small layouts.

Another source of my view comes from my annual visits to the Northern Virginia IPMS’s show at Fairfax High School. Most NMRA folks I have met have never even heard of the International Plastic Modeler’s Society; I was introduced to them by Ari Pappas.

Without getting too dramatic, I would implore model railroaders and my fellow NMRA members to attend a local IPMS show. You will confirm what I see – those attending such shows are one or two generations younger than many of us. And they spend – witness the bags of goodies each one seems to be carrying in the parking lot as they return to their cars. They also seem to be active builders.

It does us no good to contrast their hobby. Some are military modelers but there is much more – fantasy subjects, dioramas, civilian

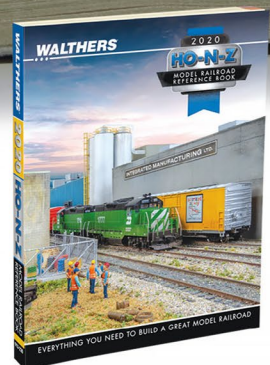
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vehicles, etc. Some folks say NMRA membership is dwindling because fewer of us are exposed to trains now than in generations past. This argument loses credibility when we consider that few members of the thriving military modeling community have seen a tank rumble down their street.

Some say we have all heard this before, that “our hobby is dying” is a well-worn canard and they scoff at this supposed problem. They point to modelers getting information from the internet and to the great growth in product availability.

I concede both those points but why do we have fewer members in the NMRA? Why does our average age seem to creep higher and higher? Some contend that an aging membership is natural – that the hobby appeals to folks who have leisure time in retirement to pursue a passion.

How can we dodge the challenge of the internet? We can't. Could it be those who say an aged membership is natural are in error? What about the challenge that modeling does not equate with grey hair – the IPMS members I have observed prove this contention false.

What can we modelers do? Voice your opinion to your fellow modelers and NMRA members and leaders to encourage more armchair modelers to become active hobbyists through smaller layouts.

Encourage publishers to give us more articles about micro layouts, exhibition layouts, and even just smaller layouts. Get your division and region to offer prizes at conventions to the best exhibition layout entered in its contests.

And if you are an armchair modeler, get out of your armchair and build an exhibition layout – and subscribe to a magazine that encourages this sort of modeling. Visit YouTube and search for exhibition model railroads. Some neat ones are exhibited at the OnTrax annual show at the Spoorwegmuseum in Utrecht, Netherlands – videos

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## PUBLISHER'S MUSINGS | 6

about showcasing the layouts  
to be seen at this show.

Perhaps the best thing you can  
do as an ex-armchair modeler  
is to bring a module or two to a  
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J. Fugate

## THOUGHTS ON LAYOUT SIZE

Having built a larger layout myself and having toured a lot of layouts, I can testify to the huge effort commitment of a larger layout, and to the massive Plywood Pacifics I've seen that end up still-born. The modeler just didn't realize what they were signing up for, and although they believed larger just had to be better, the huge project scope ultimately overwhelmed them. Sadly, more than a few of these disenchanted modelers have left the hobby.

That's why we do our small room layout contests, and why we promote the TOMA (The One Module Approach) concept so much. The idea is to apply modular methods to a single-owner home layout rather than just to a club multi-member show layout. You can dream big, but your chances of success are much better if you start small with just one or two modules and build them to completion: then add staging and run trains.

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For more on TOMA, see our bibliography in the August 2017 MRH: [[mrhmag.com/magazine/2017-08/online/22](http://mrhmag.com/magazine/2017-08/online/22)].

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**4.9** Publishers Musings: Keeping track clean longer?

**4.7** May 2019 news

**4.6** Tool shed: Chopper improvements

Issue overall: **3.5**

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# MRH WEBSITE



Model Railroad Hobbyist | June 2019



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compiled by **JOE FUGATE**

## The Hills Line - Starting the Signature Scene

Mon, 2019-05-27 16:24 — jfmcnab

First steps are underway for the signature scene on The Hills Line, the Iowa Interstate's bridge over the Iowa River and the CIC Hills Line in Iowa City. More than any other locale on the prototype, the former Rock Island bridge could reasonably be considered the signature scene for the entire IAIS Railroad.



1. Who says the magazines are afraid to show under construction photos? We like this shot by *jfmcnab* and his thread where he discusses his new layout and developing its signature scene ...

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



## Switch stand targets

Mon, 2019-05-20 20:08 — ctxmf74 Track and electrical/DCC Trackwork

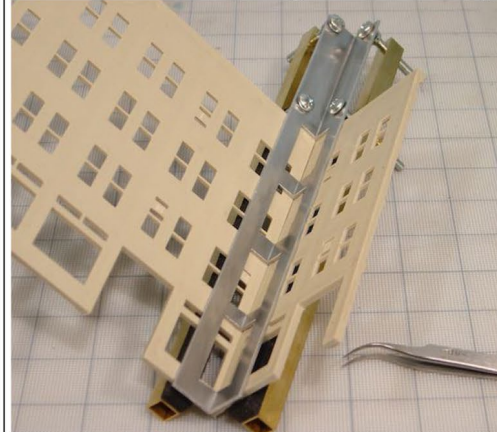
I use the Caboose Industries 204S switch stands on my S scale layout. They have plenty of throw for S scale and look decent when weathered. I don't like the plastic targets that come with them and have to be glued to their wire staff so I make new targets from thin brass sheet and .028 brass wire. I made a simple jig to hold the pieces while soldering them. The brass wire is nice as it will bend if hit and lessen the strain on the plastic stand. Photos show jig, a pile of targets, and a stand with the brass wire and target installed....DaveB



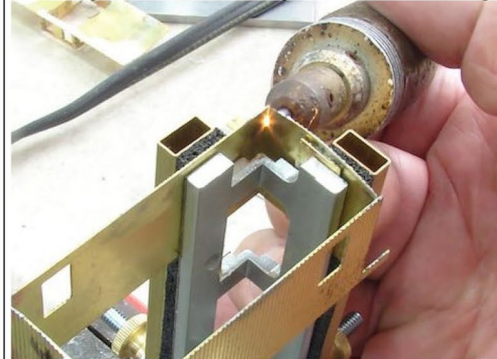
2. MRH forum member *ctxmf74* makes his own switch stand targets from brass and then attaches them to Caboose Industries ground throws for a more authentic look ...

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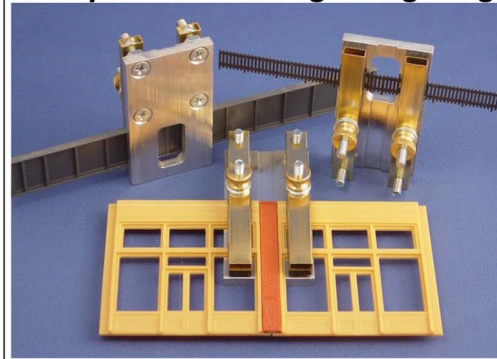
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## Getting Started with the Model

Wed, 2019-05-22 09:54 — emillerz

I have actually modeled a C415 before, twice. About 10 years ago, I purchased an IHC C415 and repainted it Rock Island blue/white to go with what I was modeling back then. I added DCC to it and it ran terribly, so I shelved it for a while. I brought it back out in 2013, replaced the drive and part of the chassis with parts from an Atlas/Kato RS3, added some new details to the shell and replaced the handrails, and added sound. At this time, it was going to be a transfer run from South Omaha as part of my fantasy Omaha Terminal concept.



This only lasted a few months and then I used the drive and decoder to build an Iowa Interstate RS36:

<https://model-railroad-hobbyist.com/node/26187>

This idea also did not last long and the RS36 is long gone from my roster.

So I dug through my parts bin, figuring out what I still had to build this C415 for the third time. I still had the shell, although it was not in the best shape, and the chassis was a complete wreck. However, this gave me an opportunity to do an even better job at modeling the chassis. After thinking about it, I settled on two options: I could go with the Atlas/Kato drive and trucks again, or I could use a drive and trucks from a Stewart/Kato F7, swapping the sideframes for a set of AAR-B truck sideframes that I had on hand. While the Stewart/Kato U25B AAR-B truck sideframes are not a perfect size for the real trucks, they are very close and the bearings match those of the C415s in the later years. Plus, the slightly shorter truck length is a little more forgiving under the chassis. I decided to buy a few parts and try things out, then sell what I didn't need.

Here is a photo of (from top to bottom) the Atlas/Kato RS3 chassis, the Stewart/Kato F7 chassis (milled down, from a slug project that I never completed), and a frame from a Proto 2000 FA, which has very similar dimensions to the C415.

3. Eric Miller, aka *emillerz*, has changed his modeling direction (was doing the SPSF) and decided to model this Alco C415. He describes the prototype and then launches in modeling it ...



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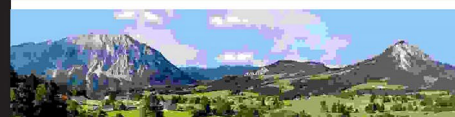
Joe Fugate,  
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## car cards it is then

Tue, 2018-06-26 09:41 — mesimpson Operations



I've finally decided to go the car card route for the Hudson Bay Railway. I have waffled between using switchlists, car cards, even tabs on car. I have used all three methods on other layouts I operate on, and all have their advantages and disadvantages. I elected to go with car cards for a couple of reasons, the main one being that the pool of operating layouts in the greater Vancouver area overwhelmingly use this system so the pool of operators available are quite familiar with this system. The switchlist approach is attractive from a prototypical viewpoint but only a couple of layouts here use this system. One local modeller has developed an interesting system that he is willing to adapt to other layouts but there are still some bugs to work out. I may eventually change over to a switchlist system but for now I'm scribbling up cards as I ride the West Coast Express to and from work. I railfan and work on the layout at the same time. Good way to spend my commute.

Marc Simpson

[mesimpson's blog](#)

## Comments

### 4 move

Tue, 2018-06-26 10:02 — dave1905

Just remember that you don't HAVE to use all 4 moves, most of my waybills are 1 or two moves. On a smaller layout, the 2 move waybills can be more flexible and easier to balance flows.

Dave Husman

Modeling the Wilmington & Northern Branch in 1900-1905



4. In his blog, *mesimpson* describes his decision to finally go with car cards for operation versus other methods. Other comments in the thread give some great car card ops details ...

## "the Magic of the Night"

Mon, 2019-05-27 19:52 — dolson

Figured it was about time to take a few night shots of the Ruphe & Tumbelle Rwy.

A quiet night in the roundhouse



Dawn is breaking on the other side of the yard



5. A recent Weekly Photo Fun thread has some cool night photos by forum member *dolson*. Click this page and go have a look, that's some nice work there ...





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# WHAT'S NEAT

column



Model Railroad Hobbyist | June 2019 | #112

**KEN PATTERSON** AND FRIENDS CHECK IN  
ON RAND HOOD'S LAYOUT PROGRESS, MEET  
THE NEW MEXICO MODULAR RAILROAD  
CLUB NARROW GAUGERS, VISIT SAM SYZDEK AND HIS HIGHLY DETAILED  
RAILROAD, AND TALK WITH THE PEOPLE EXPANDING THE SAN JUAN  
MODEL COMPANY ...



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## THIS MONTH WE'VE GOT A GREAT SHOW!

Rand Hood shows us several buildings he has scratchbuilt for his planned layout.

- At the Rocky Mountain Train Show we talk to members of the New Mexico Modular Railroad Club.
- Campbell Rice shares with us Sam Syzdek's beautiful layout and craftsman structures.
- We interview Doug Junda and John Engstrom of San Juan Model Company about their plans for the companies they have purchased.
- Drayton Blackgrove shares more of his drone footage in "Modeling Ideas from Above." ✓

► PHOTOS AND VIDEO OF SUPERB MODELING



## Railroading with Rand Hood



1. Rand Hood is already building structures for his new railroad, including the section house and foreman's house in Pinecliffe CO. He's still working on layout plans, but it's probably going to look like the Colorado Rockies.

While his layout is still in the planning stages, Rand Hood is building structures and other models for it. In Austin Allard's interview, see what Rand is both building and planning for his next layout.



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

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2. North Yard Tower in Denver, Colorado will immediately set the scene for Rand's latest project.

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## New Mexico Narrow Gauge Modular Railroad Club



### 3. Rocky Mountain Train Show visitors are fascinated by the New Mexico Modular Railroad Club's work.

During Ken Patterson's visit to the Rocky Mountain Train Show, he took the opportunity to visit with members of the New Mexico Modular Railroad Club, who describe their detailed modules and module standards -- including their use of 5000K lights, both for the daylight effect and their ability to allow viewers to take photos of the layout.



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### 4. Clark O'Byrne says the club started in 2004 and is now on its third iteration, with three brand new segments displayed for the first time at the Denver show.



**A MODULE CREATES A LAYOUT**  
Jason Miller shows step-by-step how starting with a single module ultimately lead to an entire layout.

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## Cheryl Lavender's Hermosa



5. Small wood frame buildings and a rushing creek set a mountain hamlet scene on the New Mexico club's Hermosa module.

A member of the New Mexico Modular Railroad Club, Cheryl Lavender's model of the Hermosa Creek bridge was what got her started in the hobby. She also specializes in figure painting, enjoying the detail work involved in faces and colors.



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6. Cheryl Lavender got her model railroading start building the Hermosa Creek bridge.



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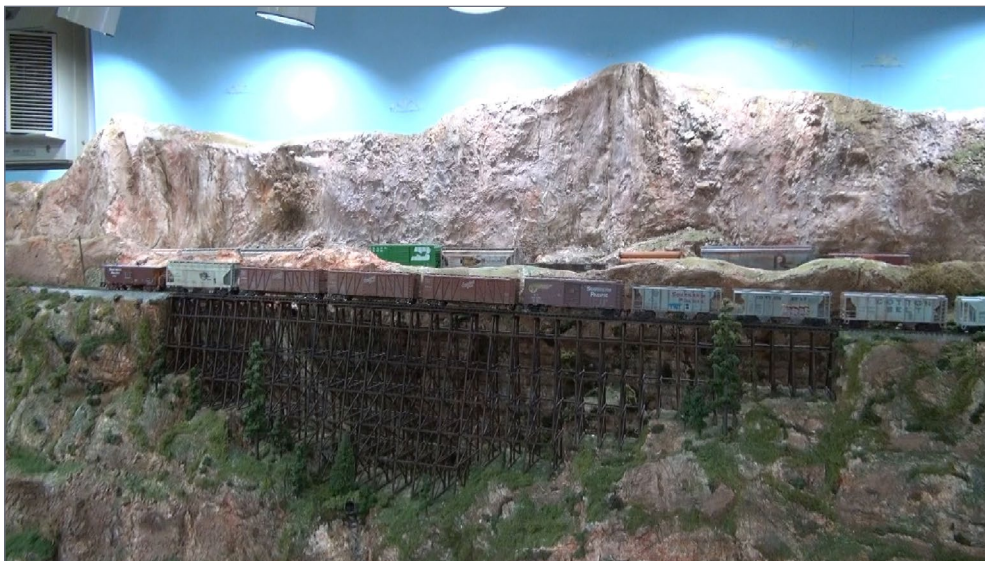
### Sam Syzdek's HO layout



7. Lots and lots of expertly built kits make up the cities on Sam's railroad.

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8. The trestle was built using two plastic kits. Sam rescued it from his layout in Texas when he made the move to Colorado.



9. A photo in a book inspired the wayside tavern which is one of Sam's few scratchbuilding projects. Blair Line's owner spotted it and turned it into a kit.



10. Cars, trucks, sidewalks, buildings, and traffic signals give life to street scenes.

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







11. After too many hot summers and cold winters, Sam Syzdek (left) turned his garage workshop into a climate controlled getaway. Interviewer Campbell Rice (right) is impressed and a little envious.

Campbell Rice's interview of Sam Syzdek covers what he enjoys doing in the hobby, including the many varied building kits and scratchbuilt details like traffic signals. He shows how details such as cars and people bring buildings on his layout to life, making it look like they're doing something. Sam has also converted his garage into a shop area that is insulated so that he can comfortably work in it year-round.



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## San Juan Model Company



12. Ken Patterson questions John Engstrom (center) and Doug Junda about San Juan Model Company's plans.

Doug Junda and Bob Stears are showing their passion for trains by purchasing American Limited Models, San Juan Decals, San Juan Model Car Company, Grandt Line and Rail Graphics to join their own Leadville Shops. The combined company is called San Juan Model Company ([sanjuanmodelco.com](http://sanjuanmodelco.com)) and their goals include bringing many out of production items in several scales back into production. The individual companies will still maintain their individual identities, and you can get to their websites from the main San Juan Model Company site.



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

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## Modeling Ideas from Above



13. Drayton Blackgrove shares more drone footage and "Modeling Ideas from Above" in the video this month. Pay attention to the height of the trees next to the Quincy High Bridge and imagine, as you look at the Ohio scenery, how this could be built into a nice shelf layout. The drone footage gives great ideas to folks out there.



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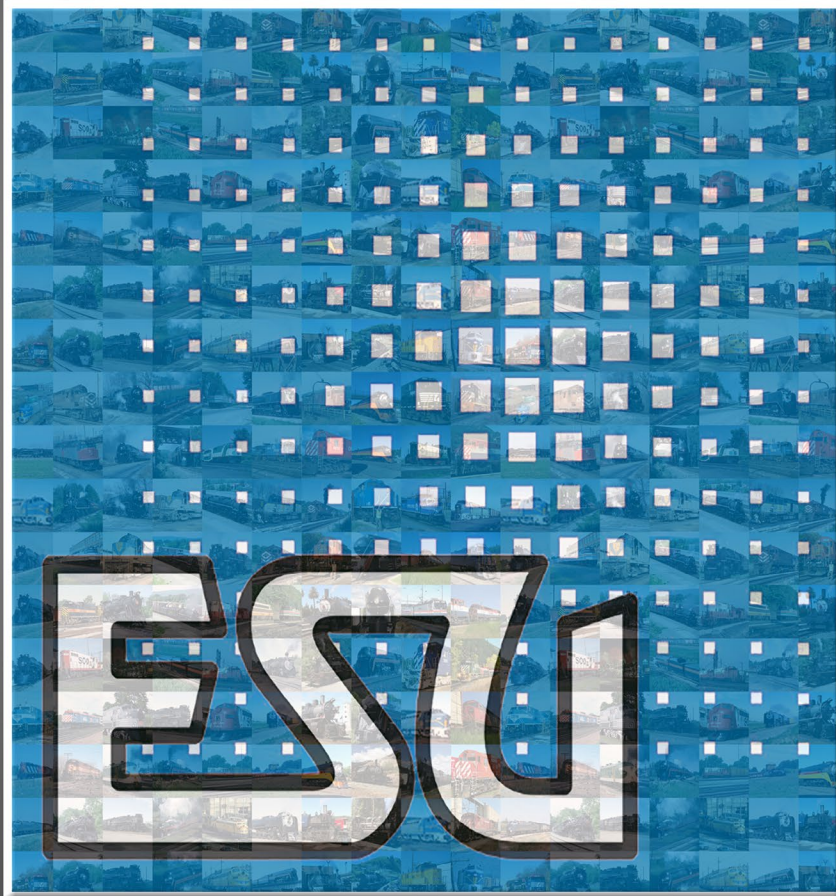
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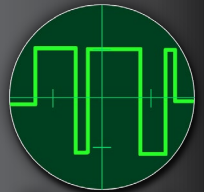
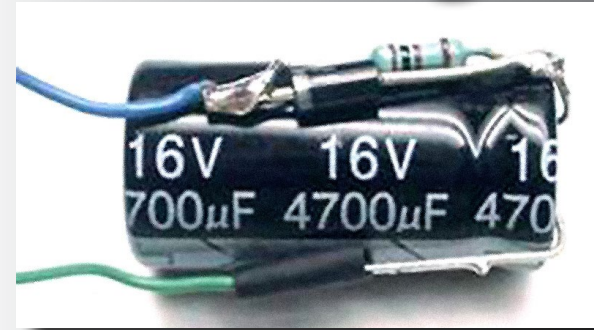
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# Making your own DCC stay-alive



Electrical  
Impulses

Model Railroad Hobbyist | June 2019 | #112

**JOE FUGATE AND MARCUS  
AMMANN** delve into making  
your own stay-alive ...

1. Marcus built his own stay-alive circuit using a 4700µF electrolytic capacitor plus a diode and a resistor.

**LAST MONTH WE DEALT WITH USING COMMERCIAL**  
stay-alive decoder add-ons.

One not-insignificant aspect of stay-alive add-ons – they're not inexpensive.

Depending on the vendor and format, they can cost you anywhere from \$20-\$40 each.

If you build a stay-alive yourself, it will generally cost you from \$5-\$10, a significant savings. Let's show you how to do just that.



**RATE THIS ARTICLE**

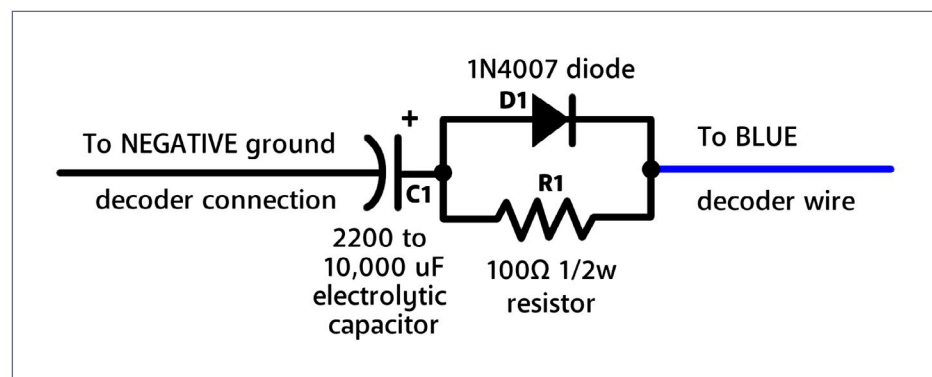
## Single electrolytic capacitor

When first introduced about seven years ago, the earliest stay-alive circuits used a single small electrolytic capacitor. That's still a viable option using the circuit shown below.

Marcus used a 4700uf capacitor [3] for his build of this circuit. 4700uF provides about 1 to 1.75 seconds or so of motor+sound+lighting power. You can find this capacitor at electronic supply online stores for around \$2.00.

The diode and resistor help minimize the in-rush current problem. An empty capacitor charging up can trick the DCC system booster or circuit breakers into thinking there is a short-circuit when power is first applied – either when you first turn on the layout or when you first place a stay-alive-equipped locomotive on powered track.

Connecting a 100-ohm ½-watt resistor in parallel with a 1-amp diode reduces the charging in-rush current, lowering it enough that it no longer makes the booster or circuit breaker trip as



2. Circuit for a simple stay-alive using a single electrolytic capacitor. See [3] for a recommended capacitor.

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## MAKE YOUR OWN STAY-ALIVE | 3

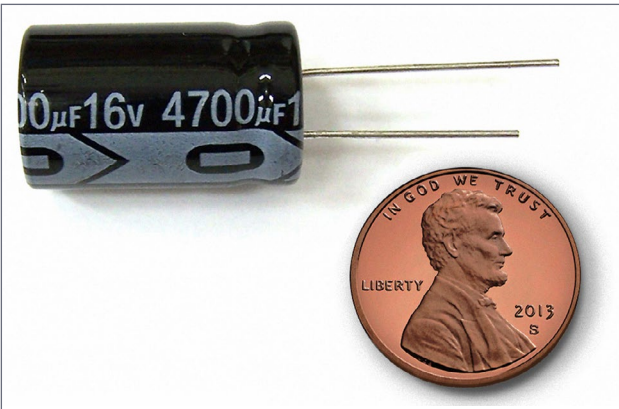
if there is a short. This also slows down the charging rate. The diode “bypasses” the 100-ohm resistor when the capacitor discharges during a “stay-alive” situation.

When connecting the stay-alive to a decoder, if the decoder has no stay-alive solder pads or identified connection locations in the instructions, see last month’s article on locating a decoder’s negative ground. The blue wire just connects to the decoder’s blue wire.

### Super-capacitor array

Most modern stay-alive products use an array of super-caps to put a lot of capacitance in a small package. [4] shows a diagram for this type of array stay-alive circuit.

This circuit is more fiddly to build because of all the parts, but the combined 5-Farad capacitance (from five 1F capacitors in parallel) provides motor+sound+lighting for well over 10 seconds. This circuit also benefits from adding a shrink-tubing cover – see the note on this.



**3. Recommended capacitor:** We recommend a 4700 uF 16V capacitor made by Panasonic, part number EEU-HD1C472B. This capacitor is just 12.5mm x 25mm (0.5" x 1.0").



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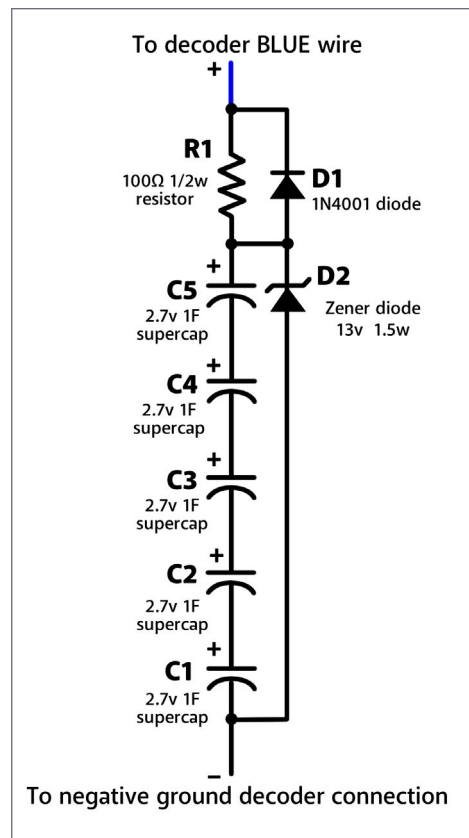
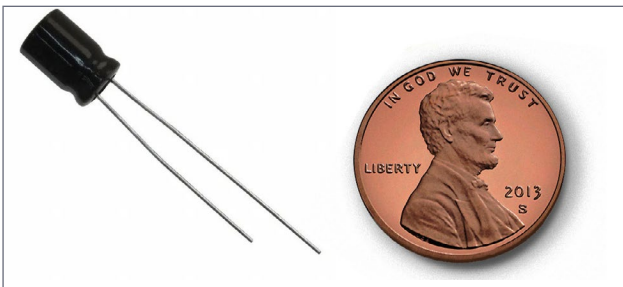
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5. Recommended super-cap: We recommend a 1F 2.7v super7-cap made by Nichicon, part number JUWT1105MCD.

This capacitor is just 6.3mm x 10.5mm (0.25" x 0.41"), making a five-array set about 32mm long x 11mm wide x 6.3mm thick (1.25" x 0.43" x 0.25"). These are about 70 cents each, so a set of five costs about \$3.50.



Again if you aren't sure where to connect up this circuit to the decoder, see last month's article on locating a decoder's negative ground. The blue wire just connects to the decoder's blue wire.

YouTube has two very good stay-alive build videos using super-caps [6, 7].

4. Stay-alive circuit using five super-caps, plus a diode, resistor, and a Zener diode to regulate voltage.



6. George Nefstead (Milwaukee-area modeler) builds a super-cap array stay-alive using surface-mount diodes and an SMD resistor.



7. Larry Puckett [DCC guy], contributing editor and the DCC Corner columnist for Model Railroader magazine, builds a super-cap array stay-alive.





8. DCC Concepts' zen stay-alive circuit is a very affordable \$19 US, or \$17.50 in packs of three. Watch the video [9] →

Web: [www.dccconcepts.com/product/zen-super-high-power-stay-alive-x-1](http://www.dccconcepts.com/product/zen-super-high-power-stay-alive-x-1).



## Another option: DCC Concepts

Recently we found DCC Concepts (European company) offers a built-up five-super-cap stay-alive circuit for less than \$20, so if you're just not up to building one of these yourself, but you want something at low cost, then check these out [8, 9]. ✓



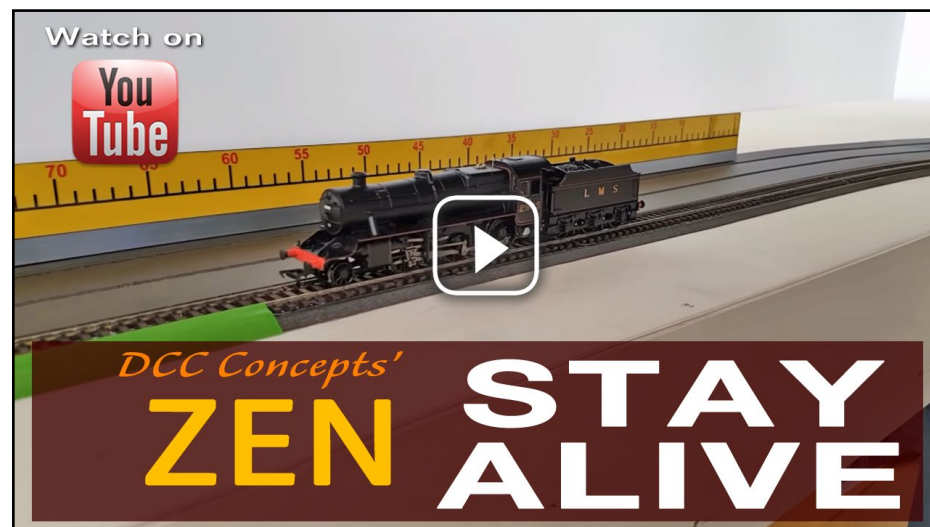
J. Fugate

### SHRINK-TUBING COVER

You can get large shrink-tubing sleeves on Amazon for encasing a super-cap stay-alive array, keeping it insulated and integrated into one professional-looking package.

Here is a roll that's 10 meters of wrap for \$7 with free shipping to Prime members.

WEB: [amzn.com/B071L82PCR](http://amzn.com/B071L82PCR)



9. DCC Concepts demos their zen stay-alive circuit in this video.

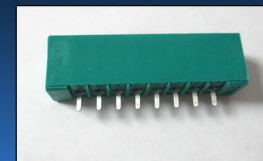
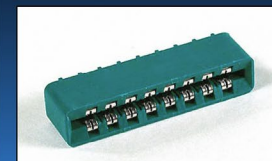
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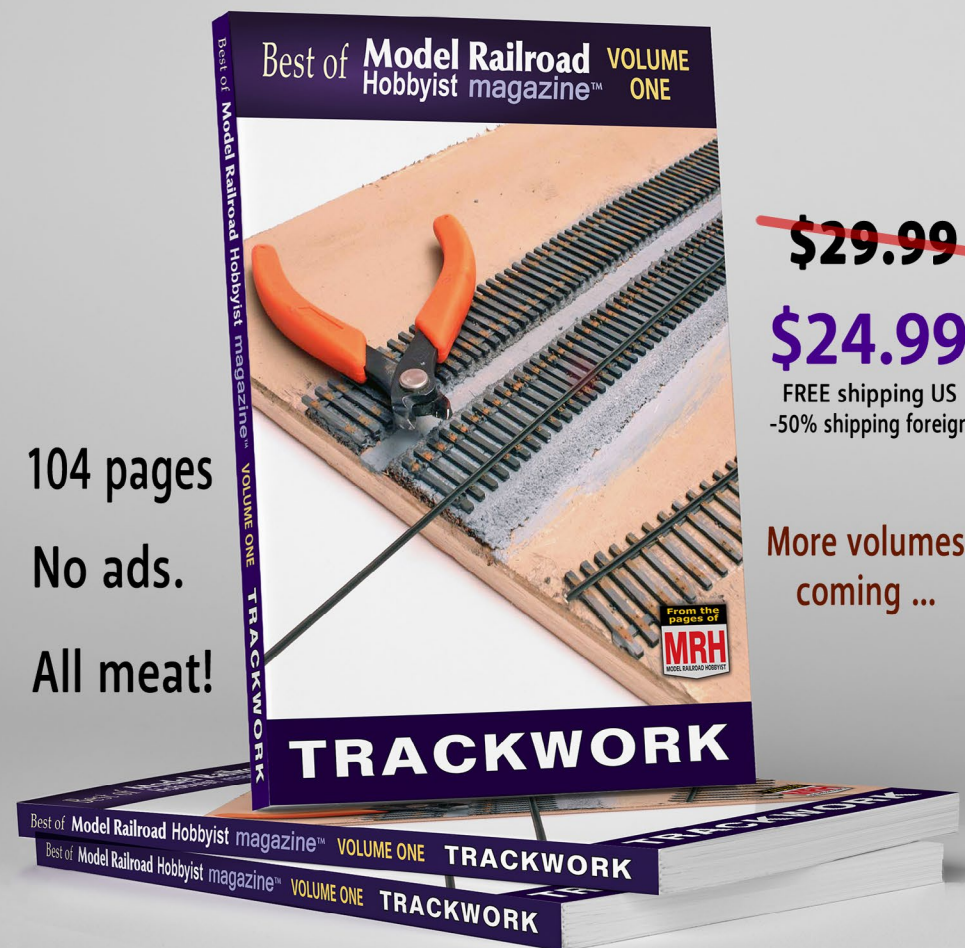
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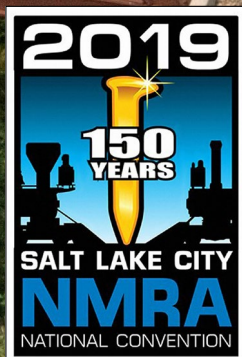
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# Pelle Søbørg's Daneburg Subdivision



Also on TMTV!



Visit this layout at the Salt  
Lake City NMRA convention  
this coming July.

**THE MRH STAFF** *tours Pelle's Nebraska-based layout while Chris Brimley tells how it came to the US from Denmark ...*

1. In the summer of 2017, Pelle Søbørg had some life-changing events that meant he needed to dispose of his current layout. ExactRail got wind of this and made Pelle an offer. The story of what happened next is rather amazing ...





**RATE THIS ARTICLE**

**MRH: HELLO, CHRIS! WHAT IS IT YOU DO FOR ExactRail?**

**Chris Brimley:** I'm the Vice President of Product for ExactRail, and I also have a dual role with TrainLife. I oversee what product we bring in for our company, and then also I'm the overseer and the caretaker of Pelle's layout.

**MRH: So take us back to the beginning – how did ExactRail get the idea of acquiring this layout?**

**Chris:** As ExactRail and TrainLife, we've always wanted to build or have a layout in our store for displaying product, or just something that we could have in here for fun. During the summer of 2017, Pelle Søeborg announced a pretty major life change and unfortunately he would be moving and his layout would no longer have a home.

So Pelle announced the sale of the layout. Initially I think there were a few offers that fell through on it. It was known going in that he would have to part the layout out if it didn't sell. Some modules were going to go to some people, some to other people – but his preference was to sell the layout as a whole.

**MRH: What did you guys do then?**

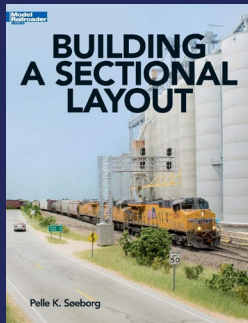
**Chris:** So we just kind of threw an offer out there, not really thinking that it would go anywhere. It became more and more serious as we communicated and ended up he chose us as the new home for his layout!



**2, 3. Pelle has done such a nice job with the scenery on this layout – no matter where you place the camera, you can't find a bad angle!**



## THE ULTIMATE SECTIONAL LAYOUT TEST



Pelle documented building his Daneburg Subdivision layout in his Model Railroader book "Building a Sectional Layout" (available from the TrainLife Store via this link: [mrhmag.com/magazine/url/pelle-daneburg-sub-book](http://mrhmag.com/magazine/url/pelle-daneburg-sub-book)).

By selling his layout to ExactRail's TrainLife store in Provo, Utah, Pelle's sectional layout got its ultimate test by sailing a third of the way around the world on the high seas in a shipping container!



4. Pelle took the layout sections and carefully packaged them up for the 8000-mile trip through two oceans in a shipping container!

It just moved forward from there. Pelle began to disassemble the layout – fortunately he had designed it in a modular way and he was able to easily take it apart [4], to package it up in a container, and then ship it off to us.



5, 6. Unlike the western desert and mountain scenery of Pelle's previous layouts, on this layout he chose to model the fertile US heartland.



**MRH:** How did it get packed, and how was it shipped?

**Chris:** Pelle had a 20-foot container delivered to his home. He disassembled the layout module by module. For some of the modules, he built a basic frame so he could stack the modules on top of each other. Some of the sections, such as the staging yard were a single large piece on his layout, so he cut it in half so it would fit into the container. He had the staging tracks leaning up against one of the container side walls.

The rest of the layout was pretty much just on the floor with some foam dunnage so it wouldn't shift around within the container, and it pretty much just stayed put on the bottom floor. It was a light load and it didn't take up much room: it only took up the bottom three-four feet of the container. The rest of the container was just air space.



7. Pelle mastered the look of contemporary railroading in rural Nebraska on the layout, such as country road crossing. It just looks so natural!



8. Pelle convincingly captured the look of rolling Nebraska hills near a watercourse with this bridge scene.

Once Pelle had it all loaded, they picked up the container at his home and hauled it to port and onto a container ship in Denmark. From Denmark it stopped at a few other ports in Europe, then it went to Savannah, Georgia in the US. From there the ship went to the Panama Canal, and then it came up the west coast and offloaded in Oakland, California.

There they loaded the container onto a train and brought it to Salt Lake City. At Salt Lake it got offloaded onto a chassis, and then we unpacked into our facility here.

**MRH:** What was it like when you received it?

**Chris:** Upon receiving it, we took maybe an hour to unload it out of the container.





9, 10. Pelle built this grain elevator complex using one at Lexington, Nebraska as his inspiration. Even though it is selectively compressed quite a bit, it still dominates the scene.

But in the meanwhile, when the layout was still in transit, we had to build supporting benchwork for it since that was one of the items that was *not coming* with the layout. All we were getting was each modular section and the skyboard of the layout.

We prebuilt the benchwork so that once it came in, we just offloaded each section and placed it at its proper location on our new benchwork.

Everything went together rather quickly – most of the time spent was mating up each module, getting the alignment of the track correct, and then placing the skyboards that Pelle had sent.

Everything ended up being surprisingly plug-and-play, with us having the layout running within a few short hours of unloading the container.

**MRH:** Why *this* layout? Why not something else?

**Chris:** It's a well-known layout and Pelle has a pretty large following. If we weren't going to build it ourselves then we wanted something first class. This is a relatively new layout. Pelle had only finished it – or mostly finished it – the year that he sold it off to us.

We wanted something that we'd be proud of, and something that would bring people into the store. So, it's not just something for us to play trains on, it's a great marketing tool for us as well.

**MRH:** What kind of response are you seeing with the layout in your store?

**Chris:** The response has been very positive with us saving the layout. A lot of people were concerned that the layout was just headed to a dumpster. It's not a historically known layout

because it's so new. But nobody wants to see a layout go to the trash if it *doesn't have to*! I suppose pieces of it would have been saved, but to keep it as a whole – people were excited. And then also there's the fact that even though Pelle is Danish, he's modeling a section of the US, specifically Nebraska.

A lot of people wanted to see the layout and so to bring it to the States excited quite a few people. It made it so much more accessible. People have been thrilled about that.

What has been surprising for us is that not only has the layout brought in a lot of people from the states, we've had multiple people from around the world who have visited. It's been exciting to have people come from Australia, Europe, and Asia stop by to see it.

**MRH:** Tell us more about the layout – what exactly has Pelle built here?

**Chris:** Pelle has modeled a fictional portion of Nebraska. He has a town on it that he calls Daneburg, which is not a real town. Pelle based this town on areas in Nebraska that he drove around to photograph and document prior to doing the layout.

Pelle took aspects that he liked from the US heartland and made it work for the space he had, which is 11 x 22 feet. The basic design of the layout is a loop that's folded onto itself.

It's a double-track layout, so it's not really an operators' layout – but you could turn it into an operators' layout. It has only a few industries that can be switched on it, so it's mostly a layout to railfan. It's a layout to enjoy watching the trains go through the gorgeous scenery that Pelle built.

**MRH:** How does TrainLife fit into the picture with this layout?



11. The UP train blasts for the main street crossing in Daneburg, the namesake town for Pelle's layout. Putting the track halfway into the scene provides some room for scenery between the track and the fascia. The side street implies approaching civilization and gives a sense of locale.

**Chris:** TrainLife is a sister company to ExactRail. We wanted our own hobby store. It's something that we had wanted to do for a very long time and so we were building it out and bringing in new product.

Having this layout seemed to pair nicely with our store. TrainLife as a store is only about three years old. Having this layout would bring attention to TrainLife and help with getting TrainLife better known.



As we continue to grow TrainLife, we're running out of space. We will be expanding into a neighboring space because we want to keep growing this. It's been very successful and we are thrilled with what we've done so far.

ExactRail manufactures HO and N scale rolling stock. It was founded by John Pestana and Chris Clune in 2007 and the first products were released early 2008.

ExactRail strives to produce some of the best rolling stock on the market. We produce products that are scattered over three different product lines. First there's your more basic rolling stock, and then there's middle range cars, and then we have our Platinum Level – our highest detail, highest-fidelity-to-the-prototype cars. We've stayed with freight cars, largely, in what we offer today.

We're excited about the future, and there's a lot of new things coming right now. And with the move of putting TrainLife into the neighboring space, it's also giving ExactRail the needed space for the growth that we're planning over the next several years.

**MRH:** Can you summarize for us again how TrainLine and ExactRail are connected?

**Chris:** ExactRail and TrainLife are owned by the same person, John Pestana. TrainLife was originally eight years ago an online archive of magazines. We had a few of our own articles that we had produced, and we also had an online forum. But new directions at ExactRail took a lot of the attention we had been putting into TrainLife and focused them on ExactRail instead.

Unfortunately TrainLife became bit of a stepchild and it wasn't getting the attention it deserved. We've since rebuilt the magazine archives so they're easier to navigate, easier to view, and



12, 13. The Daneburg main street crossing scene has a strong rural middle America feel to it that Pelle captured well. There's only one structure on each side of the street against the backdrop – the photo backdrop provides the rest of the town!



then turned TrainLife into a hobby store. It's not just online only, but it's a brick and mortar store too. You can stop by and visit the TrainLife store anytime, and see the layout as well. The layout is always open to come see during business hours.

ExactRail and TrainLife are two separate companies and they just share the space, running side by side with each other. Pretty much everybody that works for ExactRail also has a role within TrainLife as well.



14. After passing through Daneburg, the town quickly gives way to rural farmland, this time with a cornfield between the track and the fascia. The track runs a few inches in front of the backdrop and there's just enough room for some bushes or small trees to disguise the joint with the photo backdrop. That leaves a lot of room for scenery in front of the track.



15. Here's another view of the first rural farm scene after leaving Daneburg, behind a nicely weathered red barn. Hidden behind the trees on the far left is the entrance to staging at the other end of the line.



16. Here is the entire Green River bridge scene. The design of this scene allows the tracks underneath to realistically and conveniently disappear into staging.



## PELLE SØEBORG'S DANEBURG SUBDIVISION | 17

**MRH:** People who come to the convention here in Salt Lake this summer, what can they do regarding this layout?

**Chris:** During the 2019 convention in July, our store will be open and we're planning on some giveaways if people come down to the store. We plan to stay open late, for as long of hours as we can, to make it possible for people can come by to shop the store and see the layout.

The layout will be up and running. We'll be kind of split between the show, the convention, and the store. It's going to be a busy week but we're very excited – we expect it to be a fun week! ✓



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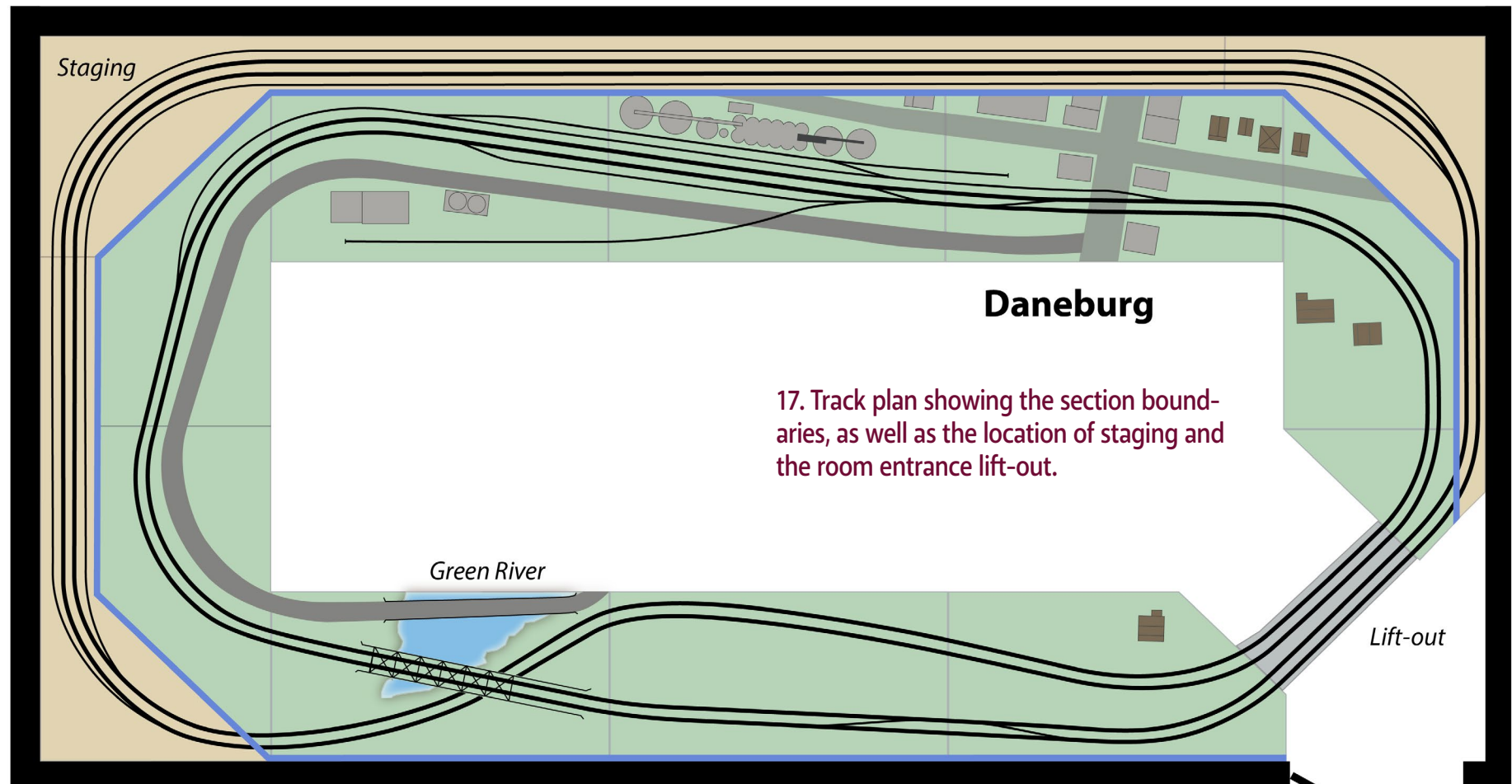
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17. Track plan showing the section boundaries, as well as the location of staging and the room entrance lift-out.



Pelle Søborg's

## Union Pacific Daneburg Subdivision

HO Scale - Size: 11' x 22'

18. The Green River bridge scene [16] has enough elevation for the tracks to pass over each other. On his field trips, Pelle observed that watercourses in Nebraska often run in a gully lower than the surrounding terrain. That makes this clever "flatland" layout design trick quite believable. Nice job, Pelle!







## More convenient loco storage

Model Railroad Hobbyist | June 2019 | #112



**RATE THIS ARTICLE**

**BRENT CICCONE** devises a hands-off way to get locos on or off the layout ...

**LIKE MANY MODEL RAILROADERS, I HAVE AN ABUNDANCE** of locomotives. My layout is a small around the walls shelf layout that probably needs a grand total of two locomotives to operate.

Last time I counted, I own at least a dozen locomotives of various types and descriptions. Probably more if I searched through my closet, but don't let my wife know!

I like to switch them around periodically and run different locomotives, but since I am running mostly steam, this creates problems in handling the locomotives with a tender;

## MORE CONVENIENT LOCO STORAGE | 2

1. A locomotive happily parked inside its protective case, safe from dust and prying hands.

getting all the wheels on the locomotive, tender, pilot trucks and trailing trucks on the rails every time, and potentially breaking off detailed bits and pieces as they are manhandled on and off the layout.

Originally, I had built a turntable at one end of the layout using an Atlas turntable as a base. It worked okay but sometimes had alignment issues. The biggest issue with a turntable and associated locomotive tracks is the space that they occupy.

Even with the turntable, I still only had room to keep about four or five locomotives on the tracks; the rest had to be stored in boxes.

I eventually tore that turntable out and replaced it with a stub-ended yard. That has proven to be far more useful than the turntable ever was. The problem now was: how to turn the steam locomotives around? This problem is not restricted to the steamers as many diesels are also single-ended.

I pondered this for a while and searched around the Internet for ideas. I found the PECO loco lift at [peco-uk.com/products/loco-lift-and-storage-unit](http://peco-uk.com/products/loco-lift-and-storage-unit) and bought one of those. If you haven't seen one, it is a cradle that fits over the rails and allows you to drive the locomotive onto the lift and then lift it up, turn it around, and drive it off again. It's quite clever.

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the ads!**



2. Peco LocoLift in use on the layout.

It works well but sometimes bits of ballast or other scenic materials get in the way and it fails to make electrical contact. Overall, a good device but then I got thinking, what if I had something like this for every locomotive and it had solid sides and a top so that the locomotives can be stored in it?

### Enter the Twiddle

So I started tinkering around with designs and came up with what I have labelled as the “Twiddle.” That’s a cross between a Turntable and a Fiddle yard, with storage and display case functions thrown in as a bonus.



B. Ciccone

#### TWIDDLING AROUND

*Twiddle, verb :to rotate lightly or idly (from the Dictionary)*

*noun, cross between a Turntable and Fiddle Yard (my definition).*

My first problem was where to locate this device. It needed to be a spot with easy access. I originally thought it needed to be on a passing siding where the trains could drive right through it.

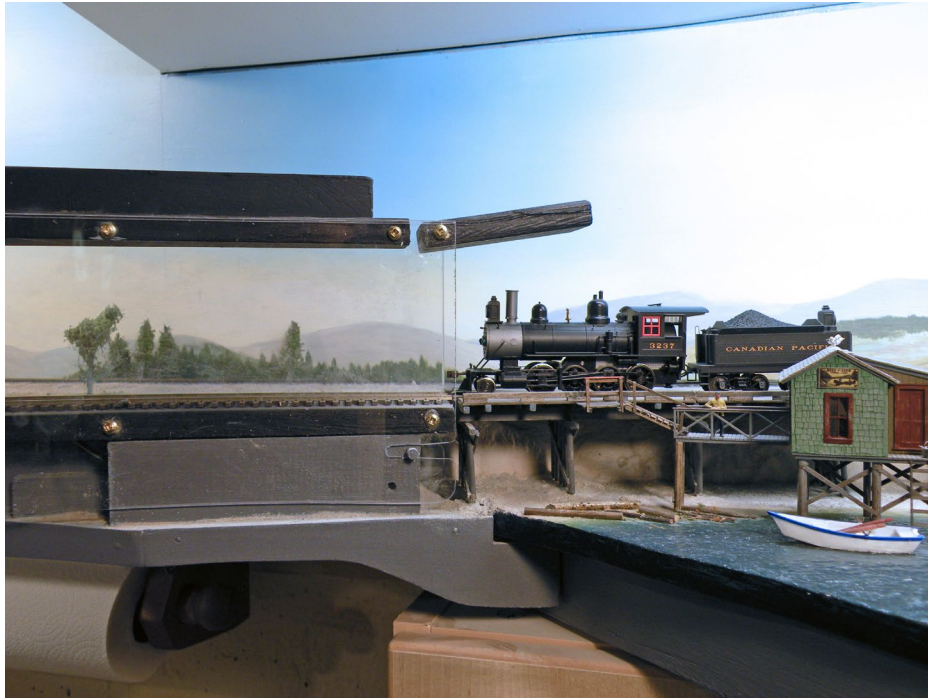
While a passing siding might work, upon further thought I only had one spot where this was going to work the very best: an unfinished track that ran to the edge of the layout.

By placing the device at the layout edge, I could easily move the Twiddle on and off the layout. And I could easily turn it around to send the locomotive running again off in the opposite direction.



## MORE CONVENIENT LOCO STORAGE | 5

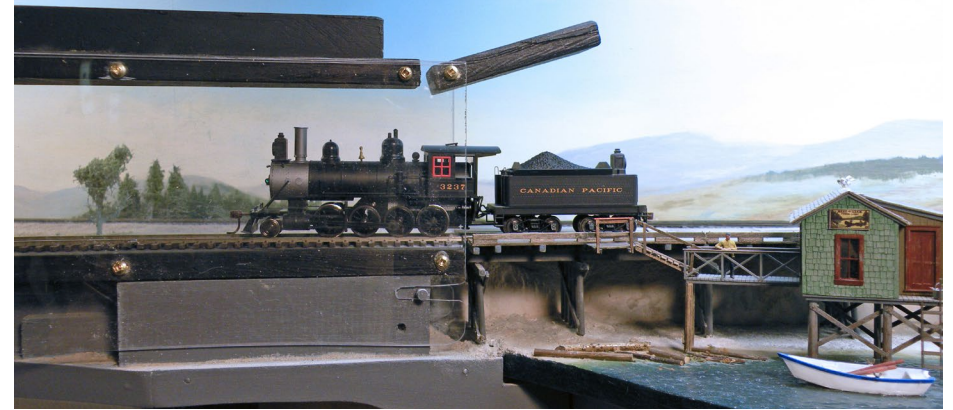
The following pictures and video show the Twiddle in operation:



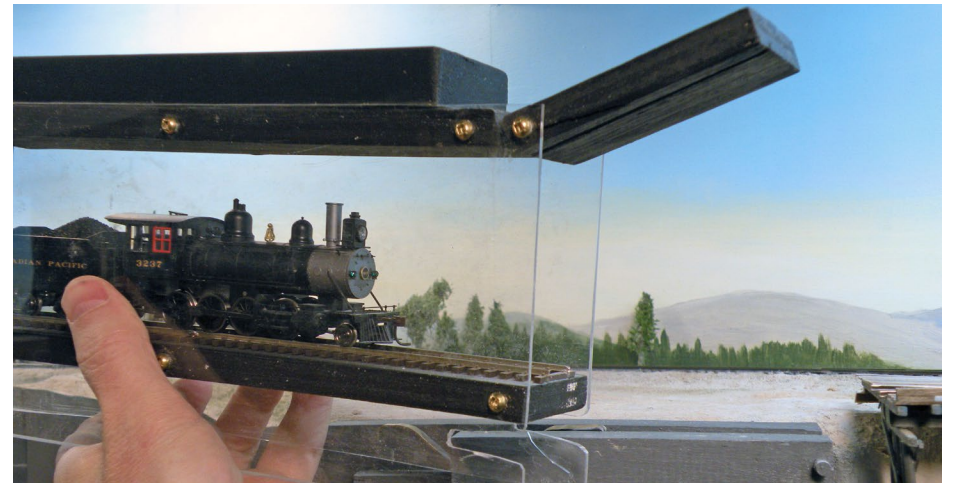
3. Here I have the Twiddle storage case in place with a locomotive about to run into it. The doors are critical and keep you from accidentally running the loco out the other end onto the floor. Only open the one door at a time – don't ask how I learned *that* ...



## MORE CONVENIENT LOCO STORAGE | 6



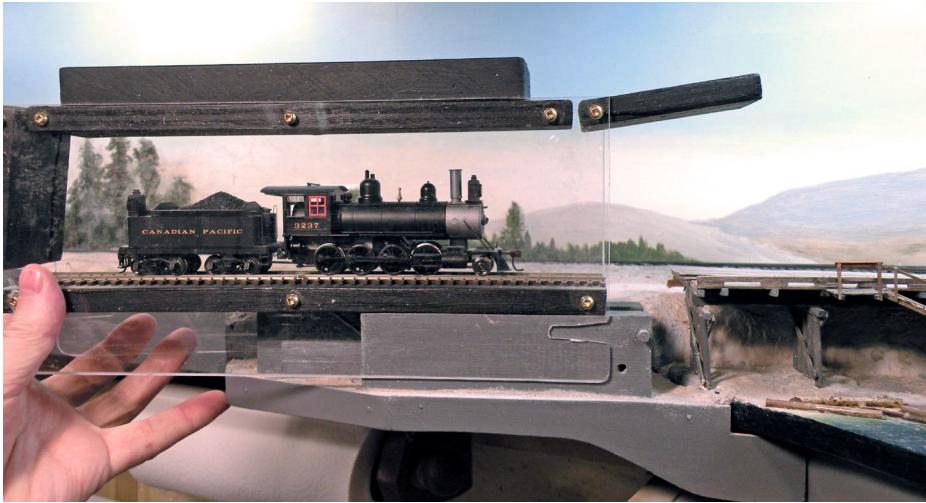
4. Here I am running the loco into the Twiddle case. If I like, I can close the door, pick up the Twiddle and turn it around.



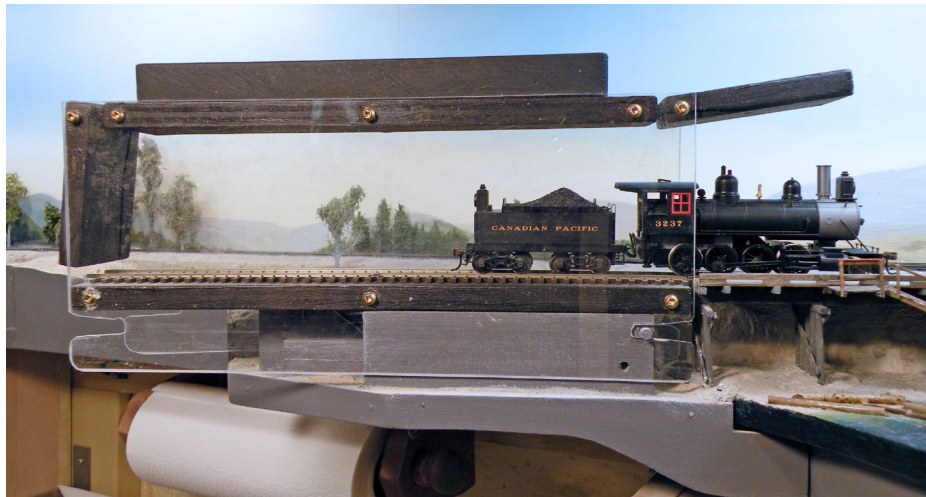
5. Oops, I said close the door! Otherwise the loco might slide out onto the floor. On the layout is a dowel pin that fits into the corresponding slot on the case, holding the case in place. This serves several functions: it prevents the case from tipping up, it aligns the tracks and it holds the case down so that it is making good electrical contact with the contact strips on the bottom.



## MORE CONVENIENT LOCO STORAGE | 7



6. Slide the case in place fitting the slot over the dowel pin and slide the case back up so the rails in the case meet up with the rails on the layout.



7. The locomotive has been turned around without touching it and without removing it from the rails, and it now runs out of the case back onto the layout.

## MORE CONVENIENT LOCO STORAGE | 8



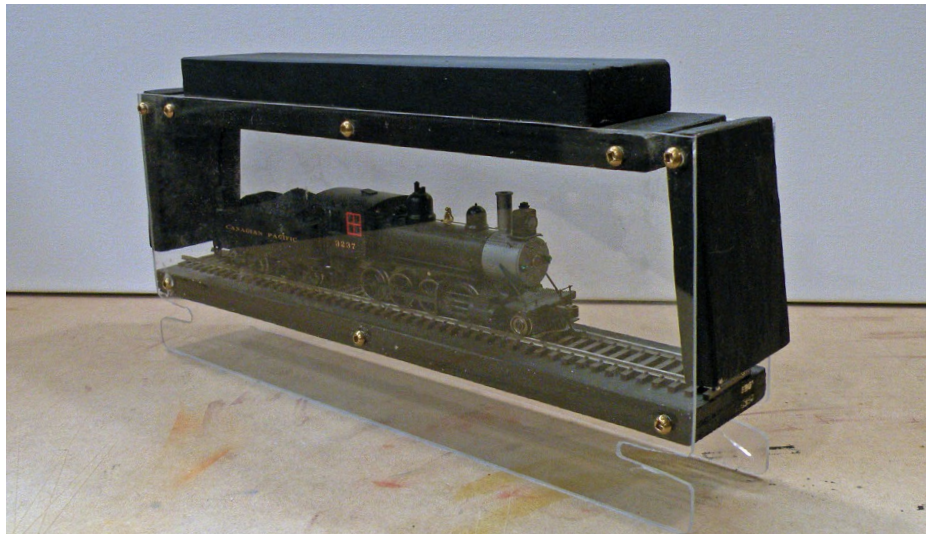
8. Here is the docking base showing the two blocks of wood I used and the rather crude electrical contacts. It's located at the end of a trestle that runs along the lake shore. The plan is to eventually build a station alongside this track, hence the boardwalk.



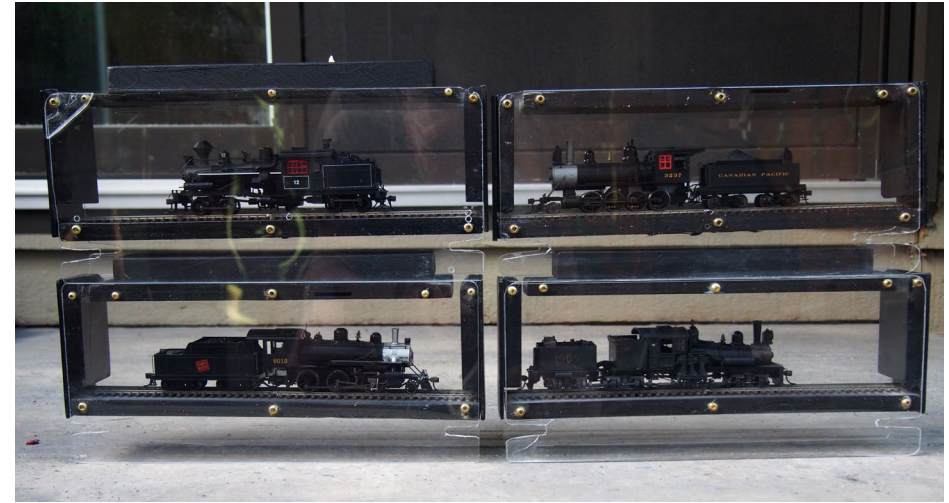




9. I put this dummy track cover over the docking base when not in use. It is unpowered just in case I forget and run too far onto it! This will include the station when I get it built.



10. The Twiddle case is great for storing the locomotive and keeping dust off it.



11. Adding a block of wood on top allows the cases to stack together for storage and display. You could place a strip of wood on a shelf and line up all your locomotives up for display, each in its own Twiddle case. It's also ready to be picked up and moved onto the layout at your whim, all with minimal effort!

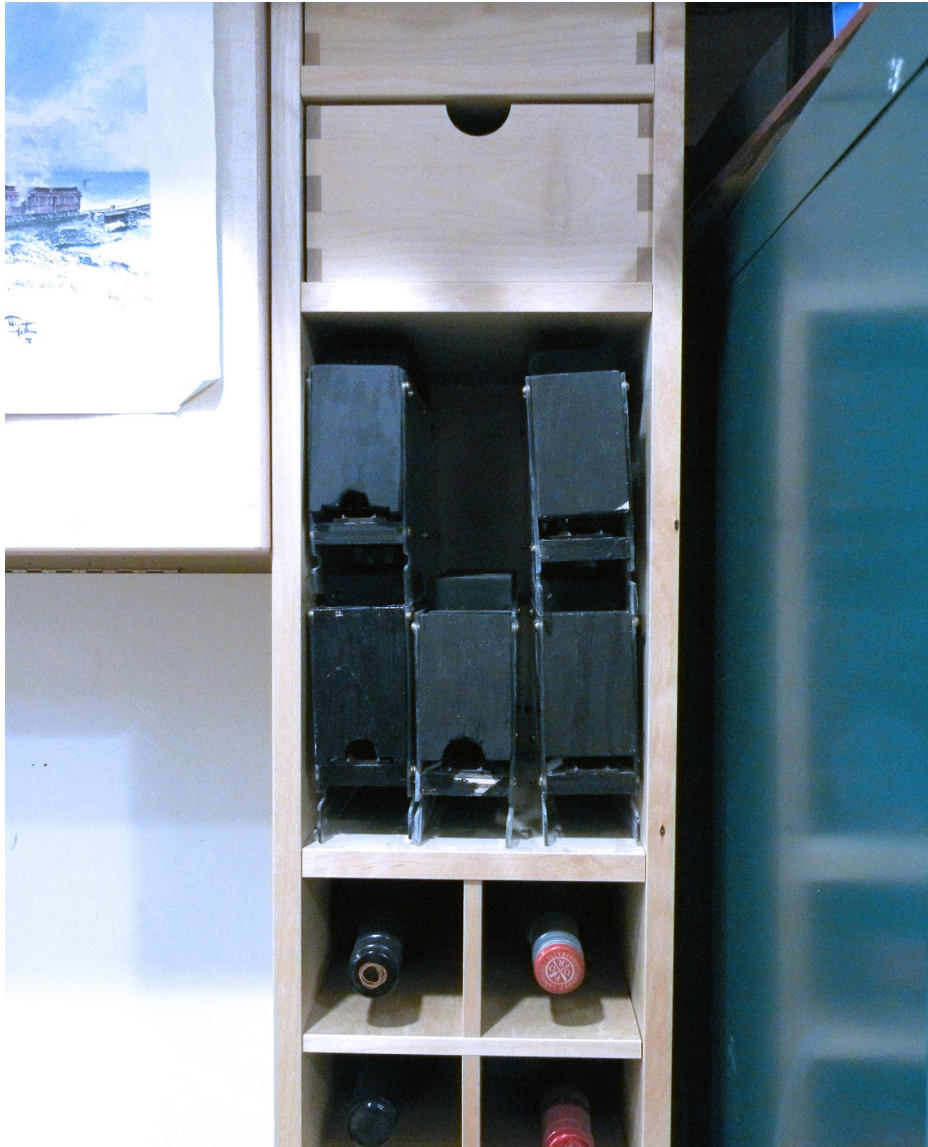
### Twiddle construction

My construction is not always the tidiest. I was experimenting while developing this system and didn't know what was going to work, so it evolved as I went along.

The clear acrylic sheet is expensive, so I continued to use pieces that I cut wrong or they cracked while cutting and drilling. If I knew then what I know now, I could make it much better looking, but I am mainly concerned with function and it does function well!

Most of the dimensions for the Twiddle are not critical. You can build it to suit your locomotives and scale. The important





12. I keep my Twiddle collection stored in this IKEA shelf complete with wine rack. Talk about convenience! Sometimes it is hard to decide whether to pull out the bottle of wine or the locomotive ...

requirement is that your locomotives fit inside the case. I would suggest using the NMRA clearance standards as your guide and making sure the cases fit snugly on the docking base.

The most important dimension is the distance from the top of the rails to the bottom of the slot for the dowel in the docking base, this dimension must match for the slot to perform its functions. I will give the dimensions I used, but you can use something else if the docking base and the case match.

I start with the docking base, and then make all the cases to match. I use two pieces of hardwood; I recommend birch, maple, or some other fine-grained hardwood. The hardwood will stand up to years of use without wear and still retain the critical dimensions.

I use two pieces and a small filler piece in between to hold the electrical contacts. The overall width of the three pieces layered together needs to match the width of your NMRA clearance gauge for your scale.

In my case, for HO scale, it was 2" total width. I use two pieces of  $\frac{3}{4}$ " birch for the outside pieces (1- $\frac{1}{2}$ " total) and then cut down another piece to  $\frac{1}{2}$ " thickness for the center, which gives the 2" total width.

I mount the electrical contacts on this center piece [13]. Note that I offset the ends of my two side pieces because I need to orient the docking base at an angle to the benchwork.

For the electrical contacts I use heavy brass strips bent to shape so that they contact the bottom of the cases.

I attach the contacts to the center block and drill holes for wires to drop down and connect to the DCC bus wires below the layout. With DCC you don't have to worry about the



polarity; the engine will run forward regardless. If you are running DC, flipping the case around will reverse the wiring, which is just what you want, so you don't need to worry about polarity in that instance either.

As mentioned, there are only two critical dimensions: the width of the docking base (and matching your cases to that), and the positioning of the alignment dowel with the corresponding slot in the side of the cases.

In my build, I put a 3/8" hardwood dowel in the top corner, placing it 1/4" in from the end and 3/8" down from the top.

I made a mistake while drilling the hole for the dowel. I attempted to drill straight through the entire 2" thickness of the docking base at once. I thought I was being careful and had the drill aligned level, it deviated slightly when it came out the other side. This has proved to be a real pain in the butt, as the slot cut in each side of the case must to be custom cut to fit that side, with one side fractionally higher than the other.

You could use a steel or brass rod for the dowel, but I find hardwood easy to work with and haven't noticed any wear after years of use. I used the 3/8" dowel because that is what I had on hand. A larger size would work but I wouldn't want to go smaller unless you are in N scale. Even then I wouldn't go smaller than 1/4".

I mounted the docking base to a piece of plywood attached to the workbench. I left a gap of about 3/4" between the end of the docking base and the connecting approach track. This makes it easier to get the case lined up on the docking base before pushing it that last 3/4" to meet up with the approach track.



13. Closeup of the docking base with its electrical contacts. Crude, but it works!

## MORE CONVENIENT LOCO STORAGE | 15

As you push the case into place, the slot in the case sides matches up with the dowel and it slowly pulls the case and track inside into alignment with the approach track on the layout.

If you have built everything to match, the dowel will pull the case and track down into vertical alignment and the width of the docking base will force it into horizontal alignment. The electrical contacts will contact the connections on the bottom of the case and you will be able to simply run the locomotive out of the case and onto the layout – or vice versa!



14. All the pieces for two cases, a top, bottom and two end doors and acrylic sides plus various screws.

## MORE CONVENIENT LOCO STORAGE | 16

My approach track runs on a trestle, but this is not necessary and it suits the waterfront location on my layout. You could just as easily have regular roadbed come to the layout edge with a space for the Twiddle. It would be a good idea to allow a little overhang at the end of the roadbed so that you can nestle the case up tight without the edge hitting on any scenery.

For the cases I used clear 0.080" acrylic for the sides and ½" plywood or MDF for the tops, bottom and end doors.

The width of the case is the same as your docking base. For HO scale that's 2". The length can vary to suit your locomotives. Most of mine are 12" long but I have made some 15" for a diesel A/B set and shorter 8" and 6" ones for some short steamers.

You could make your life easier by making them all a standard size, but where would be the challenge in that? If you make the cases much longer, then you should make your docking base longer as well to provide more support.

### Cutting acrylic sheet

Cutting the acrylic proved to be a bit of a problem.

The acrylic sheet instructions say to use the score and snap method. While this works, sometimes, I found that it didn't always snap off where it should. This meant wasting pieces of the acrylic sheet, and this stuff is expensive!

In the end, I found it can be cut on the table saw with a fine-toothed blade. You must cut slowly to prevent melting or burning the acrylic sheet.

Acrylic is prone to crack while working with it. I cracked some pieces when drilling holes, which is annoying since I had

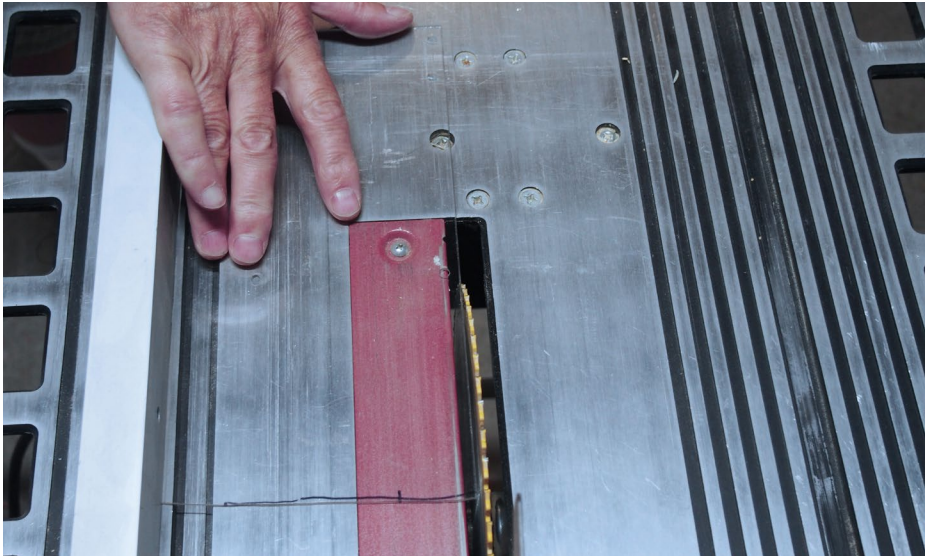


worked out the size of the acrylic sheet to give me just enough for a half dozen cases.

I was able to use scraps to repair them, but those cases don't look as nice as the others. I don't know if thicker acrylic would be less prone to cracking. It was twice the price, so I haven't tried it.

The slot in the sides must be cut carefully, as it is a critical dimension. I used a Rockwell Blade Runner, which is basically an upside-down jig saw, to cut the slots. I then finished the slots with a Dremel tool with a reinforced fiberglass cut-off blade, and files.

Taper the opening of the slot so that the case slowly gets pulled into alignment as you slide it into place. I also rounded all the corners of the acrylic with the Dremel tool.



15. Blade guard removed for clarity. I would also normally leave the plastic covering on the acrylic sheet while working with it.

The case dimensions are shown in the drawing at the end of this article. I painted all the wood pieces black, but the next ones I build will use my railway's colors! I don't know why I didn't think of that the first time.

### Cutting acrylic sheet

For the electrical contacts on the bottom of the case you could use strips of brass or copper tape. In my case, I did nothing fancy – I simply stripped the insulation off some wire and ran it along the bottom, attaching it with brass flat head screws. I put a few zigs and zags in it so that some part of it should contact the brass strips in the base.

Because I use cases of different lengths and they are all longer than my angled docking base, I didn't use a consistent position for these wires and screws. These could probably be made tidier by working out exactly where the contacts should be, but no one can see them and they need to work in both directions. I soldered these wires to the rails on a length of flex track inside the case. The main thing is, they work!

### Final assembly

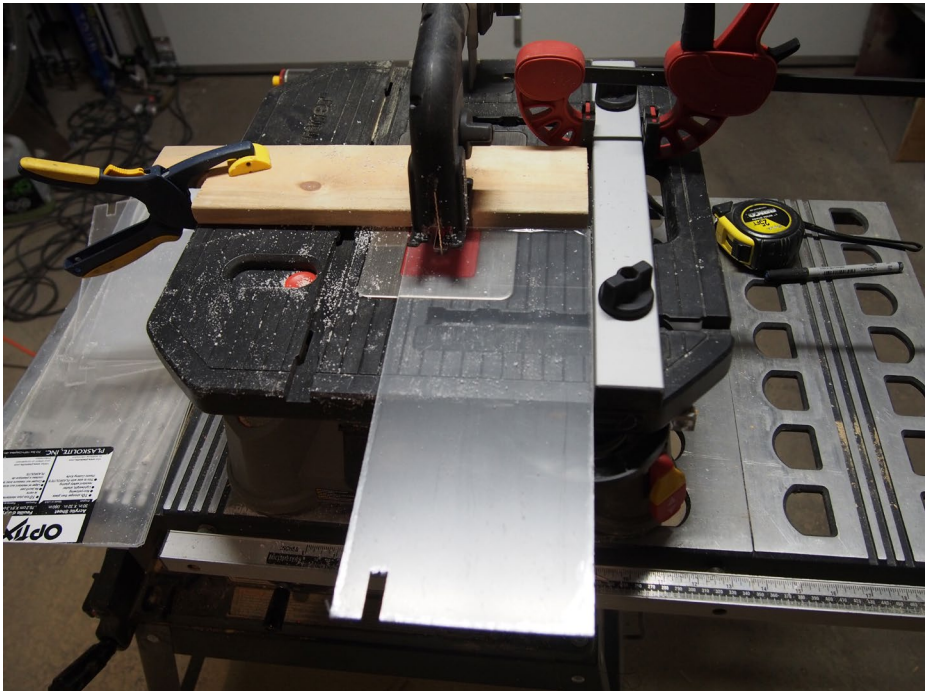
I wanted final assembly to be quick and easy, so I prepped everything ahead of time, drilled for the brass screws, and soldered the wires to the track.

I used either "No More Nails" adhesive or simple white glue to hold down the track. If I leave the top off the case, I can then quickly place the case on the docking base before the glue holding the track dries and then ensure that the track lines up with the approach track. I placed a full-sized railway spike on

the track for weight to hold it in position, then pulled the case off the docking base and clamped the track into position.

I then flipped the case around and did the same thing with the other end, then clamped that end and left it to dry with the weight still on the track.

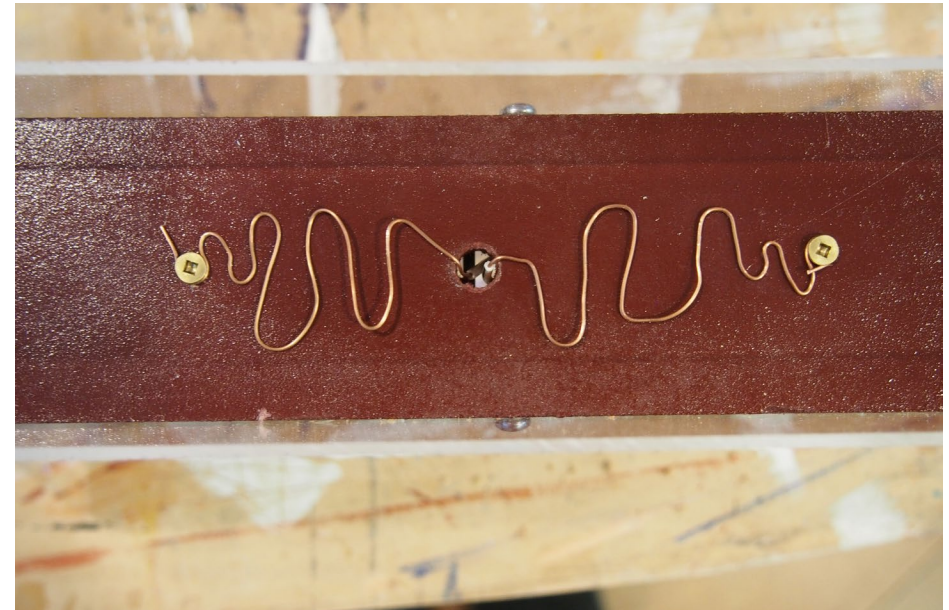
Once this dried, I could attach the end doors. These need to be slightly shorter than the opening so that they don't hit the rails. I improved the doors later by gluing on a piece of 1/8" hardboard slightly wider than the opening's width. This serves as a handle for opening the doors and makes it easy to close them up tight.



16. Cutting the slot in the sides.

I also put together a video to demonstrate using one of the Twiddle cases (see following video).

I later put a second block of wood on the top of many of the cases, allowing them to be stacked together [11]. I store most of my Twiddle cases in an Ikea wine rack [12], but you could build a nice display shelf with a block of matching width wood to hold the Twiddles. ☒

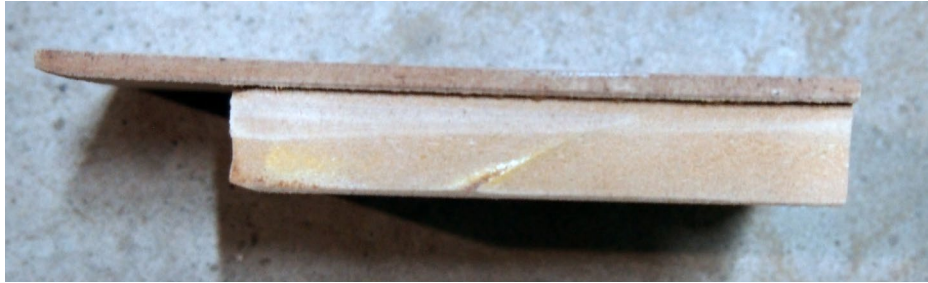


17. Showing the bare wires that make electrical contact. These are soldered to a piece of track, which needs to be put into place first. They are deliberately made wiggly to increase the chance of the wire making electrical contact with the base.



## MORE CONVENIENT LOCO STORAGE | 21

**Epilogue:** *I was congratulating myself on my brilliance for coming up with this idea. Then I found out that I am not the first person to think of this! The following website in Germany sells a very similar system, much fancier than mine, and long enough to take an entire train. It is also much more expensive than my version, but if you don't want to build your own, you could consider ordering this system: [shop.train-safe.de/en/home](http://shop.train-safe.de/en/home).*



18. The end door construction. A piece of 1/8" hardboard, cut over-sized so it overlaps the sides. This provides a stop for the doors and a handle for opening them.



19. Aligning the track before the glue dries. I pulled the case off and clamped the track down once I had it lined up.

## MORE CONVENIENT LOCO STORAGE | 22



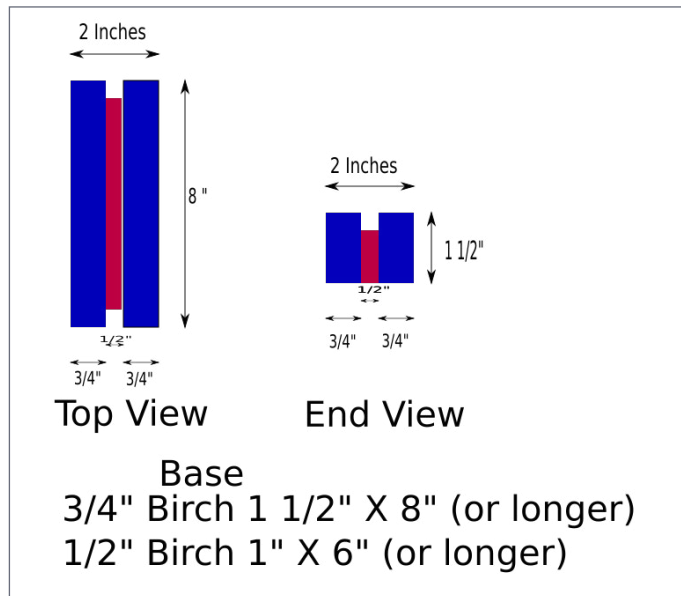
20. Video: Demonstration of using a Twiddle loco case.

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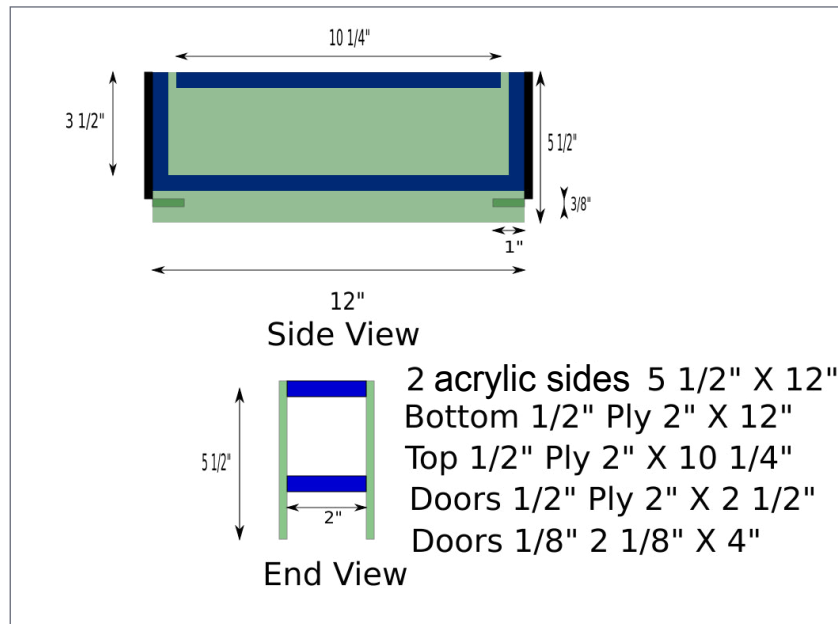
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21. Suggested dimensions for the docking base.



22. Suggested dimensions for the Twiddle case.

## PARTS LIST FOR ONE TWIDDLE CASE

- 2 acrylic sides 12" X 5 1/2"
- Bottom 1/2" plywood 2" X 12"
- Top 1/2" plywood 2" X 10 1/4" (shorter than the bottom to allow for the swing of the doors)
- Doors 1/2" plywood 2" X 3 1/2" + 1/8" hardboard 2 1/8" X 4"
- Brass screws, round head #4 X 5/8"
- 12" piece of flex track
- Wire
- Brass screws, flat head #4 X 3/8" ■



## BRENT CICCONE



Brent is retired from working as a production analyst with Shell Canada. He is currently the editor of the Calgary Model Railway Society's publication "The Order Board." Brent also belongs to the Bow Valley Model Railroad club.

Brent's other hobby interests including oil painting and he runs an art school in Calgary. He enjoys hiking and cross-country skiing in the mountains outside Calgary with his wife of 37 years. ■





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Model Railroad Hobbyist | Junel 2019 | #112

**JEFF SHULTZ: MULTI IS THE WORD WITH DIGIKEIJS ...**



1. The DR5000 comes out of the box ready for international usage.

**DIGIKEIJS IS A DUTCH COMPANY THAT APPEARS** to be working on the Holy Grail of DCC – the ability to use any manufacturer's accessories, like throttles, with their DCC command station. They're not quite all the way there – NCE is noticeably missing – but they have come closer than anyone else I've seen.



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The DR5000 Digicentral command station measures 7.25" long, including the screw eyelets, and 3.5" wide. It weighs only 6 ounces, so it can be mounted nearly anywhere.

Protocols built into the DR5000 include:

- Roco multiMaus Wi-Fi throttle protocol
- Lenz XpressNet
- Digitrax LocoNet – both throttle and booster
- S88n
- Roco R-Bus
- Roco B-Bus
- Lenz RS-Bus
- USB
- 100BaseT
- 802.11 b/g/n Wi-Fi.
- InfraRed Control

Both Loconet and XpressNet can be used over the USB and Wi-Fi/LAN. The Roco multiMaus works over the integrated Wi-Fi, which can also function as a wireless router.

The USB port can communicate with a computer, and is also used for firmware updates and as a virtual serial COM port, with configurable baud rates.

Further, the USB port can be configured to “appear” as if it’s one of several types of Digitrax command stations for use with JMRI WiThrottle, Decoder Pro, or Panel Pro.

The DR5000 also includes an integrated 3-amp booster and programming track output. The included 100V-260V power supply

can be configured for output voltages from 15V to 24V. The power supply also includes a 5V 1A USB port, so you can power another small device with it as well.

Digikeijs US importer, Iron Planet Hobbies [[www.ironplanethobbies.com](http://www.ironplanethobbies.com)] has several instructional videos on their YouTube channel: [www.youtube.com/channel/UCN7ByGL5Aw8fCOPy9D75S6A](http://www.youtube.com/channel/UCN7ByGL5Aw8fCOPy9D75S6A).

I also recommend checking out the DR5000 manual at: [support.digikeijs.com/display/DS/DR5000-ADJ](http://support.digikeijs.com/display/DS/DR5000-ADJ).

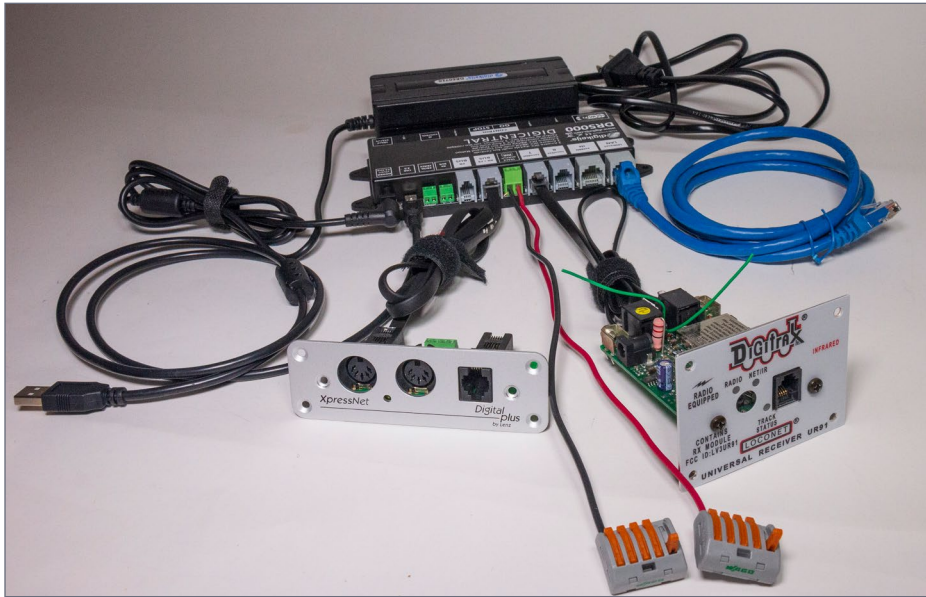
Just find the newest version in your preferred language and download it. You can also download the latest firmware from there.

One note of reassurance: Even though the screenshots in the manual are frequently of the Dutch or German version, the DR5000 program’s screens are all in English when that language is selected.



2. All the ports on the DR5000 are clearly marked on the top.





3. With multiple manufacturers' hardware connected to the DR5000, as well as the power and networking connections, the space in back needs to be well organized.

While the DR5000 can be used without a computer once configured, it's helpful to have the command station echoed to a handy laptop over a LAN connection.

The DR5000 configuration program mirrors the appearance of the command station and allows configuring the individual ports by clicking on them. You can also turn the track power on and off independently of the command station power. The individual ports have plenty of configuration options, but most of them work fine with the factory-default configuration.

Getting the Digikeijs running isn't very difficult – connect the track wires, connect the USB to a computer, and plug in the

power and fire up the Digikeijs software. There was a firmware update for my system, so I applied it first.

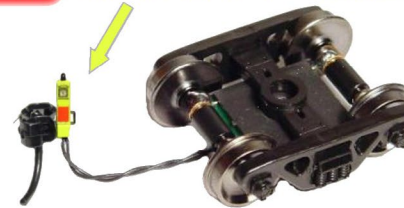
Since I didn't have one of the Z21 wireless throttles – and didn't discover the Z21 Android app for a while – I started by having the DR5000 identify itself as a Digitrax command station over USB and running JMRI WiThrottle on the connected computer.

Within minutes I had Engine Driver on my phone and my ProtoThrottle running locomotives. I later added a Digitrax LNWI to the Loconet port on the command station and used it instead of JMRI. I also added a Lenz LA152 XpressNet panel to the XpressNet port and connected a ProtoThrottle Lenz/NCE receiver to it, using my ProtoThrottle through it. I was also able to use a tethered Digitrax throttle with it.

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In an attempt to both stress-test the system, as well as demonstrate its flexibility, I recorded myself running five separate locomotives or consists simultaneously with four different DCC throttle inputs (Z21, Lenz, Digitrax LNWI, Digitrax tethered), and a separate RailPro-equipped locomotive that was just using the command station for power. The video can be seen at [www.youtube.be/3tYQ2dKRL5c](http://www.youtube.be/3tYQ2dKRL5c).

In a club or operating crew, there may be members who have their own favorite throttles they use on their own layouts – here is a system that can accommodate many of these different throttles.

With the addition of a Digitrax LNWI or a computer running the JMRI WiThrottle, the DR5000 supports two of the most popular Wi-Fi throttle standards in use.

If starting fresh, or faced with a failing current DCC system, the DR5000 should be given serious consideration as a layout DCC system. ☒

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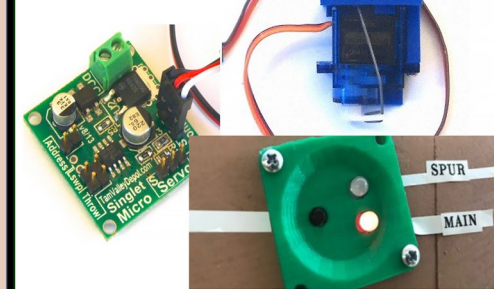
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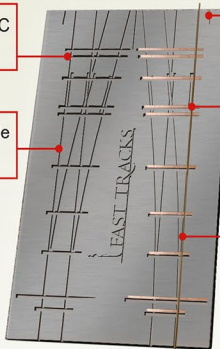


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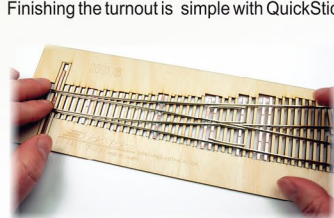


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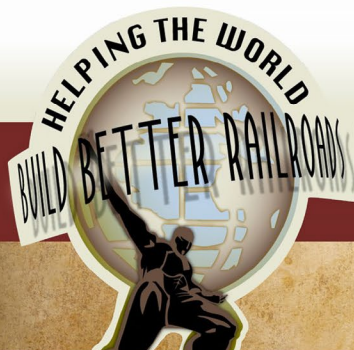
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# SAVVY MODELER *Online*



Model Railroad Hobbyist | June 2019



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## Steam loco painting setup

For *Savvy Modeler Online* this time, take a look at this clever steam locomotive paint stand by YouTube modeler **railfanreading**. Once you see how it works in the video, the light bulbs will come on for sure! However for this to work, the tender and/or the leading/trailing wheels need to pick up power from both rails. ■



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# You're the kid.



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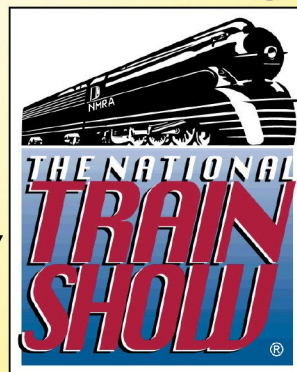
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# JUNE NEWS column



Model Railroad Hobbyist | June 2019 | #112

**RICHARD BALE** and  
**JEFF SHULTZ** report the  
latest hobby industry news

★★★★★  
**RATE THIS ARTICLE**

## INDUSTRY NEWS

Tennessee-based **ScaleTrains.com** is interviewing candidates for the position of national marketing manager. The individual will be responsible for advertising programs, website content, trade shows, social media, and national marketing campaigns utilizing e-mail newsletters, printed materials, press releases, and so on. Qualified individuals are invited to e-mail a resume with a cover letter to [Careers@ScaleTrains.com](mailto:Careers@ScaleTrains.com) ...

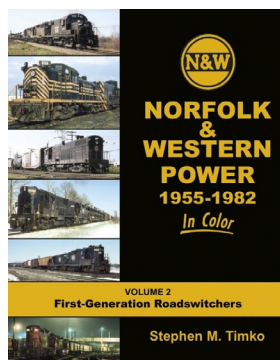
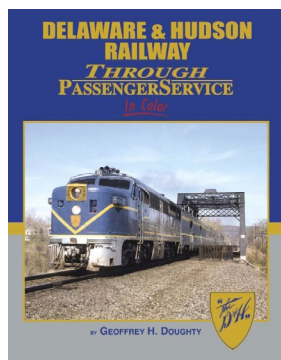
**Soundtraxx** has several job openings, including a systems engineer responsible for the design, development, testing and documentation of new software, firmware, and hardware systems for SoundTraxx products. A position is also open for a product specialist responsible for supporting the sales process by educating both the retailer and the consumer about all SoundTraxx products. Soundtraxx is also accepting

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applications for an experienced assembly position. For additional information go to [www.soundtraxx.com/jobs.php](http://www.soundtraxx.com/jobs.php).

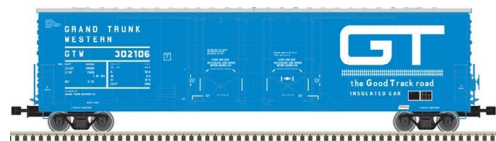
## NEW PRODUCTS FOR ALL SCALES



New hardcover books coming from **Morning Sun** this month include *Delaware & Hudson Railway Through Passenger Service*, by Geoffrey H. Doughty; and *Norfolk & Western Power 1955-*

*1982 Volume 2*, by Stephen M. Timko. For additional information contact a dealer or visit [morningsunbooks.com](http://morningsunbooks.com).

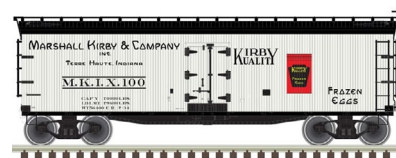
## O SCALE PRODUCT NEWS



**Atlas O** plans to release two new Master Series freight cars during the 4th quarter of this year. The O

scale ready-to-run models include a 53-foot Evans steel boxcar with double plug doors. Road names will be Grand Trunk Western, Chicago North Western, BC Rail, Weyerhaeuser, and Union Pacific.

Decorating schemes on Atlas O's 40-foot wood refrigerator car coming late this year include Producers Produce, ART Ice Service, Milwaukee Road (ice service), Missouri-Kansas-Texas,



Rath's Black Hawk Bacon, and Marshall Kirby Frozen Eggs. Features on the reefer car include opening doors and working roof hatches. The ladders, grab irons, coupler lift bars, diecast metal stirrups, door hinges and hardware are all separately applied to the model. The trucks will be 40-ton Bettendorf-style with diecast frames and metal wheels.



A new operating oil pump available from Atlas O can be viewed at <https://www.youtube.com/watch?v=O1cwhFQyIH0>. For additional information contact a dealer or visit [atlaso.com](http://atlaso.com).



**Berkshires Valley Models** is selling a kit for an O scale photography wagon. The kit is comprised of laser-cut wood parts and cast white metal details. Decals, a box camera, and a tripod are included. The

horse and driver are sold separately. For information visit [berkshiresvalleymodels.com](http://berkshiresvalleymodels.com).



**Lambert Locomotive Works** is selling O scale arc-style headlights. The 3D printed lights are available with (left) and without

number boards. Each headlight comes with a clear lens and a 3mm white LED. The headlights are flat on the bottom which simplifies gluing them in place. For additional information visit [lambertlocomotiveworks.com](http://lambertlocomotiveworks.com).

## HO SCALE PRODUCT NEWS



New HO scale kits available now from **Accurail** include this 36-foot Denver & Rio Grande double-sheathed wood boxcar. The model is based on a prototype built in June 1909 by American Car & Foundry.



ACF also built the prototype of this Burlington Northern triple-bay covered hopper car. Accurail's HO scale kit includes roller-bearing trucks.

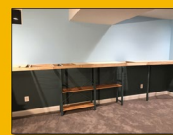


Accurail's kit for this HO scale 40-foot Northern Refrigerator Car assigned to the Banana Distributing Co. of New Orleans, is based

on a wood prototype Pullman-Standard built at its Detroit, Michigan shops in the summer of 1929.

Additional HO kits just released by Accurail include an SCL triple-bay covered hopper, a 50-foot Monon insulated steel boxcar with plug doors, and a special three-car set of 36-foot Fowler boxcars decorated for Canadian National. All Accurail HO scale kits come

with Accurate knuckle couplers and appropriate trucks. For additional information contact a dealer or visit [accurail.com](http://accurail.com).



**IKEA LAYOUT BENCHWORK**  
Marty McGuirk relates how his pursuit of better benchwork lead to IKEA.

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Jason Miller shows step-by-step how starting with a single module ultimately lead to an entire layout.

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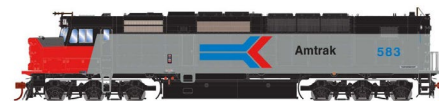
In **MRH RUNNING EXTRA**



R. Bale

### EMD SDP40F AND SDP40-2 DIESEL LOCOMOTIVES

Shortly after taking over the operation of America's passenger trains in 1971, Amtrak worked with GM's ElectroMotive Division to develop a new passenger locomotive. The result was the SDP40F. The 150 SDP40Fs EMD built in 1973-1974 became the backbone of Amtrak's long-distance passenger fleet heading trains from San Diego to Washington DC and from Seattle to Miami. In 1984, Santa Fe acquired 18 SDP40Fs and rebuilt them for freight service. Their new designation was SDF40-2. Although most of the changes were internal, spotting features for the Dash 2 freight locomotives include notching the front nose to improve boarding access and the addition of a front platform and steps. The original short rear platform was retained.



**Athearn** plans to introduce a Genesis2 EMD

SDP40F diesel locomotive in April of 2010. The HO scale model will be available in Amtrak's Phase I paint scheme from 1972 (above) and the Phase III scheme introduced in 1975 (below).





Identifying details of Amtrak's SDP40F passenger locomotive include a flat nose, no front platform or steps, a steam line access door, and a snowplow pilot.

Spotting features of the rebuilt Santa Fe SDF40-2 units include a front platform with handrails, front steps, a modified nose, and an air conditioner on the cab roof.



The air conditioner has been removed on the patched BNSF Primed for Grime unit but all other features are the same as the ATSF SDF40-2 rebuilds.



The Maersk Sealand paint scheme on SDF40-2 No. 6976 commemorates the opening of the world's largest container terminal in Los Angeles in 2002. The locomotive was loaned to Maersk for promotional events but retained BNSF reporting marks and road number. Visible details are the same as the ATSF units. Athearn's SDF40F and SDF40-2 locomotives will be available for DC operation and for DCC operation with factory installed decoder and SoundTraxx Tsunami2 with twin 28mm speakers.



Athearn's April 2020 production schedule includes a Trinity triple-bay covered hopper. Features of the Genesis series model include etched roof walk and end platforms, separately applied end cages, wire brake plumbing, air hoses, uncoupling bars, and 100-ton trucks with 36-inch machined metal wheelsets with rotating bearing caps. In addition to the BNSF Frisco Heritage scheme shown above, road names will be GACX Potash, GACX Lease, Norfolk Southern, Union Pacific/CMO, and FXE Ferromex.

Ready-to-Roll models in Athearn's April 2020 release include this 40-foot modernized boxcar. The models will be available in two 3-packs for a total of six unique road numbers.



The model will be available decorated for Illinois Central, British Columbia Railway, CP Rail,

Esquimalt & Nanaimo, Union Pacific, Pickens Railroad, Northern Pacific, and Louisville, New Albany & Corydon.



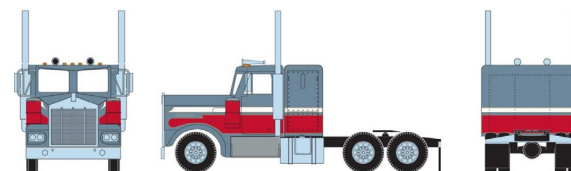
Additional freight cars in Athearn's April 2020 release include a 52-foot mill

gondola. Road names on the Ready-to-Roll HO scale model will be RailGon, BNSF, Oregon Steel Mills, Transportación Ferroviaria Mexicana, Gondola Connection, RJ Corman, and Herzog.



Athearn plans to release a Kenworth semi-truck with a sleeper in six decorating schemes. Railroad

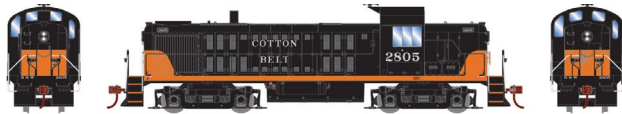
related names on the HO scale vehicle will be Burlington Northern, Canadian National, and Union Pacific.



Color combinations without lettering include orange and black, green and gold, and blue and red.

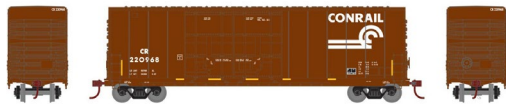
Features include rubber tires, clear window glazing, and molded cab interior with separately applied steering wheel.

**Roundhouse** brand models coming from Athearn next April include an Alco RS-3 diesel road switcher. Features on the HO scale model include metal grab irons, fine scale handrails, see-through etched metal radiator fan, LED lighting, and DCC-ready Quick Plug technology with a 21-pin NEM plug.



Road names will be Spokane, Portland & Seattle; Chicago & North Western,

Central Railroad of New Jersey, Delaware & Hudson, Milwaukee Road, Rock Island, Providence & Worcester, and Cotton Belt in the road's orange and black Halloween scheme.



Completing Athearn's April 2020 product release is a Roundhouse 59-foot high-

cube boxcar with double plug doors. Road names include Santa Fe, Union Pacific, Conrail, Norfolk & Western, Penn Central, Southern Pacific-Santa Fe, and three different Western Pacific schemes. For additional information on Athearn and Roundhouse brand products contact a dealer or visit [athearn.com](http://athearn.com).

.....

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R. Bale

## GE U23B LOCOMOTIVE

During its 10-year production from 1968 through 1977, General Electric's U23B diesel locomotive competed directly against EMD's GP38 and GP38-2. A total of 481 units of the intermediate-sized four-axle road switcher were built, making the U23B, at that time, the second best-selling GE locomotive. Primary spotting features of the U23B are the stepped-out radiator end section and two sets of three tall access doors near the center of the long hood. GE sold the U23B with various truck side frames including AAR-style trucks, GE's own four-axle FB2 trucks, and Blomberg trucks refurbished from EMD trade-in locomotives.



**Atlas** will release its Master series GE U23B during the 4th quarter of this year. Details on the

HO scale model include separate windshield wipers, metal grab irons, uncoupling levers, multiple-unit hoses, trainline hoses, fine scale handrails, drop steps, cab interior with crew, and directional lighting with golden-white LEDs. The model will be fitted with a snow plow pilot when correct for the prototype road being modeled.



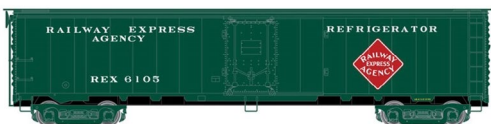
Road names will be Southern Railway, Conrail, Missouri Pacific, Lehigh Valley, Delaware

& Hudson, C&O Chessie System, and Santa Fe. Atlas Silver series DC models will be DCC-ready with a 21-pin socket for an aftermarket decoder. Gold series models will have a factory-installed DCC decoder.

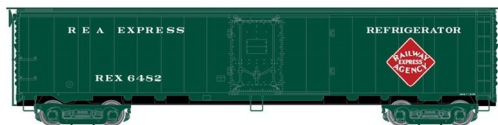




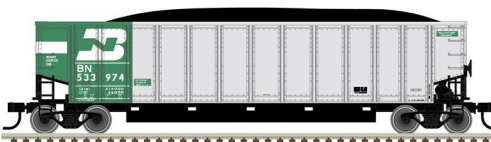
Atlas' 4th quarter production includes a Master series HO scale Railway Express Agency express refrigerator car. Road names will be REA (as delivered, above), REA (early 1950s, middle photo), and REA (early 1960s bottom photo). Additional road names include US Department of Transportation, Seaboard Coast Line, and Santa Fe REX.



Designed for front-end service, express reefers were equipped with high-speed trucks, and steam, air, and trainline hoses for consisting with passenger equipment. Collapsible ice bunkers allowed the cars to carry refrigerated lading as well as LCL parcel loads.



The prototype REA cars were built by ACF with welded steel sides, 3/3 Improved Dreadnaught ends, and a distinctive arched roof.



Also coming from Atlas in the final quarter of 2019 is a run of aluminum coal gondolas. The painted end indicates the presence of a rotary coupler for rotary unloading. In addition to the Burlington Northern car shown, road names on this release of Atlas's Trainman series model will be Canadian National, Reading Northern, Norfolk Southern, EGSX, and CSX.

Completing Atlas' new HO scale product releases for the 4th quarter is a Master series 45-foot container with corrugated

sides. Carrier names will be P&O Nedlloyd, Safmarine, ONE-Ocean Network Express, NYK



Line, Triton, Sea Castle, Maersk, and Matson. Two 3-packs will be available for each carrier name for a total of six unique numbers. For additional information on Atlas products contact a dealer or visit [atlasrr.com](http://atlasrr.com).



Photo courtesy  
Siemens Mobility, Inc.

**Bachmann** is developing an HO scale Charger SC-44 passenger locomotive. Delivery is planned for 2020. The HO scale ready-to-run model is based on the state-of-the-art prototype currently being manufactured by Siemens Mobility. Bachmann also plans to offer a single-level mainline passenger car to compliment the SC-44.



Bachmann has also announced plans to produce an HO scale model of Siemens Mobility's S70 low-floor light rail vehicle. The ultra-modern S70 street car is currently in use in Houston TX, San Diego CA, Charlotte NC, Portland OR, Salt Lake City UT, Atlanta GA, Seattle WA, and Orange County, CA. Siemens builds the full-size S70s in Florin, CA, a suburb of Sacramento. For additional information contact a dealer or visit [bachmanntrains.com](http://bachmanntrains.com).



**Bowser Trains** is taking reservations for three styles of HO scale ready-to-run PRR way cars. Bowser's HO scale version of the Class N5 steel caboose, originally

introduced in 1914, will be available in the Pennsylvania schemes of early lettering with black roof (above), PRR early lettering with train phone antenna, PRR early lettering with brown roof, plain Keystone, Keystone with orange body, Keystone with yellow cupola, Shadow Keystone Lake Region, Shadow Keystone Railway Express Agency, and Shadow Keystone Western Region with antenna.



with windows blocked.



Bowser is also taking reservations for a circa-1942 class N5C steel caboose. Features on the HO scale ready-to-run model include separate grab irons, knuckle couplers, and appropriate trucks with metal wheelsets. The N-5C cabooses will be available decorated for Conrail, Conrail brown body designated for Pennsylvania Power & Light coal service, Penn Central brown body designated for PP&L coal service, and Penn Central.



Pennsylvania Railroad decorating schemes on the N5C cabooses include: PRR early lettering NY Zone, PRR early lettering Pittsburgh Region, PRR early Western Region with antenna, PRR Keystone orange body with antenna, PRR Shadow Keystone with yellow cupola and antenna, PRR Shadow Keystone Buckeye Region, and PRR Shadow Keystone Northern Region.

Non-PRR schemes on Bowser's class N5 cabooses include B&M Minute Man, Conrail, Conrail MOW, Penn Central, Pennsylvania-Reading Seashore Lines, and Reading & Northern

Bowser is also taking reservations for a circa-1942 class N5C steel caboose. Features on the HO scale ready-to-run model include separate grab irons, knuckle couplers, and appropriate trucks with metal

Pennsylvania Railroad decorating schemes on the N5C cabooses include: PRR early lettering NY Zone, PRR early lettering Pittsburgh Region, PRR early Western Region with antenna, PRR Keystone orange



The third PRR caboose coming from Bowser is a class N8 steel car. Features of the HO scale ready-to-run model include window glass, separate curved grab railing, metal wheels, and knuckle couplers. Road names will be ICG, Conrail (blue), and Penn Central.



Pennsylvania Railroad schemes on the 1950-built class N8 caboose include Circle Keystone Eastern Region with antenna, Circle Keystone Chesapeake Region with antenna (above), Circle Keystone Eastern Region with antenna, plain Keystone with orange body and antenna, plain Keystone with yellow cupola and antenna, Shadow Keystone Lake Region with antenna, Shadow Keystone Pittsburgh Region with antenna, Shadow Keystone Pittsburgh Region with yellow cupola and antenna, and Shadow Keystone.



Reservations are also being accepted by Bowser for a 70-ton 14-panel triple-bay coal hopper car. In addition to Pittsburgh & Shawmut scheme shown, road names will be Chessie WM, Conrail, Delaware & Hudson, Detroit & Mackinac, Durham & Southern, Great Northern, Montour, Penn Central, Santa Fe, and C&EI. The ready-to-run hopper cars will come with knuckle couplers and 70-ton AAR trucks.



All of the Bowser models mentioned in this report are scheduled to be released in April 2020. For additional information contact a dealer or visit [bowser-trains.com](http://bowser-trains.com).





**Broadway Limited Imports** has released to dealers four versions of Pennsylvania Railroad's famous K4 4-6-2 steam locomotives. The HO scale model

is available as it appeared before World War II (above) and in its postwar configuration (below). Spotting features between the two periods include the location of the headlight, generator location, and the type and location of the marker lights.



The pilots also differ from the earlier version of the K4 having a fabricated strap type while the postwar locomotives has a cast steel pilot.



The prewar and postwar versions are also available with a long distance tender (left). Broadway Limited's PRR K4 steam locomotive comes

with the Paragon3 Sound & Operation System which includes Rolling Thunder sound and operation in both DC and DCC environments. For additional information contact a dealer or visit [broadway-limited.com](http://broadway-limited.com).



**Classic Metal Works** has three new 1:87 scale trucks including a 1941-46 Chevrolet bottle truck decorated for

Coca-Cola, O-So Grape and Whistle.



Also new is a 1955 Chevy box truck decorated for Planters Peanuts, Fresh Fish, and Turtle Wax.



Completing this release of 1:87 Mini Metals is a 1960 Ford pickup with a camper. Color schemes include white over yellow, white over turquoise, and white over blue. For additional information contact a dealer or visit [walthers.com](http://walthers.com).



**Division Point** has announced plans to produce five versions of Southern Pacific's 4-8-2 AC class Cab Forward steam locomotives. Fifteen

each of classes AC-7, AC-8, AC-10, AC-11, and AC-12 will be produced for a total of just 75 models. Three engine numbers will be available for each class, and all will be in the postwar paint scheme with the silver panel on the cab front. All the cab-forwards will come with SP's large 220-R-2 rectangular tender. The HO scale brass models will be crafted in Korea by Boo-Rim. Pricing has not been finalized but is expected to be in the low \$4,000 range. For additional information contact a dealer or visit [divisionpoint.com](http://divisionpoint.com).



**InterMountain Railway** has released HO scale 4650 cu. ft. triple-bay covered hopper cars. Road names

include Sclair Polyethylene, Burlington Northern, Southern Pacific, Sterling Salt, SSW-Cotton Belt, Norfolk Southern, Soo Line, French's, ATSF, and Wisconsin Central (CN). For additional information contact a dealer or visit [intermountain-railway.com](http://intermountain-railway.com).



New HO scale models from **Kadee** include this 40-foot Chesapeake & Ohio PS-1 boxcar. The ready-to-run model has PS ends and 8-foot Youngstown sliding doors. Kadee's

HO version is based on a prototype built in 1951 that was completely rebuilt in May of 1965.



Also new from Kadee is a 50-foot PS-1 boxcar decorated for Denver & Rio Grande Western. The prototype was built in 1957 with dual Youngstown sliding doors closing

a 15-foot opening. All Kadee ready-to-run models come with Kadee knuckle couplers and two-piece self-centering trucks. For more information contact a dealer or visit [kadee.com](http://kadee.com).

**Monashee Laser Engineering** has released an HO scale kit of a Canadian Pacific Railway #3 Section House with rear annex (108-HO). The kit includes laser-cut floors, walls, windows, and doors as well as accurate drop siding, trim, shingles and chimneys.



An optional interior detail kit will be available that includes interior walls, stairs, railings, doors, furniture and other details. The building's footprint, minus the eaves, is 3 x 4 inches. For more information visit [www.mona-sheelerengineering.ca](http://www.mona-sheelerengineering.ca).



New 1:87 vehicles announced by **Oxford Diecast** include a 1961 Chevrolet Impala convertible with a flaming Hot Rod paint job. A 1957 Chevy Nomad station wagon is also decorated with Hot Rod flames.



Oxford has released a pink Volkswagen Beetle and a 1965 Chevrolet Stepside Pickup truck. For additional information contact a dealer or visit [walthers.com](http://walthers.com).

**Rapido Trains** has added several new paint schemes to the second production run of its HO scale Alco/MLW FA-2 and FPA-2 diesel locomotives. The run includes both A and B units. The





deadline for orders is June 24, with delivery scheduled for late this year. In addition to new paint, this production run offers extra horns, a variety of grab iron arrangements, road-specific

nose ladders, spark arrestors, sunshades, and other parts designed to accurately represent the units at specific periods in their two decades of service. In addition to the PRR unit equipped with a Train Phone antenna shown, road names in this release include CP Rail's Multimark scheme, below.



FA-2 units decorated for Missouri Pacific and the Wabash Railroad are included in this run. Completing the list of available road names are Ann Arbor, Chicago &

North Western, Erie Lackawanna, Long Island Railroad, Louisville & Nashville, New York Central (cigar band), Penn Central (ex-NYC cigar band), Penn Central (black with red "P"), Burlington Northern, Western Maryland (speed lettering), and Spokane, Portland & Seattle.



Special features on Rapido's FA-2 and FPA-2 models include correct nose and roof

profiles achieved through 3D scanning of the prototype, operating number boards, and working headlights and classification lights. Features shared on both the A and B units include separate grab irons, and full underbody piping and conduit. Road specific details

appropriate to the prototype being modeled include dynamic brake housing, correct size fuel tanks, Farr or chicken wire etched-metal grilles, and oscillating Gyalite or red Mars emergency light.

The HO scale models will be available in a choice of DC/Silent (with a DCC-ready 21-pin connector for installation of an after-market decoder) or ESU LokSound DC/DCC/Sound with sounds recorded from a real Alco 244 prime mover. For additional details including reservation information contact a dealer or visit [rapido-trains.com](http://rapido-trains.com).



**Roomettes** has released three new laser-cut kits of building interiors. Art's Hobby Shop (above left) includes a store counter, model railroad display and product shelves for three rooms. This kit is designed to fit the interior of Woodland Scenics' Skip's Chicken & Ribs, or Margaret's Market. A kit for Borgo Auto Loans (above right) includes laser-cut material for three rooms. The kit will fit Woodland Scenics' Pam's Pet Shop, or Dad's Museum.

Roomettes' kit for Gem Warehouse provides laser-cut interiors for five industrial rooms. The kit will fit Walther's REA Transfer Building or Walther's Commissary Freight Transfer. Roomettes kits include a warm white LED for each room. The LED has a plug that



is compatible with the Woodland Scenics Just-Plug and NCE Corporation plugs. For additional information visit [room-etteslighting.com](http://room-etteslighting.com).

**ScaleTrains.com** has released its Rivet Counter series of GATC 4180 cu. ft. Airslide covered hoppers. Features include stainless steel photo-etched Apex or Morton roof walks depending on the practice of the prototype being modeled. The end bracing and other details vary per the prototype road name.



Road names include a BNSF patched car in buffer service, and Western Pacific. Both cars have Morton (round hole) roof walks.



Additional road names include CSXT Phase HC cars in beige repaint and a GACX car decorated in the Service Driven blue dot scheme, below. Both cars have Apex (slotted) etched metal roof walks.



The Katy car in Barringer red and the Norfolk & Western version are based on prototypes that had Apex roof walks. This production run will include undecorated models.



Additional features on ScaleTrains.com's Rivet Counter 4180 cu. ft. Airslide include metal grab irons and uncoupling levers, complete trainline piping, full brake details, and photo-etched end crossover platforms. The HO scale ready-to-run models ride on Barber S-2 100-ton trucks with rotating bearing caps, truck-mounted brake beams, and 36-inch machined metal wheelsets. For additional information visit [scaletrains.com](http://scaletrains.com).



**Tangent Scale Models** has introduced a new HO scale GATC 8,000 gallon welded general-service tank car. The ready-to-run model is based on a prototype built in 1952. Tangent's initial release is for three decorating schemes including a GATX Dow Chemical car from the 1964-era.



Additional decorating schemes include GATX Diamond Chemicals and UCLX Vulcan Materials Company.





Tangent's new model features see-through dome platform and running boards, separate air hoses, wire grab irons and coupler lift bars, Kadee couplers, and ASF

spring-plank trucks with 33-inch machined wheel sets. For additional information visit [tangentscalemodels.com](http://tangentscalemodels.com).



R. Bale

### GATC 1952 WELDED TANK CARS

The safety platforms installed around the dome of these GATC cars and the smooth appearance of their welded construction makes them look more modern than their 1952 build date would suggest. Many of these common non-insulated tank cars remained in service into the 1990s handling a range of products including corn syrup, caustic soda (sodium hydroxide), fatty acid, molasses, sodium chlorate, vinegar, carbon disulfide, fuel oil, and other petroleum products.

Walthers' next name-train project will be based on the Milwaukee Road's famous Twin Cities Hiawatha. The models will be available in orange and maroon as well as in the later yellow and gray paint scheme. Details on the eight different HO scale cars include tinted windows, and factory installed grab irons. In addition to factory printed names and/or numbers, Walthers will also offer the cars with decals that include a full set of names and numbers. A minimum 24-inch radius is recommended. For modelers operating on tighter curves, optional extended drawbars will be included with each car.



Availability is scheduled to begin in February 2020, with the release of this 85-foot 52-seat coach.



A 63-foot Railway Post Office car (top) and an 85-foot 26-seat tap lounge car (left) are set for release next May.



A June 2020 date has been set for the release of a 75-foot express car (left). Milwaukee Road's 85-foot skirted Super Dome, built by Pullman-Standard (lower left), will be released in July 2020.



August 2020 will see the arrival of this 85-foot 48-seat diner (upper left), followed in September by an 85-foot 30-seat parlor car (lower left).



The eight-car train set will be completed in October 2020 with the release of Milwaukee Road's distinctive 85-foot Skytop lounge-observation car.



The orange and maroon cars with black roofs are typical of 1952-1956 equipment in service until repaints began in 1955. Notable details include black trucks, folded steps, straight side sills, and original ends without lift rings. The yellow and gray cars match Union Pacific equipment after the Milwaukee Road assumed operation of Chicago-Omaha trains in late 1955. The scheme became the standard on Milwaukee equipment into the

1970s. The yellow and gray cars will have silver trucks with disc brakes, notched side sills (except the Super Dome, which was not modified) fixed car steps, end lift rings, and updated diaphragms (the Super Dome retained its originals).

A special limited-run deluxe edition of the train sets will be available with 160 Preiser passenger and crew figures, LED interior lighting installed, and appropriate names and numbers applied to each car. The deluxe edition will be limited to 300 sets with each car arriving the same month as the standard models.



To lead the Twin Cities Hiawatha Walthers will release EMD FP7A and F7B units appropriately decorated in both the orange and maroon (1950-1953) and the post-1955 yellow and gray livery. The diesel models will be available for DC operation and with ESU LokSound 5 Sound and DCC.

| Model         | Length | Width | Height | Weight | Power | Sound | DCC |
|---------------|--------|-------|--------|--------|-------|-------|-----|
| EMD FP7A      | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD F7B       | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD GP7       | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD GP9       | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD GP35      | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD GP40      | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD GP60      | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD GP70      | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD GP90      | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD70      | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD70ACe   | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD90      | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD90ACe   | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD120     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD120ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD160     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD160ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD180     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD180ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD200     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD200ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD220     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD220ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD240     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD240ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD260     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD260ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD280     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD280ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD300     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD300ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD320     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD320ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD340     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD340ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD360     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD360ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD380     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD380ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD400     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD400ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD420     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD420ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD440     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD440ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD460     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD460ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD480     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD480ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD500     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD500ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD520     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD520ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD540     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD540ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD560     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD560ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD580     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD580ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD600     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD600ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD620     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD620ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD640     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD640ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD660     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD660ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD680     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD680ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD700     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD700ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD720     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD720ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD740     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD740ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD760     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD760ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD780     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD780ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD800     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD800ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD820     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD820ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD840     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD840ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD860     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD860ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD880     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD880ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD900     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD900ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD920     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD920ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD940     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD940ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD960     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD960ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD980     | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD980ACe  | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD1000    | 100    | 10    | 10     | 100    | 10    | 10    | 10  |
| EMD SD1000ACe | 100    | 10    | 10     | 100    | 10    | 10    | 10  |

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R. Bale



E. Hansmann

### USRA BOXCARS

At the start of World War I, American railroads were in disarray. Against the background of a war emergency, the U.S. government nationalized the railroads in December 1917. Taking control

was the newly-established United States Railroad Administration (USRA). To modernize the fleet and relieve the shortage of usable freight cars, the USRA designed two common boxcars: a single-sheathed (SS) wood car and a double-sheathed (DS) wood car. Double-sheathed boxcars are fundamentally wooden boxes so all the support had to come from the underframe. To meet the need for a strong frame, a heavy fish belly design was specified. Single-sheathed cars are like truss bridges with metal side bracing acting as the main structural support. Since the steel side bracing in a Howe truss pattern supported much of the SS cars structure, a lighter, simpler frame was deemed suitable. There was no consensus among the railroad industry on which was a better design, so the USRA ordered both SS and DS boxcars. Between late 1917 and the end of USRA control in March 1920, over 100,000 USRA-designed freight cars were built. The majority of them were boxcars. Cars built subsequent to USRA control were strongly influenced by the wartime designs. Some USRA boxcars were rebuilt with steel sheathing in the 1930s. Due to different approaches to installing steel sheathing on the prototype cars the variations were numerous.

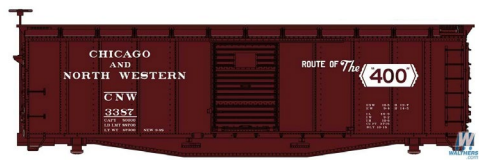
Walthers has announced plans to release a new Mainline series of HO scale freight cars. Although they do not adhere rigidly to USRA designs, the new Walthers models appear to be influenced by prototypes of the WWI-era. The ready-to-run models will be equipped with Andrews solid-bearing trucks with machined metal wheelsets. Walthers reports that undecorated models will be available for each body type in this new series.





Availability of the models begins next month with the release of 40-foot double-sheathed wood boxcars with a USRA-type fishbelly under-

frame. Features include 5-5-5 Murphy steel ends, a wood running board, and a horizontal brake wheel mounted on a vertical brake shaft. Road names will be Chicago, Burlington & Quincy; Santa Fe, Great Northern, Union Pacific, Wabash, and Toronto, Hamilton & Buffalo.



Also scheduled for release in July is a 40-foot USRA-style boxcar that has been rebuilt with steel sides. Road names will be Chicago & North

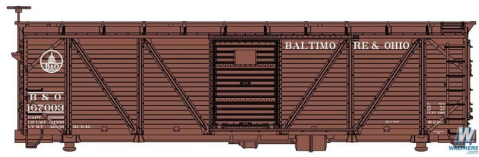
Western, Delaware, Lackawanna & Western; Detroit, Toledo & Ironton; Elgin, Joliet & Eastern; Grand Trunk Western, and St. Louis-San Francisco.



Walthers Mainline series 40-foot wood refrigerator cars with a steel fishbelly underframe are scheduled for release in August. The HO

scale ready-to-run models have double sheathed wood ends, ice hatches, and a wood running board and latitudinals.

Decorating schemes will include American Refrigerator Transit, Merchants Despatch, North Western Refrigerator Line, Pacific Fruit Express, SFRD Santa Fe, and SRLX-Swift Refrigerator Line.



The series will be completed with the September release of a 40-foot single sheathed wood boxcar with a straight steel underframe.

Although influenced by the USRA design, the external side

braces of the model are in a Pratt truss pattern rather than the Howe truss design of the USRA prototype. Road names for the HO scale ready-to-run model will be Baltimore & Ohio, Maine Central, Milwaukee Road, New York Central, Pennsylvania, and Southern Pacific. For additional information contact a dealer or visit [walthers.com](http://walthers.com).

## N SCALE PRODUCT NEWS



**Athearn** has scheduled the release of an N scale 52-foot mill

gondola next April. The injection-molded model will have body-mounted knuckle couplers and screw-mounted 100-ton roller-bearing trucks. In addition to RailGon, the ready-to-run model will be available decorated for BNSF, Oregon Steel Mills, Transportación Ferroviaria Mexicana, Gondola Connection, RJ Corman, and Herzog. For more information contact a dealer or visit [athearn.com](http://athearn.com).



**Atlas** will release its Master series GE U23B during the 4th quarter of this year.

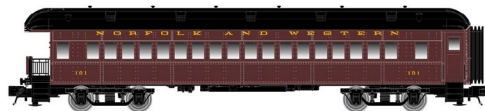
Both DC/DCC-ready and

ESU DCC Sound equipped versions will be available. In addition to the Conway Scenic decorating scheme shown, road names on the N scale model will be Delaware & Hudson, Lehigh Valley, Missouri Pacific, Penn Central, and C&O Chessie System. See the HO scale section of this report for information about the prototype U23B locomotives.

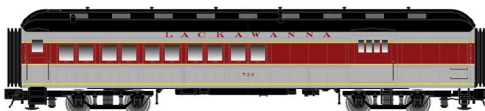
Atlas is preparing a series of 60-foot heavyweight passenger cars for release during the 4th quarter of this year (next page top).



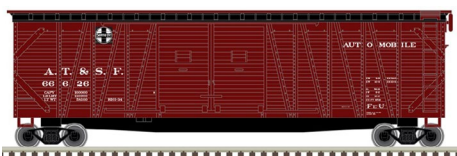
Coaches, RPO cars, baggage cars, a combine, and an open-end observation car will be available in four-car sets and individually decorated for Norfolk & Western, Monon, Lackawanna, and Chicago Great Western.



Individual coaches will also be available for Burlington, Conrail, and Conway Scenic.



A Master series N scale 50-foot single-sheathed wood automobile boxcar is included on Atlas's 4th quarter release.



Cars with end doors for loading automobiles will be available for Western Pacific, Missouri Pacific, Texas & Pacific, and ACY. Road names for cars without end doors include Great Northern and ATSF.



Atlas' 4th quarter production schedule includes 45-foot containers with corrugated sides. Carrier names will be Safmarine,

NED Lloyd, ONE-Ocean Network Express, and NYK Logistics.



Completing Atlas' 4th quarter release of N scale models is a "Shorty" tank car. Road names on the Trainman series model will be HPCX-Hercules, UTLX, San Angelo, MONX-Monsanto, GATX-

General Molasses, CGTX-Canadian General, SHPX-Wyandotte Chemicals, SCLX-Standard Chemical, and GATX-Hooker

Chemical. For additional information contact a dealer or visit [atlasrr.com](http://atlasrr.com).



**Bowser** is taking reservations for three classes of N scale steel cabooses with delivery planned for April 2020. Class N5C steel cabooses, based on a 1942 prototype with round porthole windows, will be available decorated in the following Pennsylvania Railroad schemes: PRR early NY Zone, PRR early Pittsburgh Region, PRR early Western Region with antenna, Keystone orange with antenna, Shadow Keystone with yellow cupola and antenna (above), Shadow Keystone Buckeye Region, and Shadow Keystone Northern Region.



Non-PRR road names for Bowser's N scale class N5C cabooses will be Conrail (left), Conrail (brown Pennsylvania Power & Light coal service), Penn Central (green), and Penn Central (brown PP&L coal service).



N scale Class N5 steel cabooses with rectangular windows coming from Bowser will be decorated for B&M Minute Man (left), Conrail, Conrail MOW, Penn Central, Pennsylvania-Reading Seashore Lines, and Reading Northern. The HO scale model is based on a prototype introduced in 1914.



Class N5 cabooses decorated for Pennsylvania Railroad will be available in the following variations: Early PRR scheme with train phone



antenna, PRR early scheme with black roof, PRR early scheme with brown roof, PRR Keystone orange, PRR Keystone with yellow cupola, PRR Keystone, Shadow Keystone REA, and Shadow Keystone Lake Region.

Bowser's N scale class N5 and N5C cabooses will have body-mounted knuckle couplers, and trucks fitted with Fox Valley Models metal wheels. All of the Bowser models mentioned in this report are scheduled to be released in April 2020. For additional information contact a dealer or visit [bowser-trains.com](http://bowser-trains.com).



Coca-Cola (left). The same truck is available decorated for O-So Grape, and Whistle. Also new are three roadside billboards. In addition to Hostess Cakes, billboards will be available for Coca-Cola, and Planters Peanuts.

New N scale items coming from **Classic Metal Works** include a White bottle truck decorated for



Classic Metal Works is preparing to release a package of gas station details that contains two tank trucks, a gas pump island, and a station sign. Gas company names are Conoco, Union 76, and Standard. For additional

information contact a dealer or visit [walthers.com](http://walthers.com).

**InterMountain Railway** is preparing to release a large group of Trinity 5161 cu. ft. covered hopper cars. The N scale models are



currently in production; however a firm delivery date has not been announced.



Road names include Dakota, Minnesota & Eastern; CSX, Norfolk Southern, Canadian Pacific/Soo, AGP, ADM Leaf, Potash, Union Pacific/CMO, Kansas City Southern, and TILX-Imperial Sugar.



Nine BNSF Heritage cars are also in this production run. They will be decorated with tribute heralds for Great Northern, Spokane, Portland & Seattle; Frisco, Burlington Northern, The Denver Road, Northern Pacific, Burlington Route, Colorado & Southern, and Santa Fe. HO scale models are shown in this report. For additional information contact a dealer or visit [intermountain-railway.com](http://intermountain-railway.com).



**KatoUSA** is releasing a special FP7A - F7B diesel set decorated in Olympian Hiawatha livery. The N scale models will reflect specific details unique to prototype locomotives No. 90A and No. 90B including a winterization hatch on the B unit. The models will be released in three stages beginning with an A/B set for DC operation in June. A second F7B unit numbered 90C will also be available in June.



In July, an A/B set and an individual B unit with TCS DCC K0D8-F decoders will be available. The final FP7A, F7B diesel set and extra F7B will come with factory installed ESU LokSound DCC. They are scheduled for release in early August.



KatoUSA announced that they will be producing ACF 2-bay covered hoppers in N scale. The cars will be equipped with ASF

Ride Control trucks and semi-automatic Kato knuckle couplers. Available in November 2019, they will be produced in two eight-car sets for Santa Fe, CB&Q, Chesapeake & Ohio, and Union Pacific. For additional information contact a dealer or visit [katousa.com](http://katousa.com).



RPO car. Built in 1914 the short, heavyweight car wears NP's classic two-tone paint scheme created by industrial designer Raymond Loewy. The prototype car continued in service through the mid-1960s.



1976. The enclosed design protected vehicles from the elements and greatly reduced vandalism.

**Micro-Trains Line** has released several new N Scale ready-to-run models including this Northern Pacific

The prototype of this Canadian National 89-foot tri-level closed autorack was built by National Steel Car in



Micro-Trains 50-foot Southern Pacific standard boxcar with single Youngstown sliding doors is based on a prototype built in 1957. SP's marketing department used the bold lettering to call attention to the Hydra-Cushion underframe and DF loader systems.



This Erie Western triple-bay covered hopper was built by Evans Railcar in 1978. EW was established in 1977 and operated 158 miles of track from Ohio to Indiana until 1979 when the railroad ceased operations. Like the prototype, Micro-Trains N scale version rides on Barber roller-bearing trucks. For additional information contact a dealer or visit [micro-trains.com](http://micro-trains.com).

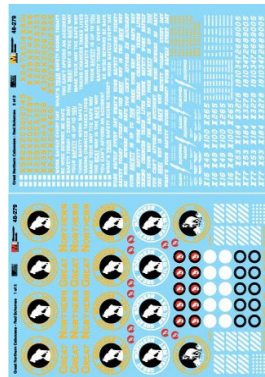
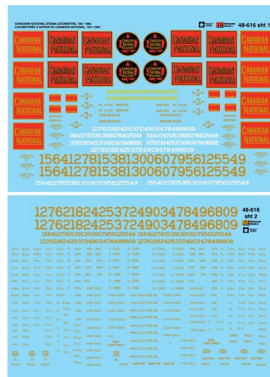
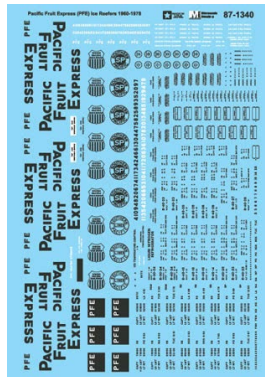


**Monashee Laser Engineering** has released an N scale model (kit #102A-N) of a Canadian Pacific Railway Type 12 #5 Standard Station. Commonly found across Canada, the kit was designed

using original CPR drawings and includes laser-cut floors, walls, windows/doors, roof, trim, shingles and chimneys. Both drop and clapboard siding are included, as is stripwood to build the platform. The completed model, including platform, measures 3.75 x 2.875-inches in size. For more information visit [www.monasheelaserengineering.ca](http://www.monasheelaserengineering.ca).



## NEW DECALS, SIGNS AND FINISHING PRODUCTS

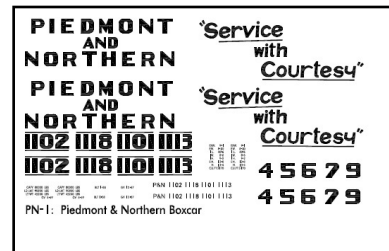


reefer sets are also available now. For additional information contact a dealer or visit [microscale.com](http://microscale.com).

Microscale reports that inventory of several popular decal sets has been replenished. O scale decal sets back in stock include Pennsylvania Railroad pre-1948 steam locomotives, New Haven McGinnis and Alpert schemes for hood diesels, Reading diesels, Rio Grande narrow gauge steam locomotives, and Canadian National steam locomotives. HO scale decal sets for PFE ice reefers, and Pennsylvania Railroad steam locomotives are again available. N scale PFE ice

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[here](http://here) and submit your announcement to us. Our web site and free magazine reach continues to grow, so get on board this new media train! ■



Great Decals sells a wide selection of lettering systems for class A carriers as well as many lesser known regional railroads. Typical of the small lines are these decals for Hinckley & Schmitt, Piedmont & Northern, and Norfolk, Franklin & Danville. For additional information visit [www.greatdecals.com](http://www.greatdecals.com).

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# JUNE NEWS BRIEFLY NOTED | 36

## ! BRIEFLY NOTED AT PRESS TIME ...

**Accurail's** mid-summer release of HO scale car kits includes USRA double-sheathed wood boxcars in several road names, and SFRD 40-foot wood refrigerator cars decorated for Santa Fe's Super Chief, Grand Canyon Line, Scout, and El Capitan – all in new road numbers...

**KatoUSA** has posted a how-to video on Youtube that describes the installation of a new HO coupler adapter that allows mounting Kadee knuckle couplers on Kato's HO Bi-Level and Superliner passenger cars. This is especially helpful for members of clubs that require Kadee couplers on all cars. Check out the video at [www.youtube.com/watch?v=So4TYXN5oRk...](http://www.youtube.com/watch?v=So4TYXN5oRk...)

**Morning Sun** has released both softcover and eBook versions of Volume 1 of Matt Herson's *New York City Subways*...

**Walthers** plans to introduce an HO scale Proto Series EMD FP7 passenger diesel late next year. An economy priced WaltherTrainline Series GP15-1 should be ready for release by October of this year. Look for full details on both new locomotives in the July edition of Model Railroad Hobbyist...



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# SELECTED EVENTS



Model Railroad Hobbyist | June 2019 | #112

## JUNE 2019

*(Many events charge a fee. Check individual info website for details.)*

**AUSTRALIA, QUEENSLAND, TOOWOOMBA**, June 1-2, Model Trains & Hobby Expo, sponsored by Toowoomba Model Railway Club, at Toowoomba Showgrounds, Glenvale Road. Request info from Ted Freeman at [tmrcexpo@gmail.com](mailto:tmrcexpo@gmail.com).

**CALIFORNIA, CROCKETT**, June 8-9, Carquinez Model Railroad Society Open House, at 645 Loring Avenue. Request info from Dave Tateosian at [davetateosian@sbcglobal.net](mailto:davetateosian@sbcglobal.net).

**CALIFORNIA, RICHMOND**, June 15, San Francisco Bay Area Prototype Modelers Meet, at St. David's School Hall, 871 Sonoma Street. Info at [www.bayareaprototypemodelers.org](http://www.bayareaprototypemodelers.org).

**ILLINOIS, ROSEMONT**, June 26-30, National N Scale Convention at Crowne Plaza Hotel at O'Hare, 5440 North River Road. Info at [www.nationalscaleconvention.com](http://www.nationalscaleconvention.com).

**INDIANA, INDIANAPOLIS**, June 15, Yard Sale & Father's Day Open House, sponsored by Naptown & White River Model Railroad Club, 1115 McDougal Street. Info at [naptownrr.org](http://naptownrr.org).

**KANSAS, MERRIAM**, June 8, Annual Narrow Gauge Meet, hosted by Kansas City Area Narrow Gaugers, at Johnson County Library, Antioch Branch. 8700 Shawnee Mission Parkway. Advance registrations are required by June 4. Request info from Larry Alfred at [captlalfred@gmail.com](mailto:captlalfred@gmail.com).

## SELECTED EVENTS | 2

**KANSAS, WICHITA**, June 20-21, NMRA Mid-Continent Convention, hosted by Chisholm Trail Division, at Double Tree by Hilton, 2098 Airport Road. Info at [wichitamcor2019convention.tripod.com/mainx.html](http://wichitamcor2019convention.tripod.com/mainx.html).

**KENTUCKY, LOUISVILLE**, June 16 thru 30, Bon Air Model Train Show, sponsored by K & I Model Railroad Club, at Bon Air Library, 2816 Del Rio Place. Info at [www.kandimrr.com](http://www.kandimrr.com).

**TEXAS, FRISCO**, June 27-30, Texas Special NMRA Lone Star Region Convention, at Drury Inn & Suites, 2880 Dallas Parkway. Info at [www.2019TexasSpecial.com](http://www.2019TexasSpecial.com).

**WISCONSIN, WAUPACA**, June 15-16, Strawberry Fest Train Show & Model Contest, at Waupaca Recreation Center, 407 School Street. Info [www.wamrltd.com](http://www.wamrltd.com).

## July 2019, by location

**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](http://www.steam-events.org).

**ILLINOIS, COLLINSVILLE (metro St Louis)**, July 26-27, St. Louis RPM Meet, at Gateway Convention Centre. Info at [www.icgdecals.com/stlrpm](http://www.icgdecals.com/stlrpm).

**UTAH, SALT LAKE CITY**, July 7 – 13, NMRA National Convention, Little America Hotel, 500 South Main Street. More information at [www.nmra2019slc.org](http://www.nmra2019slc.org).

**UTAH, SANDY (metro Salt Lake City)**, July 12-14, Mountain America Exposition Center, 9631 State St. Info at [nmra.org/events/2019-national-train-show](http://nmra.org/events/2019-national-train-show).

## Future 2019, by location

**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](http://azdiv-nmra.org/psr2019convention).

## 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](mailto:swapmeetinfo@ncmrs.org).

**FLORIDA, THE VILLAGES**, July 8-10th, Train Show & Sale, at Savannah Regional Recreation Center, 1545 Buena Vista Blvd. Info at [www.thevillagesmodeltrainclub.com](http://www.thevillagesmodeltrainclub.com).

**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](http://naptownrr.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](http://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](http://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](http://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](http://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](http://www.omraspringfield.org).

**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](http://empirejunction.org).

**OHIO, CAMBRIDGE**, October 20, NMRA MCR Division 6 Swap Meet, at Pritchard Laughlin Center, 7033 Glenn Highway. Info at [div6-mcr-nmra.org/TimeTable\\_Page.html](http://div6-mcr-nmra.org/TimeTable_Page.html).

## SELECTED EVENTS | 4

**OHIO, MARION**, August 10, Summerail 2019, sponsored by Marion Union Station Association, Marion Palace Theatre, 276 West Center Street. Info at [www.summerail.com](http://www.summerail.com).

**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](http://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](http://www.n-scaleweekend.com).

**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](http://www.lehighlines.org/events.html).

**UTAH, SALT LAKE CITY**, July 7-13, NMRA National Convention and National Train Show. HQ at Little America Hotel. Info at [nmra2019slc.org](http://nmra2019slc.org).

**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](mailto: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](http://gateway2020.org).

**CALIFORNIA, SANTA CLARA**, 2021 NMRA National Convention and National Train Show.

**ENGLAND, BIRMINGHAM**, 2022, NMRA National Convention and National Train Show. Info at [www.nmra2022uk.org](http://www.nmra2022uk.org). ■



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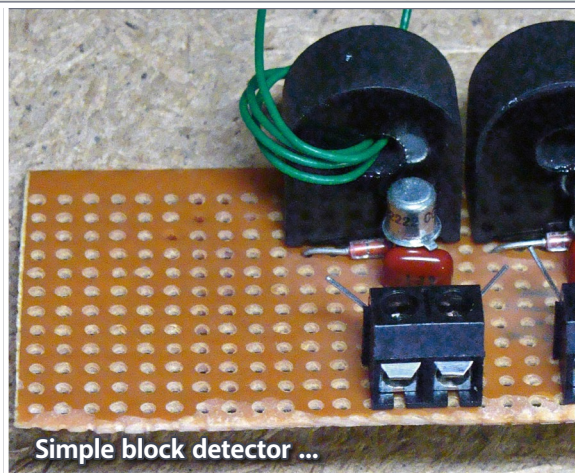
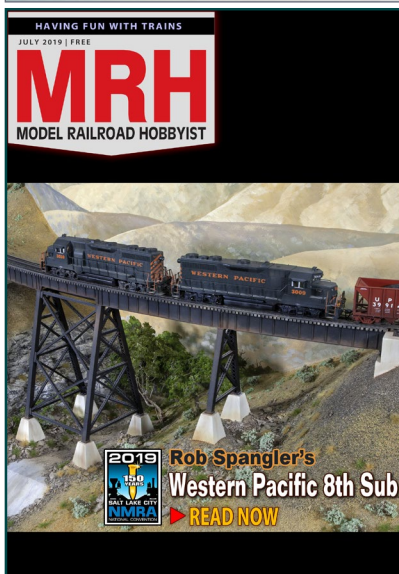
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