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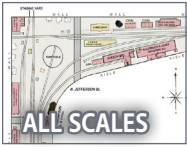
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PUBLISHER'S WELCOME

introduction



MRH Running Extra | May 2019

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JOE FUGATE: CROWD-SOURCING A STEAM LOCOMOTIVE "KIT" ...

RECENTLY, THERE HAS BEEN A THREAD ON THE

MRH forums lamenting that most new steam locomotives being released are massive large wheelbase models. Meanwhile, the smaller wheelbase locos are few and far between.

So what to do about it?

Thanks to the internet and the newer developments in fabrication technologies, maybe it's time to pursue doing a crowd-sourced steam loco kit? If JMRI can be realized, why not a crowd-sourced small steamer?

Crowd-sourcing means people come together and those who have the best skills figure out how the rest of us mere mortals can do the same. The intellectual assets that result would be made available for free.

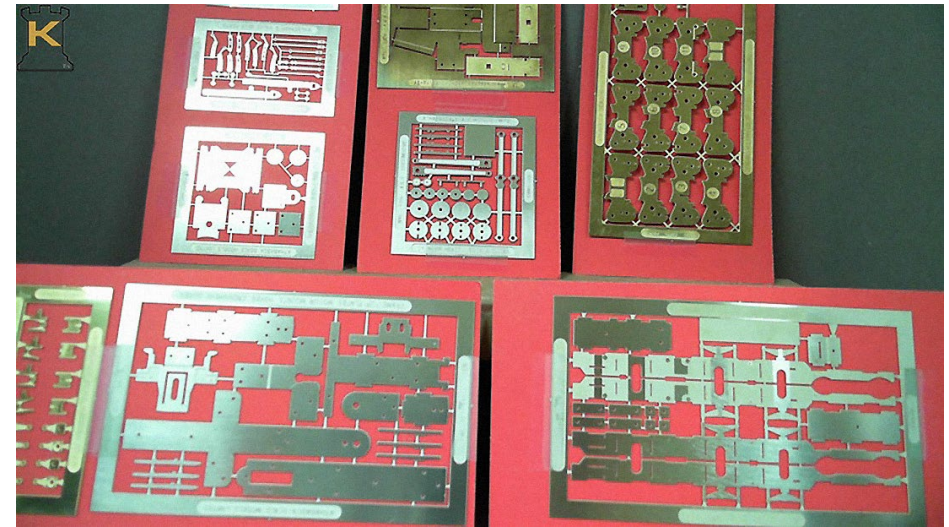
One approach to doing a loco frame, for example, is using etched brass that you assemble to get the frame [1, 2].

Someone out there in internet land certainly has the skill to design said frame. Or you may know someone who is not online who has said skill.

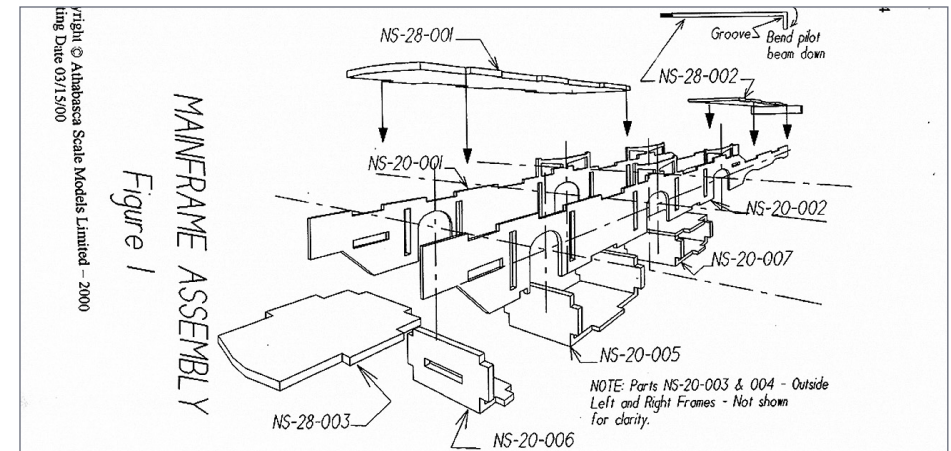
As a result, someone with the skill designs such a loco frame as etched artwork that is made available for free. Others who know how to find a decent-priced etched brass service finds them for us and gets the frame etched. They then pass on that knowledge to the rest of us.

And so it goes. The journey of a thousand miles starts with the first step. If you want help this dream along, [please post here!](#) ☑

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1. Athabasca Shops (now defunct) made a 4-6-0 steam loco kit using etched parts as shown here. A crowd-sourced small steam locomotive could be produced using a similar method. *Photo posted on the MRH site by Bernd Fanghanel.*



2. A page out of the Athabasca Shops (now defunct) 4-6-0 steam loco kit instructions shows how an etched steam loco frame could go together. A volunteer who has the skill to design such a frame could contribute it to this effort: see text. *Photo posted on the MRH site by Bernd Fanghanel.*

THE LIMITED MODELER

column



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JIM SIX SHARES SOME MORE
ABOUT LAYOUT DESIGN ...



IN THE MARCH *LIMITED MODELER* COLUMN, I pointed out how I designed my layout plan using Sanborn fire insurance maps. Feedback on that column was good, which motivated me to press on. This month's *Limited Modeler* continues where last month left off.

I have set what I view as reasonable goals for designing, building, and operating my layout. You won't find any goal for doing a large layout. You will not find a design that focuses on running a timetable of trains from town to town to town. I do not have the space, time, money – or the desire to do so.

I just want one town where I can run a few passenger trains to the depot, set out an express car, then move on. I just want to bring a local freight into town to switch the local industries, and then move on.

As for operation, that is all I want – and I have set my goals accordingly. I also want a nicely detailed layout with good structures and believable scenery.

► **DOING MORE WITH LESS**

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Because of these simple “wants,” I am setting specific goals to achieve them. All are within reach provided I live long enough! There is always that thought to keep in mind. How long we have to live is the most critical limitation of all. Modelers around the age of 30 will have a different perspective.

LAYOUT DESIGN STRATEGY

In simple terms, there are but two fundamental layout designs.

One is for continuous running. There are several ways to achieve this.

The other is point-to-point. There are various ways to achieve point-to-point operation. My layout plan allows for both. I can start a train running and let it run continuously for times when I just want to stand there and watch a train run.

I will be able to let a train run continuously when visitors arrive and are not interested in “real” operation. This works great for an open house, for instance.

However, and this is a big *however* – I am much more interested in realistic operation – which for me means point-to-point operation is called for.

This mode typically calls for staging tracks at each end of the railroad for the obvious reasons and for intermediate towns, interchanges, or other stops. In my case, I do not have enough space for multiple stops, so I have one town – Sturgis, Michigan.

Because my layout wraps around the four sides of my train room I can feed both ends of the railroad from the same staging yard. Looking at my layout plan in [1] you will see that I feed the railroad in both directions from the lower right of the plan.

I also have a small staging yard at the upper left. In both cases the actual staging tracks are in adjacent rooms. I could have the staging yard in the middle of the room to feed the railroad, but I would rather keep that area open.

HAVING ENOUGH SWITCHING

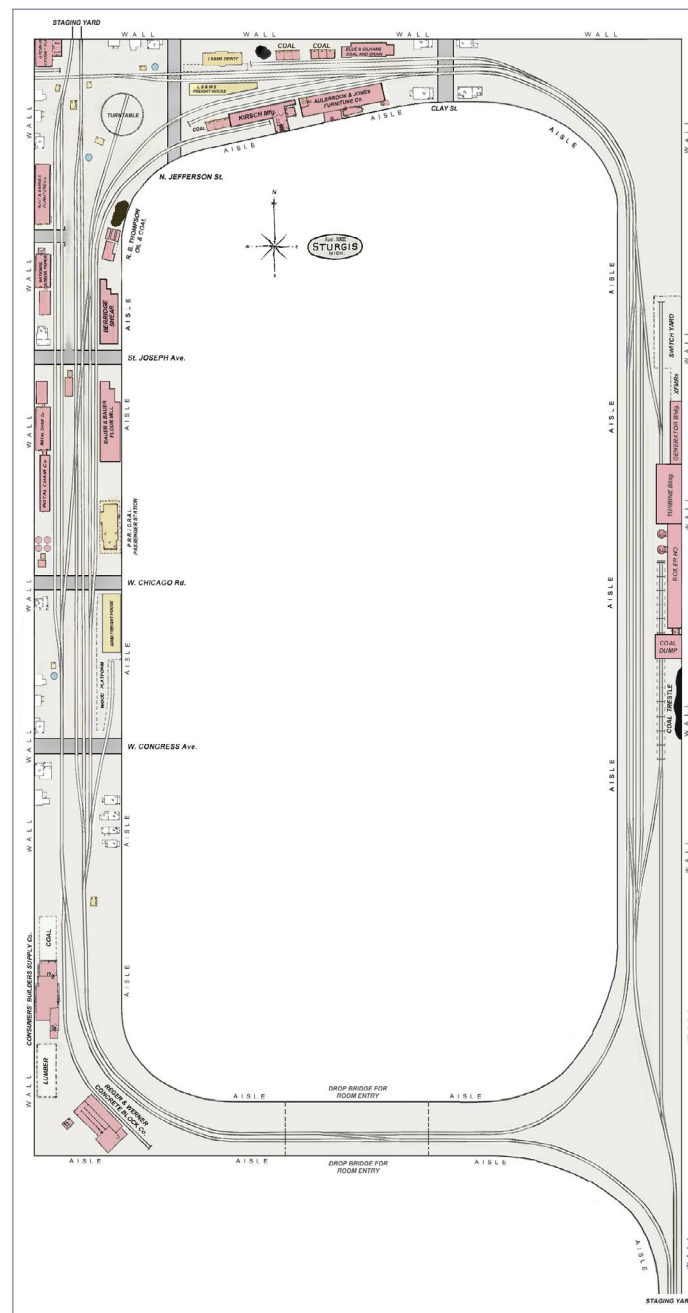
To achieve my goals for my layout design, I need enough on-line customers and team tracks to provide enough switching to keep operators busy for a couple of hours. This means I need to know what businesses are in the town I am modeling – Sturgis, Michigan – what types of freight cars serviced any given customer, and frequency of pickups and deliveries for each car type.

Finding this sort of information may not be easy if you are modeling earlier times as I am. Fortunately, the needed industry information can be found on the Sanborn maps.

At first glance my layout plan [1] appears to be little more than an oval. However, it is more: it's a point-to-point operation with the two ends wrapped around the room where they come close together at the lower right corner of the room. From there, the two ends exit the train room to enter the main staging yard in an adjacent room.

There is a second, smaller staging yard at the upper left corner of the room where the Michigan Central/New York Central and Grand Rapids & Indiana/Pennsylvania lines exit the train room. The Lake Shore & Michigan Southern/NYC line crosses the upper area of the layout before it curves down the right side of the room to the main staging yard.

There is a single track that connects the two ends of the railroad in the lower right. This track allows for continuous running should the need arise – like when I host an open house or have guests who just want to see a train run.



1. My latest layout plan, based on Sanborn maps.

There is a strategically located turntable at the upper left near the diamonds where the three railroads cross, just as was the case with the prototype. Note: The 1892 Sanborn map shows the turntable but the 1922 map does not.

MORE STURGIS DETAILS

Since I have 1922 Sanborn maps of the entire city of Sturgis, Michigan, I can study the individual maps that include the railroad.

I also have some 1892 Sanborn maps of Sturgis. Having maps that are dated 30 years apart allows me to see the growth and changes that took place in Sturgis, particularly with the railroads and the customers served by the railroads.

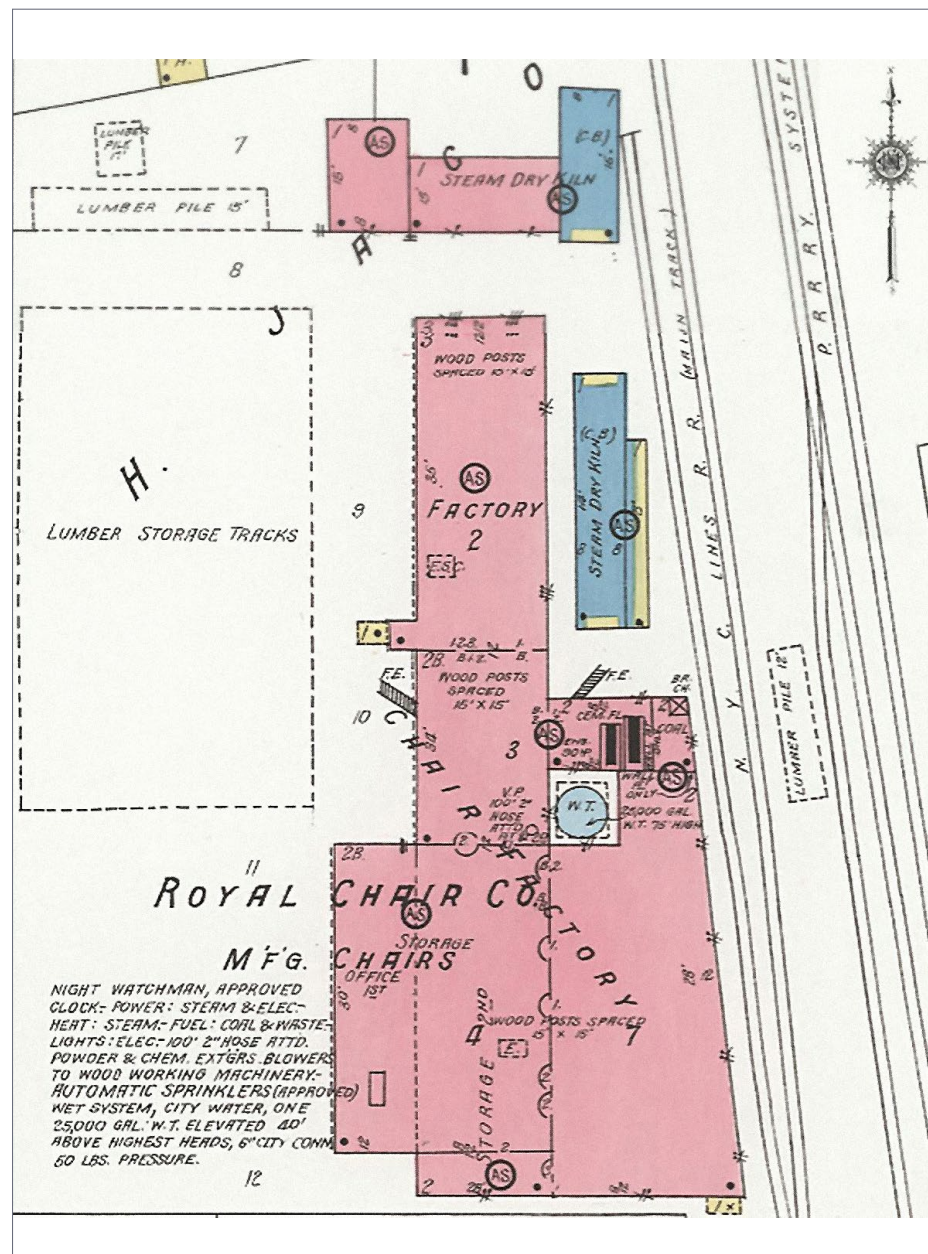
Because I am building a one-town railroad designed for plenty of switching operation instead of through train running I need to know what customers were served by the railroads in Sturgis and the particulars of each. I need to know more than just the products they produced and shipped, and also what types of freight cars were delivered and picked up from these customers.

I need a good many customers or my operating sessions will end too quickly. I like an operating session to last from one to three hours depending on the mood I may be in at the time.

To make this happen, I studied every railroad-served customer on the Sanborn maps, including their locations relative to the railroad and relative to each other. What I'm finding is really working out well for me and my railroad.

Diagram [2] shows the Royal Chair Factory that I am modeling. In this closeup from a Sanborn map you see the building footprint and that it is brick construction (indicated by the red color).

Note the 75-foot high 25,000 gallon water tower located 40 feet above the highest water head in the building.



2. Sanborn map closeup of the Royal Chair factory in Sturgis.

There are two buildings for steam drying kilns. The kiln on the east side of the main building is mostly stone construction (blue color) with some wood framing as well (yellow color). The second building for a steam drying kiln is a short distance across yard to the north. It is a combination of brick and stone construction.

The location and relative size of the lumber storage area is clearly shown to the east of the main building.

MODELING ROYAL CHAIR

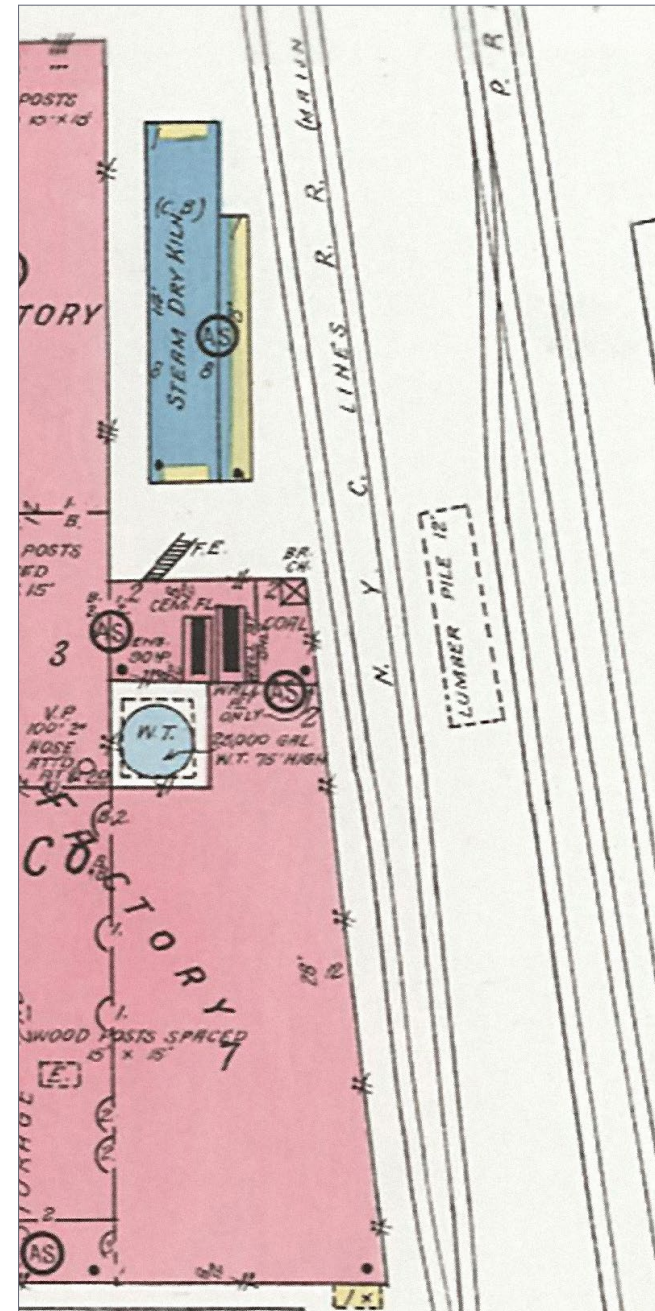
Diagram [3] is the part of Royal Chair Co. that I am modeling. I do not have room for it all and I prefer not to reduce the dimensions of the individual building sections just to get it to fit into the space I have for it.

Eliminating the second kiln drying building allows it to fit without appearing toy-like – that is, too small. In my opinion, too many available model railroad structures are too small. Apparently, structure manufacturers figure model railroaders don't have the space or the funds for larger structures. Because of this "problem" I typically combine two or more structures to come up with what I want.

As you see in [3], I have cut away the back part of the Royal Chair factory building. What I retained fits up against or near the backdrop wall. While situated against the wall, it is in no way a building flat. It has nine inches of depth.

The prototype factory is oriented north/south. The railroad is angled slightly to the west of north which caused the building to have its east wall angled in order to parallel the railroad tracks.

I chose to not angle the tracks. This allows me to keep the structure rectangular. Prototype purists might cringe at doing this, but as you know, this is my railroad! After all, I must fit five tracks into this scene.



3. Focusing on the part of the Royal Chair factory that I want to model.

Diagram [4] is a closeup view of the section of Royal Chair where coal is stored. Coal was used to fuel the boiler for generating steam, and that in turn was used for steam heating and for steam-driven machinery.

Having a coal-fired boiler means the railroad delivered and picked up coal cars. I believe coal was delivered in gondolas and manually unloaded by a couple of workers with shovels. Labor was less expensive than machinery during the times before WWII.

However, I choose to deliver coal to my version of Royal Chair in 2-bay hopper cars that unload into a pit beneath the rail siding and gets elevated with a (Walthers) conveyor. I find this a bit more interesting and certainly common in 1927. Again, my railroad!

THE VALUE OF PHOTOS

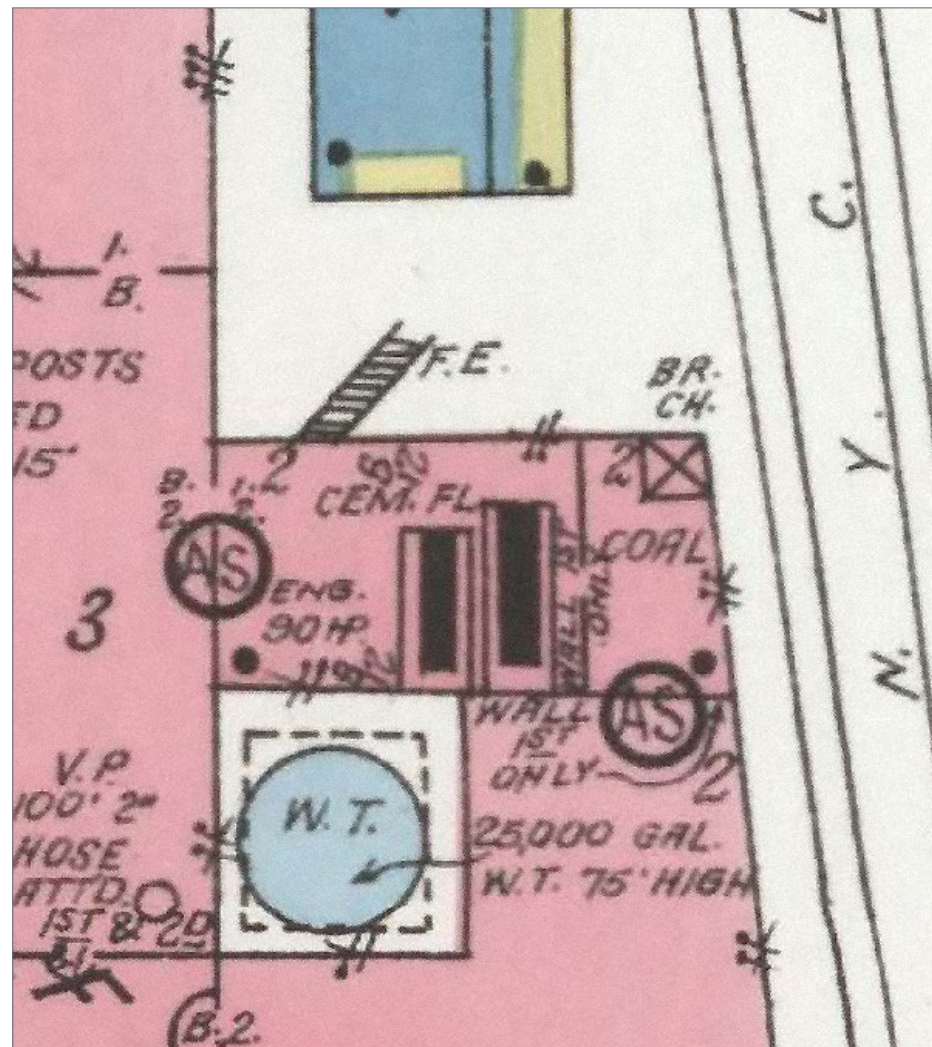
Let's not forget the value of photographs of what you are modeling. Here in [5] is the Royal Chair Company that we discuss in the previous paragraphs. While the tracks and the building face are slightly angled to the west (we are looking to the north), you could never tell it from this old photograph.

When I pointed out that my Royal Chair structure will be rectangular, you can see here that nobody should ever question it. I suspect I know more about railroad operation and the structures along the railroad in Sturgis, Michigan, back in the 1920s than anyone in the hobby!

MORE THAN A TRACK PLAN

About now you should be getting the idea that designing a working layout is much more than just coming up with a track plan. I see far too many layout design people primarily focused on a track plan and not on the other equally important aspects of layout design.

These designers sketch one track plan after another, tossing most aside and starting again. While this may seem fun for some folks, I see that approach as leading to layouts that likely won't work well when it comes to operation.



4. Closeup of the coal storage area at Royal Chair.

Such layouts often run fine, but you often can't do much during an op session other than move the through trains about. If that is what "turns your crank," then more power to you. Don't let me tell you that you designed your layout wrong!

But in my less than humble opinion, many model railroaders draw a track plan and add structures and scenery as an afterthought. This typically leads to a layout that is not all that it could be.

I have seen many layouts that have fallen into disuse or are abandoned. When I talk with the layout builder about it, the typical discussion reveals he designed a track plan, then back-fit the structures and scenery.

Such layouts either miss getting a good purpose for being, or they fail to meet the goals needed to adequately meet the modeler's purpose.



5. Period-appropriate photo of Royal Chair in Sturgis.

So, a *good layout design* is far more than a track plan. The design process needs to include not only the track plan, but also online customers and what structures will be needed, the types of freight cars that will be needed to service the customers, as well as the frequency of deliveries and pickups.

I believe that once you have settled on a location, you should study the customers in the location that the railroad will serve. As with the Royal Chair Company, this should include not only the rail-served customers, but also the different types of freight cars that serviced the customers. Also, don't overlook the frequency of service or if there are other customers sharing the same siding.

Many layout designers avoid this multi-customer situation because it complicates switching the railroad and because of this, they cannot meet the timetable schedule and the dispatcher jumps all over them!

I do not see that as fun. I prefer to do things the way the real railroads did in my time and place. One thing that I have found is that most sidings in Sturgis were shared by more than one customer.

To me, this adds to the fun and yes, it slows things down when switching. This is a big reason that it takes up to three hours to switch Sturgis on my layout.

This is also the reason that I do not use a fast clock. I hate fast clocks! I prefer to run my railroad in "real time." I don't like making operations into a game of beating the clock.

MORE INDUSTRY PLANNING THOUGHTS

While planning your layout based on your railroad's customers, have you considered potential customers that are not located alongside the railroad? Instead, they may be blocks or even miles away.

This certainly was the case with railroading back before the Second World War. If not located at trackside, then how were businesses served by the railroads? The answer is team tracks.

Team tracks could be busier than customers that were right on the railroad. I will have two, maybe three, team tracks to serve my off-line customers. This will generate a lot of traffic for my three railroads.

Tony Koester has told me many times that a simple team track could be the most important customer for your railroad since it serves businesses that do not have rail sidings.

Looking in [6], we see an area in Sturgis with a busy team track. The GR&I is at the left and the two tracks at the right belong to the



6. Busy team track (on the left) in Sturgis circa 1911.

Michigan Central line that ran between Battle Creek, Michigan and Goshen, Indiana.

The cut of cars with the flat car are in the GR&I team track. Look at all those boxcars on this team track. There is a wagon alongside the boxcar just before of the flatcar.

This was 1911 and most local traffic was picked up and delivered via horse-drawn wagons. For my 1927 setting, I envision early delivery trucks and possibly a few horse-drawn wagons still in use.

DON'T FORGET INTERCHANGES

Another consideration when designing a model railroad should be railroad interchanges. That is, interchanges with other railroads and/or between different lines of the same railroad.

I have three interchanges on my railroad. There is the interchange between the Michigan Central and the Lake Shore & Michigan Southern. The second interchange is between the Michigan Central and the Grand Rapids & Indiana. The third interchange is between the Grand Rapids & Indiana and the Lake Shore & Michigan Southern.

If you look closely at [7] you will see these three

interchanges. These interchanges will generate a lot of switching as freight cars are transferred between the railroads.

Since my trains do not run from one city to the next on my railroad, my operational challenges include not only switching the on-line customers and team tracks, but also managing interchange among the three railroads.

Think about this: If I have interchange traffic between the LS&MS and the MC it must cross the GR&I. This means that such moves *must be coordinated* with three railroads!

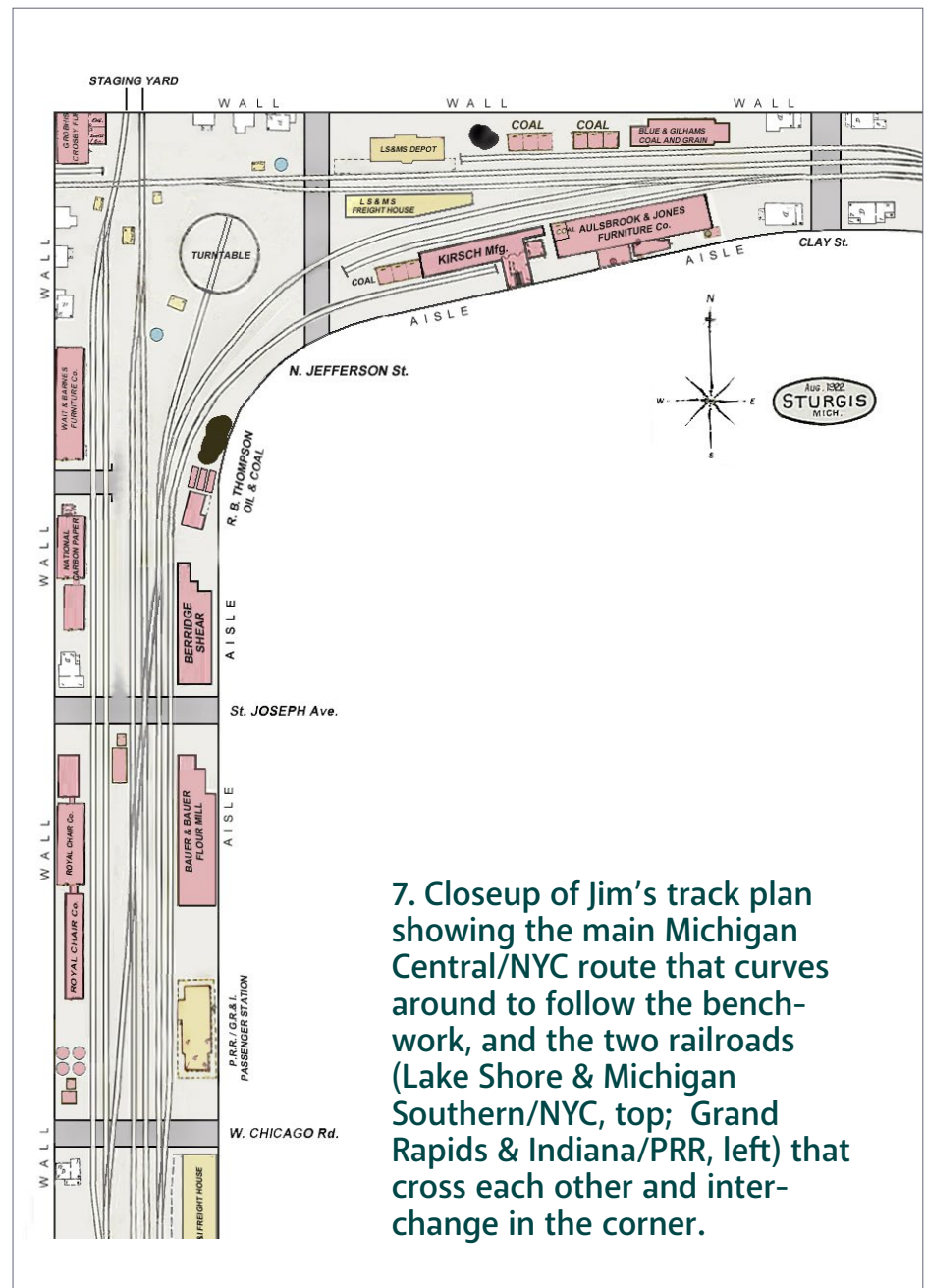
Looking over my track plan in the accompanying pictures, you can see that most of my sidings are relatively long, especially when it comes to making run-around movements. This takes a lot of time if you run trains at prototypical speeds – which I insist on.

Some of my operators have complained about this. These guys were used to operating on layouts with fast clocks where switching got conducted on short sidings and they were always hurrying to keep up with some timetable.

Too bad. Welcome to prototypical railroad operation where getting the job done right is more important than always being in a big hurry!

An interchange need not be complicated. It can be as simple as a wye with a track that runs to a wall. Freight cars can be spotted on the wye track for imaginary pickup by the other railroad. There can also be cars on the wye track waiting for your local train or through freight to arrive to pick up while setting out cars for the other railroad, and then move on.

Will your railroad interchange with other lines of your railroad or with other railroads? Again, treat an interchange where freight



7. Closeup of Jim's track plan showing the main Michigan Central/NYC route that curves around to follow the benchwork, and the two railroads (Lake Shore & Michigan Southern/NYC, top; Grand Rapids & Indiana/PRR, left) that cross each other and interchange in the corner.



SLOWING DOWN OPERATIONS

If operation is supposed to be fun, one good question we can ask is – what’s the rush?

Shouldn’t things that slow down operation be welcome because they will extend the fun and make it last?

Jim makes a good point here. Maybe it’s time we focus more on the depth and richness of the total ops experience – rather than turning operation into a mere caricature by casting it as nothing more than a frantic beat-the-clock game.

This all said, a fast clock doesn’t have to always be bad. For instance, on my Siskiyou Line, we use an 8:1 fast clock for sequencing events and knowing time of day, but we never use the clock to put pressure on anyone.



8. Ithaca, NY, DL&W yard, circa 1909.
William B. Barry photograph, NPS Steamtown Collection

cars are spotted for your railroad to pick up and set out as a very serious “customer” that will help to keep your railroad busy.

In [8] we see another scene much like picture [6] of Sturgis. I don’t know the town location but I assume it is eastern Pennsylvania since the locomotive at the left is a center cab (or Camelback).

The scene shows what appear to be transfer tracks and team tracks between two railroad lines. I may be wrong about this but it sure would be simple to make it so in model form.

This town and Sturgis are just two of what must have been many towns with a similar arrangement. I also really love the wood-sided gondolas and all the short boxcars. Thank you, Accurail, for making these available as affordable kits!

TYPES OF TRAINS

In addition to what we have gone over up to this point, we also need to consider the number and types of trains that pass over the railroad.

These trains will “interfere” with your local train operation, slowing things down as your local waits for through trains to clear town so your local can go back to work.

I have three rail lines that pass through Sturgis in my 1920s setting. All three will run a passenger train or two that stops at their respective depots during an operating session.

This certainly complicates operation, adding to the time and enjoyment of operating the layout. The GR&I/PRR line also had through passenger trains that ran between Fort Wayne, Indiana, and Grand Rapids, Michigan.

Since many model railroaders set their layouts in the twilight-or-post-passenger train era, most don’t realize what busy passenger train operation did for the railroad’s traffic level. I do not count

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Amtrak since in most cases it only passes through town and maybe stops to let off or pick up a few passengers.

Look at picture [9] for instance. In this 1940s setting, there is a passenger station in the center of the photo with a crowd of people waiting for the arrival of a passenger train. There, two express cars including an express reefer are placed (above the car at the right) in what appears to be a team track for loading or unloading.

There is a water plug alongside the track at the left, and there is a coaling tower in the distance where the smoke is. All of this



9. In the distance, on the left, you can see a platform crowded with passengers waiting for the next passenger train. This 1940s scene illustrates just how big a part of life riding a

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affects operations since at least one passenger train will stop here, and probably several during the course of the day. I wager there is an interchange in the background or behind the photographer as well.



passenger train used to be, and how passenger operations can be a serious component of an early 20th century layout.

If this setting was to be situated in your one-town layout design – or any layout design for that matter – it would significantly impact your operations. Passenger trains will stop to pick up and let off passengers. They must stop at the water plug for water. And in this scene, they may even stop for coal.

While a passenger train blocks the tracks, the local trains must get out of the way and probably wait for the passenger train to leave before they can go back to work. Modelers of more contemporary settings would not have this type of operation since railroading has changed so dramatically since 1950.

I know I keep harping on modeling earlier times, but there are some good reasons for doing so.

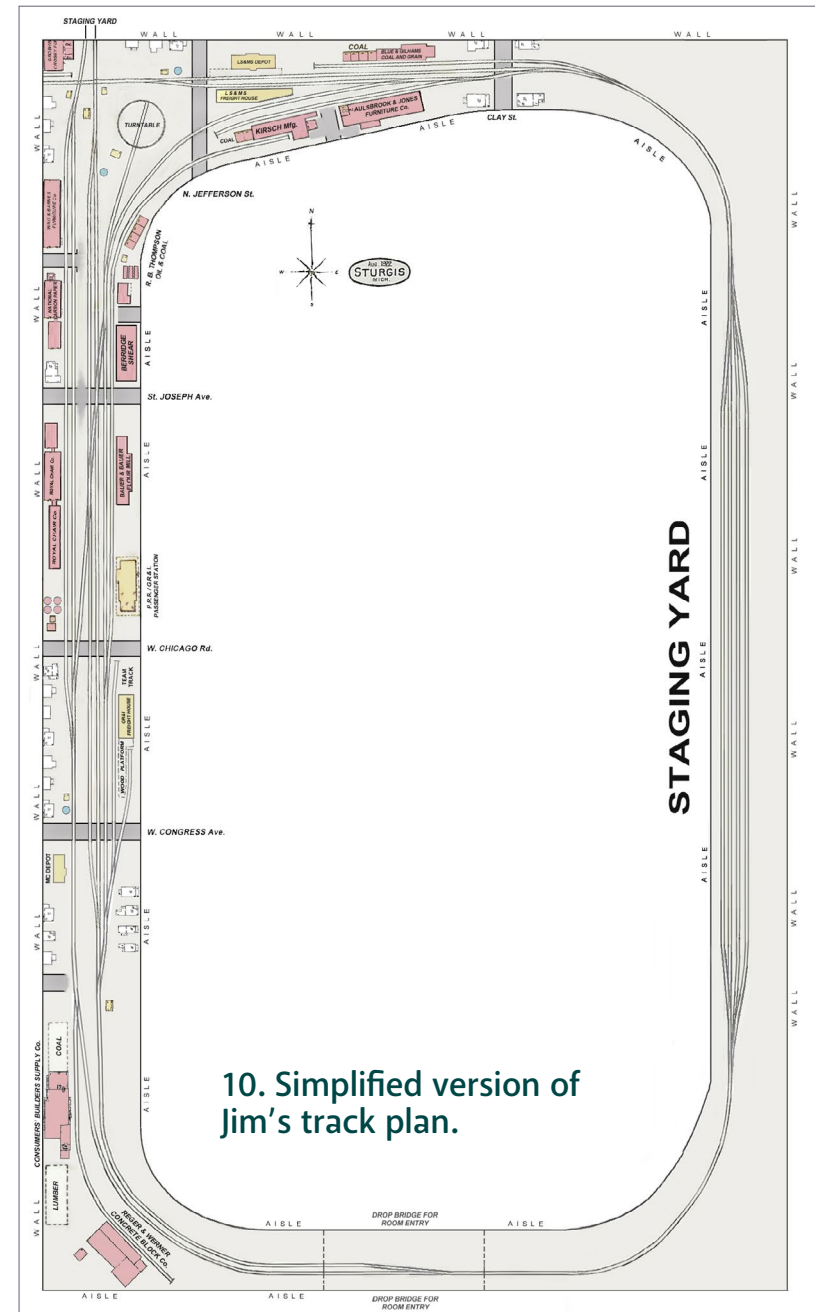
APPLYING THIS TO LAYOUT DESIGN

How do we include all these factors in our layout design? It will take different thinking from what you may be accustomed to. We are not designing for “running trains.” The design is intended for railroad operation in the town you are modeling.

Such a design will not need long runs through the countryside between towns and certain specific locations. Throw out that kind of traditional layout design thinking.

Instead, start with a prototype setting -- whether it is the railroad you are modeling or not. You can apply this method to a freelanced railroad if that is what you want. The key is to find a real setting that represents what you want to model. You may pick three or four such scenes and combine elements of each to create your one-town setting.

The key for your town setting is the track arrangement. This is where good photography can be handy.



In my case, I have relied more on Sanborn maps to come up with my track plan. I simply match the prototype as best I can, taking care not to create impossible switching situations.

Now, the big question. How do we get trains into and out of our town setting? This is where staging comes into play. The best situation is often staging access at each end of the town.

Start in the staging yard. Run your train into town. Do what you have to do with your train, and then exit out the other end of town. Simple? You bet.

There are several ways to accomplish this. For many years now, this meant building a staging yard at each end of the layout. This is a simple concept but takes up quite a bit of space for two staging yards. An upside is that you need no duck-under or removable bridge to get in and out of the train room.

I see another way to accomplish this. That is, build the layout setting on one side of the room, then locate your staging yard on the opposite side of the room. The two remaining sides of the room connect the town setting with the staging yard. In this way, a single staging yard can feed both ends of town.

The down side is that you will need a duck-under or a lift-out bridge unless you are building in a basement or attic and the stair access is in the center of the layout. This may not be workable for most of us, because the train room space may be shared and you still need access to and from the layout to other parts of the area.

My layout room is a rectangle with the ends half the length of the main sides. It is 12' x 24'. I find this to be very workable for me. It is almost too much layout for this old man. See picture [1].

I am seriously considering simplifying the layout further by not building the power plant. I can then use that side of the layout as my staging yard. This would definitely reduce the time, money, and effort needed to complete the layout.

I may do this in stages, adding the power plant afterward along with the two staging yards in the adjoining rooms. I must remember that I am 70 years old and really want a finished layout. The larger and more complicated the layout, the longer it will take to complete.

Picture [10] shows a simplified version of my master layout plan. I made this to demonstrate my thinking that the layout can be a loop with the staging on one side of the layout and the primary layout as the remainder. This allows for point-to-point operation, running trains into and out of town from both directions.

I still have my staging yard at the upper left. This yard is in the adjacent basement storage room. The staging yard at the lower right of my master plan has been eliminated in this version of the layout as has been the power plant.

With this simplified design, I can always add the power plant later, along with the main staging yard in the adjacent room at the lower right. For that matter, I could model another scene with railroad customers instead of the power plant.

It all depends on the mood at the time. Rest assured this plan will see further refinement.

All right already. Enough of me going on and on about designing my layout. Time to move on.

Next month will be a different topic. When I have some construction progress to share with you, we can revisit how I am doing with my layout. I am sure that plenty will change by the.

Take care.





Running Extra | May 2019



THE MRH STAFF offers some simple ways to slow down ops and add to the fun ...

IT DOESN'T TAKE MUCH TO ADD A SIGNIFICANTLY more railroad feel to your layout operating sessions.

The secret is simple: learn to think like a real railroader when it comes to interacting with your train. The basic idea is to get yourself thinking more "prototype thoughts."

Once you learn to do this, you will find it slows down operation and lets you savor the experience more. As has been said, "if ops is supposed to be fun, what's the rush?"

1. (left) Brandon Thompson and Terry Roberts (far left edge) operate the Dole Turn on Joe Fugate's Siskiyou Line 1 layout. This job switches a lumber mill capable of holding 40+ rail cars and can take a couple hours. It's anything but fast!

THINKING LIKE A REAL RAILROADER

Think about it for a moment. Full-sized trains are heavy and can be dangerous if not operated properly.

When running trains on the model, take your time and don't rush things. Carefully check your train before you start, and stay alert for problems as you run, so you can catch things before they develop into a major mishap.

On the prototype, a big mishap often means costly damage or even a fatality. If you can begin to think of your models as big, heavy, and potentially dangerous if operated in a rush, then you are beginning to think more like a real railroader.

Let's see how this simple mindset change can lead to slowing down and introducing some simple-but-fun railroad feeling to your ops.

STARTING OUT WITH YOUR TRAIN

When you get assigned a train to run, think more like a real railroader and follow these steps.

1. Walk your train: First thing, "walk" the train. Move down the train car by car, first checking that all wheels are on the rails. If anything is off the track, put it back on and note the specific car in case it happens again later when moving.

Once you get to the end of the train, now "walk" the train back forward car by car, this time checking coupler height between cars.

If you find any coupler height problems, make note of them since they might cause a break apart or catch on turnouts and grade



2. When you first get your train, slow down and take some time to make sure you're ready to move your train safely.

crossings later. If the mismatch is especially bad, then bad-order the offending car and set it aside.

2. Establish control of the locomotive: Dial up your locomotive on your DCC throttle, set the loco in reverse, and crack the throttle. The loco should slowly move in reverse.

Also, if the loco has lights, try F0 to turn on the headlight. If you have sound, toot the horn/whistle three times (backing up) and/or turn on the bell. Close the throttle before the rear of the train is allowed to move more than one car length.

3. Conduct a "break" (brake) test: On the prototype, a brake test involves draining and pumping the air while the rear-end crew watches to verify the changes register properly on the caboose air guage or the FRED. On the model, we can do an equally useful function, and call it a "break test."

Put the throttle in forward and pull the coupler slack out of the train until the caboose or final car just barely starts to move. Then reverse the train and push it until the caboose/rear car just barely begins to roll backwards, then stop.

As given in the text, 1) walk your train; 2) establish control of the loco; and 3) do a very practical "break" (aka brake) test.

Watch the train carefully as slack is taken out for any cars that are not coupled or that break apart. Once the caboose/rear car barely starts to move and you have proved the train is all coupled and intact, stop the train and reverse direction, removing all the slack.

Once the caboose/rear car starts to slowly move backwards, the "break test is good." At this, close the throttle and throw the direction switch back to forward.

The train is now considered checked and ready to go.

Do note, however, these steps take some time, like 5 real minutes. If you're operating to a schedule and fast clock, make sure you get your train assignment in plenty of time to conduct these very useful tests and not feel rushed. Start at least 10 real minutes before any scheduled train departure time.

NEXT, REBLOCK YOUR TRAIN

Just adding the three train test steps we've outlined will do a lot to increase the railroad feeling of taking out a train.

Joe Fugate says, “Another thing I like to do on my layout when I get a local train is to reblock the train in the yard before I call the dispatcher. I check with the yardmaster (YM) and ask him if I can have another track and reblock my train before I leave. Most of the time the YM is okay with that.

“I then look at all the car cards and which industries they will be going to, and then I move the cars around to make my time out on the road as efficient as possible. Often a local will need to clear the main for higher priority trains.

“If I’ve already pre-blocked my train for the way I like to switch the industries in the towns, then I have minimized the time I will need to block the main and made my job out on the road much more efficient.

I figure fouling an extra yard track for a while is vastly preferred to fouling the main! This is also a good reason why it pays to make staging yards visible and to scenic them with some basic ballasting and scenery. Reblocking a train in a staging yard becomes a lot more fun that way!”

But do note, this adds *still more delay* to your train’s actual departure time, so if you’re running to a schedule and a fast clock, better give yourself another 15-30 real minutes to reblock the local when you get it!

NEXT, TWO-PERSON CREWS

The next addition you should consider making is to assign a two-person crew to a train. Operation often is a social activity, so why not make it deliberately social by design?

Two-person crews add a lot of railroady feel to an op session [3].

One person is the engineer/head-end crew, and operates the locomotive set moving the train. The other person is the conductor

TWO-PERSON CREW

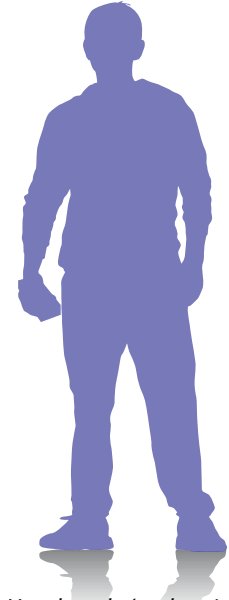
Conductor/Rear-end



Has radio, clipboard, track warrants, car cards, and pen

- The one in charge
- Talks to dispatcher
- Manages track warrants
- Manages car cards
- Directs engineer
- Monitors train status
- Acts as switchman

Engineer/Head-end



Has throttle (and optionally) a radio

- Follows conductor’s orders
- Operates locomotive
- Watches track ahead
- Watches signals
- Blows for grade crossings
- Reports status to conductor
- Follows switching orders

3. Joe Fugate says, “I prefer two-person crews on the trains we run on my Siskiyou Line layout. Notice each person has specific duties, with the conductor being the boss and the engineer just running the throttle to the conductor’s commands.”

or “rear-end” crew, which includes the jobs of conductor and switchman/brakeman.

Engineer/head-end duties: The engineer should stay near his engine set and watch the track just ahead. The engineer *should not* walk way out ahead of his train to track he would not be able to see from his locomotive. The engineer also should not watch the train itself, but should rely on the conductor/rear-end crew to find out how things are going with the train.

My Siskiyou Line prototype uses all-manual turnouts, so when approaching a turnout that needs thrown, the engineer should stop the train, throw the turnout, pull the train through the turnout, then stop the train again to allow the rear-end crew to re-align the turnout.

Things like this lengthen the run, thereby adding to the enjoyment of the assignment.

Conductor/rear-end duties: Besides managing the paperwork and talking to the dispatcher, the conductor acts as the “rear-end” crew.

On the prototype, the rear-end crew cannot see the track ahead of the train, and the engineer can seldom see much of the train behind.

The conductor/rear-end crew person should refrain from walking out ahead of the train to check the track, but should keep their eyes on the train to make sure all is well.

Note that the rear-end position is great fun, because you can rail-fan the train and be doing your job at the same time!

When meeting another train, prototype railroaders often watch the train rolling by carefully and will call out any issues they see, or if all is well, will announce “rollby is good” to the other crew.

Remember back to what we said in the beginning – real trains are big, heavy, and dangerous if they aren’t operated carefully. This all goes back to thinking like a real railroader, and can be a lot of fun!

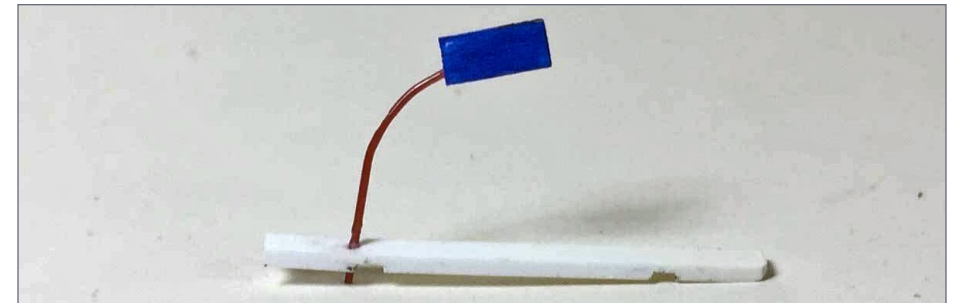
NEXT, ADDING BLUE FLAGS TO OPERATION

On the prototype, blue flags get used to keep people safe while working on, in, or under freight cars. These flags restrict access to freight cars or tracks. The applications of blue flags have changed over the years. Originally they appeared in maintenance area and could only be placed and removed by shop crews. Check a rule book for your time period.

A simple Google search reveals this OSHA railroad regulation: The blue flag policy shall be used to mark stationary cars day and night. This policy shall include marking the track in advance of the spotted cars (blue flag for daytime, blue light for darkness).

Blue flag protection is also a common element used to protect repair-in-place tracks (RIP), but also can be used to protect freight cars being loaded at freight houses or team yards, or where cars are being loaded or unloaded on industrial sidings.

Eric Hansmann, MRH’s newest staff member, explains about how he added blue flags to his layout ops:



4. Eric Hansmann built these blue flag track markers using some styrene channel, styrene rod, and a bit of styrene sheet.



5. Eric placed some blue flag markers on a couple tracks at the freight house on his layout. Blue flag rules say you can't move the flags or go past them. Only the one placing the blue flag may remove it. His crews had to switch around them.

"I made three blue flag markers to use on my Wheeling Freight Terminal. I cut some styrene channel stock a little longer than a railroad tie, and notched it fit over the rails.

"I used a piece of 0.020-inch flexible styrene rod to support the blue flag. I drilled a hole into the center of the channel with a #75 drill bit, just to the outside of one rail.

"I glued the rod into the channel and carefully bent it to hang over the center of the track. I cut a rectangle from a piece of scrap styrene and glued to the end of the rod. When the glue was dry, I colored the face of the rectangle a blue Sharpie marker.

"I assembled these three blue flag markers easily in about twenty minutes. They are probably a little larger than what was used on the prototype, but I did want my crews to notice these during an operating session.

"On the prototype, the blue flags can only be removed by the crew member who placed them. When I first placed the blue flags on some freight house tracks, I planned to remove the blue flags after a crew had spotted an initial batch of cars.

"Crews will not be able to use the tracks with blue flag protection, so they will have to think through their moves and possibly make an extra run to complete the work.

"The blue flags did cause some extra work for crews switching the freight house due to unavailable tracks. But they got the freight cars all spotted and pulled with the usual amount of time. I think these flags added a fun twist to the session and I'm certain the blue flags will be seen again."

Note: If you paint the white styrene channel and rod a medium gray color, these markers will fit right in on the layout and look more finished.

CONCLUDING THOUGHTS

As you can see, there are several simple things you can do to enhance your operating sessions, to slow them down, and to give them a more realistic railroady feel.

Pick and choose the ones you like, or add them all slowly as your op crew gets used to them.

Notice none of these realistic operations enhancements involve any paperwork or boring administrivia. They're simple, and they encourage slowing down and savoring the ops experience! ☒



Early New York Central GEEPS



Jim Six reviews prototype details and shows how to upgrade models ...

1. Jim Six's HO scale Peoria & Eastern dual-service GP7 runs light with a caboose.

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THE NEW YORK CENTRAL HAD ONE OF THE

largest fleets of GP7 and GP9 locomotives. They were purchased to replace the large fleet of 2-8-2 Mikado and 4-8-2 Mohawk steam. So successful were these early Electro-Motive Geeps that it only took about six or seven years to usher the New York Central's huge fleet of steam locomotives to the scrap line.

Modeling the Central's early Geeps has been controversial among model railroaders. The locomotive color was often thought to indicate freight, passenger, or dual service duties. Many believed the Central's freight locomotives were painted with a black body and the passenger locomotives were painted with a gray body. This was true when the NYC first started ordering diesels, but in 1953 the paint specifications changed.

Starting in 1953 new diesels were delivered with a gray body. This gray body color was also used to repaint diesels and was applied to passenger, freight, dual-service, and switching locomotives. As these new and repainted locos increased in number, the black-bodied diesels on the New York Central began to disappear. However, the NYC diesel fleet was so large that not all the black-bodied diesels were repainted.

In 1958, there was another change. The railroad paint scheme directives reverted to the black body color. It turned out that the gray paint did not wear well, forcing more frequent repainting. The economic recession of the late 1950s also caused the railroad to cut costs.

Let's review prototype photos that illustrate hardware and paint variations on assorted New York Central GP7 and GP9 locomotives. Keep in mind the NYC GP locomotives were originally set up with the long hood as forward.

THE PROTOTYPES



2. Here's a recently painted, or at least recently cleaned, freight GP7 with the small 800-gallon fuel tank. The body is black and the unit lacks provisions for passenger service; no steam generator or water tanks, no dynamic brakes. This is a typical early NYC GP7.



EARLY NYC GEEPS | 5



3. NYC 5635 is essentially the same as 5607 in [2] with two exceptions. The body is gray and the horns have been moved to the top of the hood. Note the color difference with the trailing locomotive.



4. NYC 5653 wears original black paint with horns mounted on the hood side. Note the bumper on the end sill above the coupler. These bumpers were located on each end of the locomotive. A peek at 5657 to the left shows a gray body with the horn mounted on top.

EARLY NYC GEEPS | 6



5. NYC 5657 is gray and in freight service. The unit lacks the steam generating equipment required for passenger train service. Note the bumper above the coupler. Some NYC fans feel the bumpers were only found on passenger Geeps. This and other photos here illustrate bumpers were used on locos in both services.



6. NYC 5693 was initially assigned to work the line between Ashtabula and Youngstown, Ohio, in the heart of the snow belt between Cleveland and Buffalo. Note the winterization hatch on the roof and the dynamic brake blister. Heavy coal and ore shipments dominated traffic on this line—hence the dynamic brakes. The body is painted in pre-1953 black.

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7. NYC 5703 is much the same as 5693 in [6]. This locomotive has been repainted in the gray body color. Even the pilot faces are painted gray with white safety stripes overlaid. Note the 5693 and the 5703 do not have bumpers above the couplers.



8. NYC 5711 is another GP7 also assigned to the Ashtabula-to-Youngstown line. This locomotive is a dual-service locomotive equipped with a steam boiler and water tanks. Note there are no dynamic brakes. There is, however, a bumper above the coupler at each end of the locomotive.

EARLY NYC GEEPS | 8



9. This dual service GP7 has the early black body. A pair of gray E7 locomotives on the track behind it offer a contrast. A cab signal generator is on the side of the short hood next to the cab. The location is Harmon, NY, the end of the electrified line out of New York City.



10. NYC 5754 is an interesting affair resplendent in gray body color. The locomotive shows an early version of the torpedo boat Geep, as model railroaders like to call them. The railroad made the modification with long narrow air tanks installed on the roof. The locomotive has an 800-gallon fuel tank sandwiched between two water tanks. I have not been able to identify the purpose of the box between the tanks and the front truck.



11. NYC 5762 is another dual-service GP7 painted gray. The locomotive was delivered from EMD in this configuration.



12. NYC 5906 is a as-delivered dual-service GP9 in gray paint. This is a true classic!



13. Here is a builder's photo of NYC 5915 at EMD's LaGrange, IL, plant. The contrast between the gray body and the black water tank and trucks is obvious in this photo. Note the bright yellow hand rails and grab irons.



14. NYC 5946 is captured in another builder photo. This locomotive was produced in 1958, right after the NYC changed back to the black body color from gray.

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15. Though GP9 6023 looks like it could be gray, it has a black body. It was built and delivered after the 1958 change from gray to a black body.



16. NYC 6040 also has a black body. The angle of light and a coat of road grime makes it appear gray, but it is not. It was built and delivered after the 1958 change back to black paint. Note the newer arrangement of water and fuel tanks. This is different from earlier variations as found on the dual-service GP7s.

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17. (Above, upper right) These photos leave no doubt that NYC GP9s were painted in both gray and black paint.



18. This is Pittsburgh & Lake Erie 5737. The body is painted in Pacemaker Green, a color very much like Pullman Green. It is obviously a dual-service GP7. Note the steam generator stack and vent on the short hood. Until the 1960s, P&LE diesels were painted with this green color. Note the word SYSTEM in the railroad name and the P&LE marks on the cab under the engine number. This was the lettering practice for most of the NYC subsidiary railroads.

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19. P&E 5616 is a black freight locomotive equipped with the small 800-gallon fuel tank. Note that the horn on the side of the short hood is in its original location. The horn on the long hood is on the roof at the end of the hood. The side skirts have been removed to make maintenance easier.



20. Here is P&E 5622, another freight GP7. The P&E only rostered GP7s. The location is off-line at Sharonville Yard in Cincinnati, Ohio.

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21. Here is Cleveland Union Terminal (CUT) 5900. The locomotive was delivered in black paint and shows the typical torpedo tube of a dual service GP9.



22. GP7 5747 is a freight locomotive with a 1600-gallon fuel tank, and bell mounted on the hood end. The lightning stripe paint scheme is gone, replaced by the "cigar band" paint scheme with black body and contrasting white sill stripe.



23. This color photo shows the bland cigar band paint scheme. This GP7 also has the 1600-gallon fuel tank.



24. This is the final NYC paint scheme before the merger with the Pennsylvania Railroad to create the Penn Central. This is as simple as you can get for a paint and lettering scheme.

MODELING NYC GP7 DIESELS

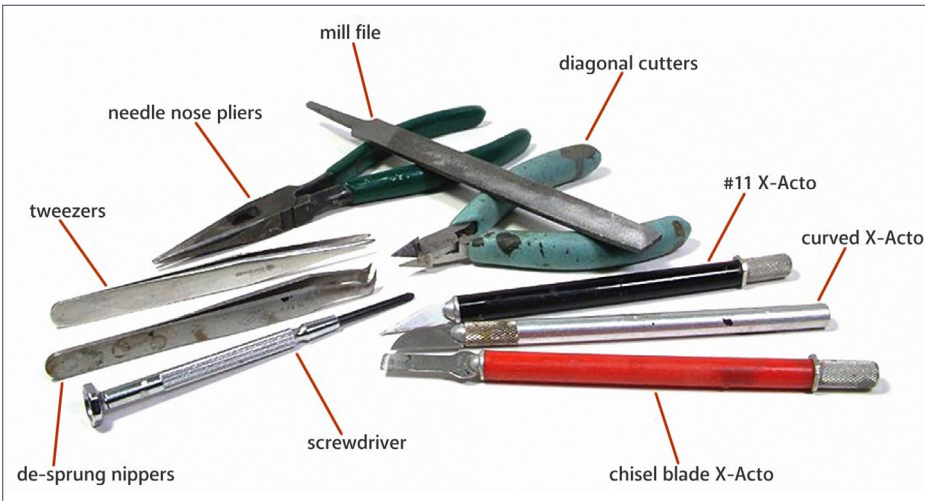


25. Here's my Peoria and Eastern dual-service GP7. This is a Proto 2000 model that has been detailed, repainted, lettered, and weathered. Extra details include installing the steam generation equipment (deactivated) and the water tanks converted for fuel. The caboose is a Trix NYC 19000-series caboose.

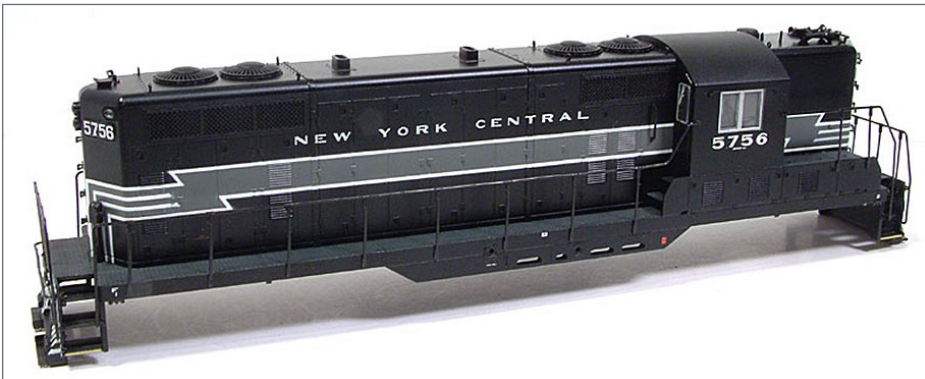
MODELING NYC GP7 DIESELS

Athearn, Atlas, Bachmann, and Proto2000 have all offered nice HO scale GP7 models. I worked with Athearn to get the paint and details right on their Genesis NYC Geeps. The models featured here are Proto 2000 models that pre-date the Genesis models. However, the detail work done to these models can be applied to any HO scale GP7 model, including the Athearn Genesis models. I added much more detail than the manufacturers could afford to. Let's get started.

EARLY NYC GEEPS | 17



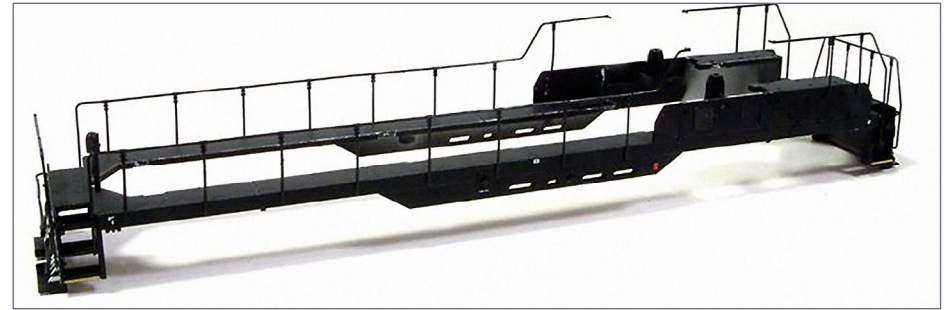
26. I used a variety of basic hand tools to build the models featured here. These should be found in every modeler's toolbox.



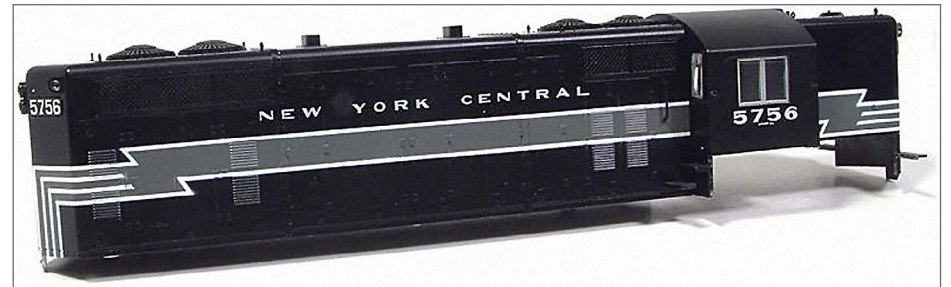
27. Here's a look at a factory painted and detailed Proto2000 GP9 body. For most people this model is good enough. I wanted the model to reflect NYC prototypes and decided to work towards a contest-quality unit.

★★★★★
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EARLY NYC GEEPS | 18



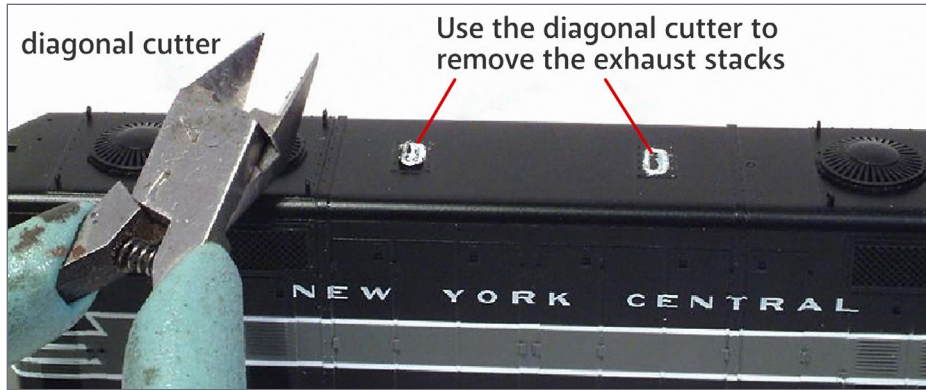
28. The walkway is a separate section and easily removed from the body.



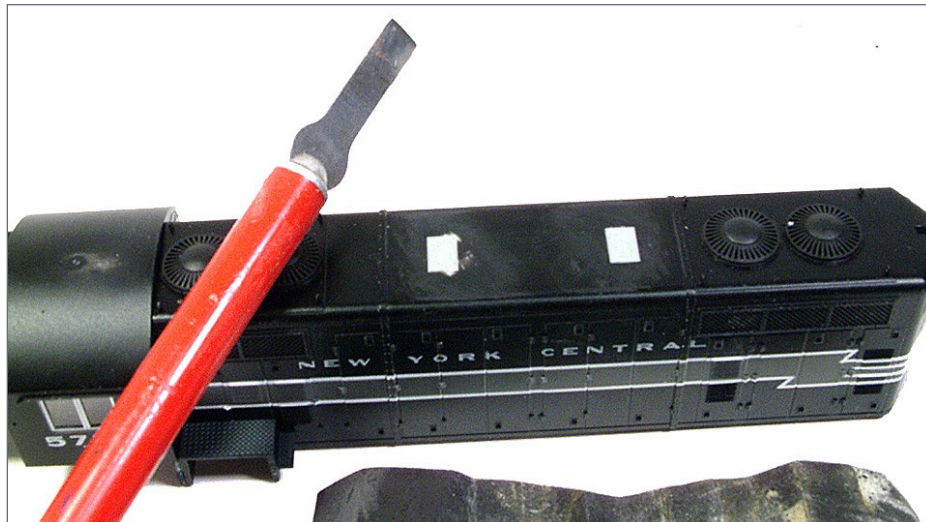
29. Here's the loco body after I removed the walkways. I was very careful in separating the walkway casting from the body. It is very easy to break the steps on each side of the short hood.



REMOVING DETAILS



30. I used a pair of diagonal cutters to remove off the cast-on exhaust stacks.



31. I used an X-Acto chisel blade to finish removing the exhaust stack details. The X-Acto blade can be used to scrape the surface flat before finishing with 800-grit wet/dry sand paper to smooth the roof surface.

INSTALLING NEW DETAILS

I added several new detail parts to make this model follow the prototype.

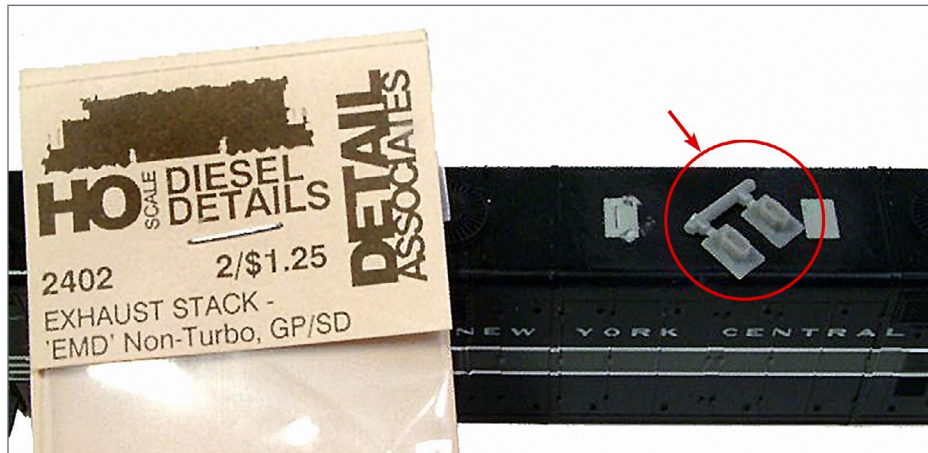
- Detail Associates 2402 exhaust stacks
- Detail Associates 3002 sand fill hatch
- Detail Associates MU hose pockets/Detail Associates 2208 Footboards
- Detail Associates 1507 MU receptacles
- Detail Associates 2203 nut-bolt-washer
- Detail Associates 2202 17" drop grab irons
- Details West 294 cast metal MU hoses
- Details West SL-172 engine & caboose step lights
- Details West 118 steam generator set
- Details West AP-242 air tank detail
- Detail Associates 1401 drop steps
- Cal Scale 190-423 HO Nathan diesel air horn
- Mike Rose Hobbies custom cast resin bumper parts
- Mike Rose Hobbies ATS shoe
- Custom Finishing G-208 ATS system signal generator

A few additional materials were used on these projects.

- Tamiya 6mm masking tape
- ModelFlex NYC Dark Gray acrylic paint
- Microscale white safety stripes decal set 87-618
- 0.010" and 0.012" diameter brass rod
- 0.093" Evergreen white plastic rod



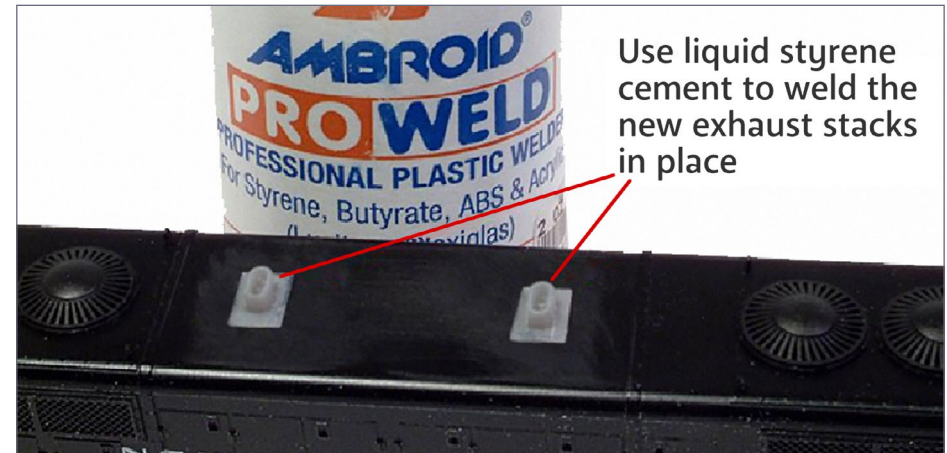
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32. Detail Associates 2402 exhaust stacks will be installed where the cast-on stacks were removed.



33. I sand the base of the Detail Associates stacks as they are a bit thick as molded.



34. Glue the stacks to the filed-down spots on the hood.



We're always looking for more articles and videos. We do pay for articles and videos, too!

PREP FOR NEW PAINT



Scrape the loco number from the cab side

35. The locomotive number can be removed by scraping with a sharp knife. I use a curved-side blade and make several light strokes on each number to minimize damage to the painted surface. This process is repeated to remove the road name lettering.

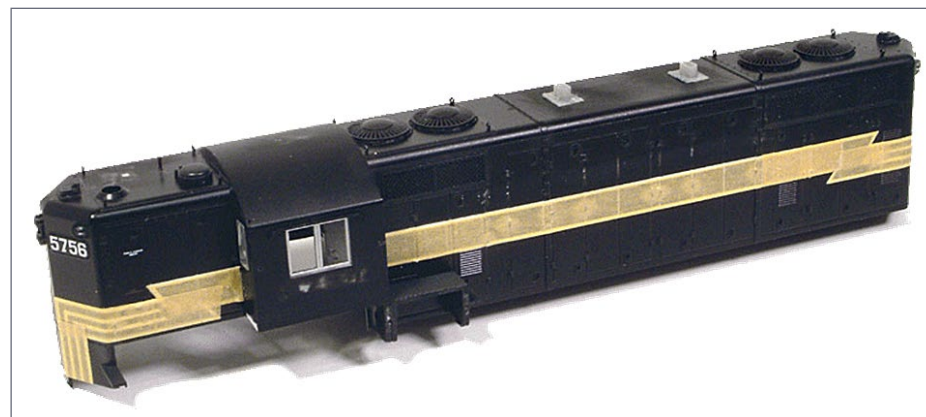


Railroad name and loco number have been removed by careful scraping and sanding

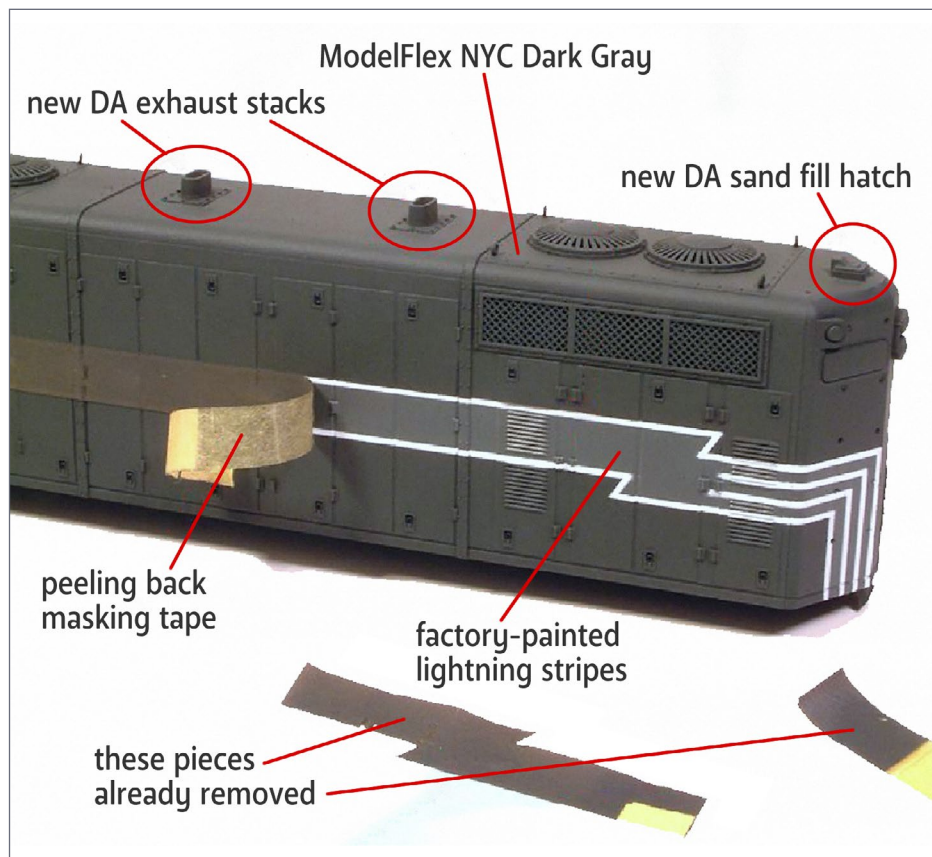
36. With the road name and loco numbers removed, I mask the lightning stripes in order to repaint the body with NYC Dark Gray paint.



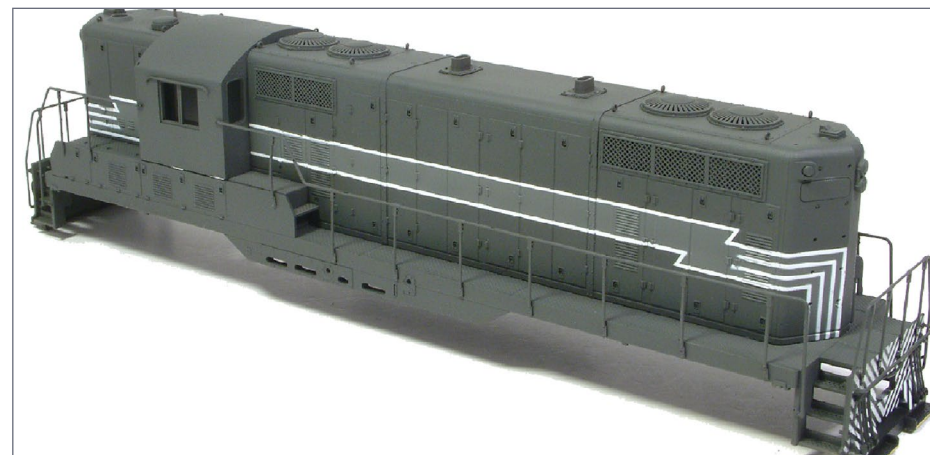
37. The Tamiya 6mm masking tape is the exact same width as the stripes on the Proto2000 body.



38. I've masked the body shell and it's ready to be painted with Model Flex NYC Dark Gray acrylic paint. Note I applied the masking tape directly onto the lightning stripes. Some friends suggested using the Microscale NYC decal stripes, but the gray does not seem right to my eye. The Proto 2000 gray appears to be a better match.



39. I let the paint dry for a couple of days before peeling back the tape mask.



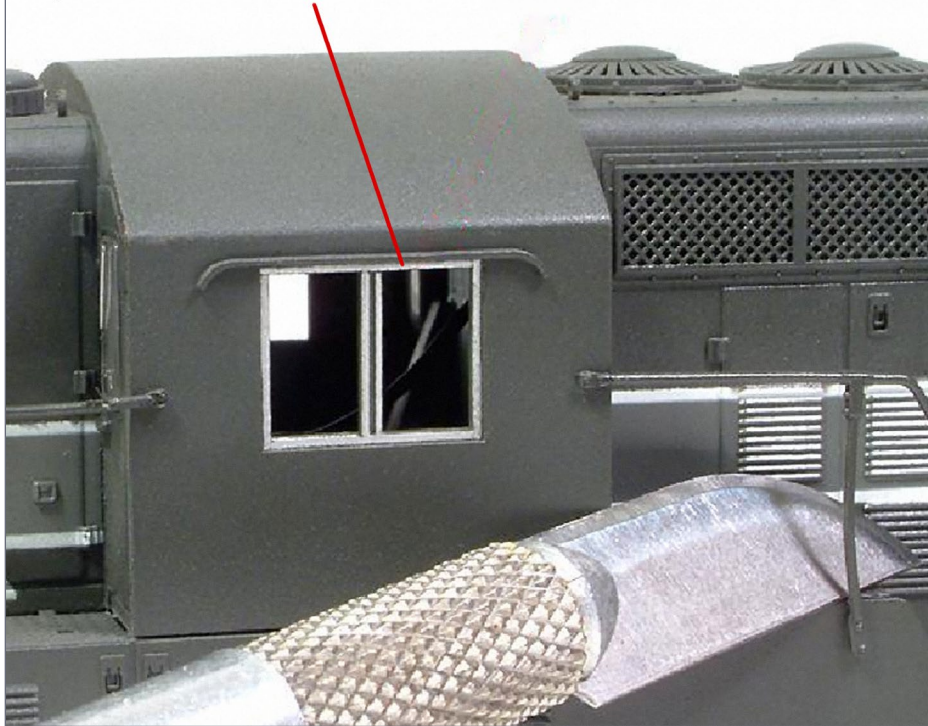
40. Here's what we see after unmasking the repainted model.

Please tell your buddies about Running Extra ...

WE RELY ON WORD-OF-MOUTH TO GROW AND A BIGGER CIRCULATION MEANS WE'RE MORE LIKELY TO STICK AROUND FOR A LONG TIME TO COME!

REMOVING PAINT ON SMALL DETAILS

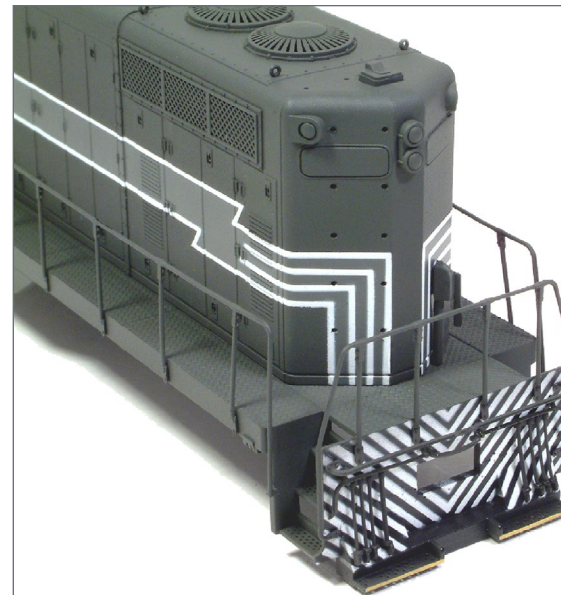
The curved X-Acto knife was used to scrape the gray paint off the window frames



41. (Lower left, and above) The cab side window frames were lightly scraped with a curved X-Acto knife to remove the gray paint. This works well and is a lot less work than trying to mask the window openings.



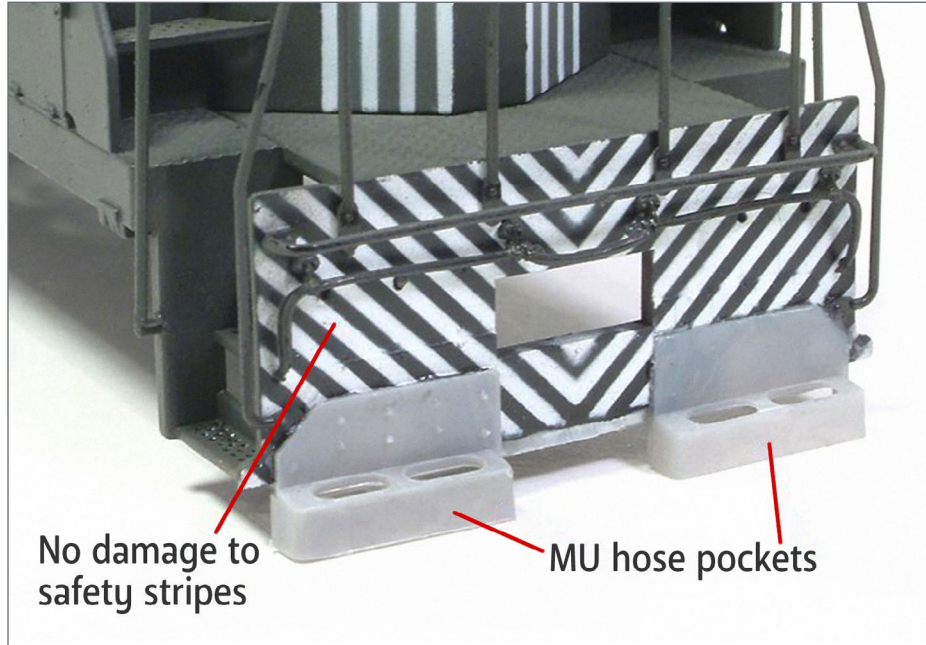
42. I was unable to remove the cab end window glass without breaking the window inserts, so it was covered in gray paint. Cleaning the paint was as simple. I cut one end of a cotton swab and dipped it in decal setting fluid. The wet shaft of the cotton swab was used to clean the paint off the window glass.



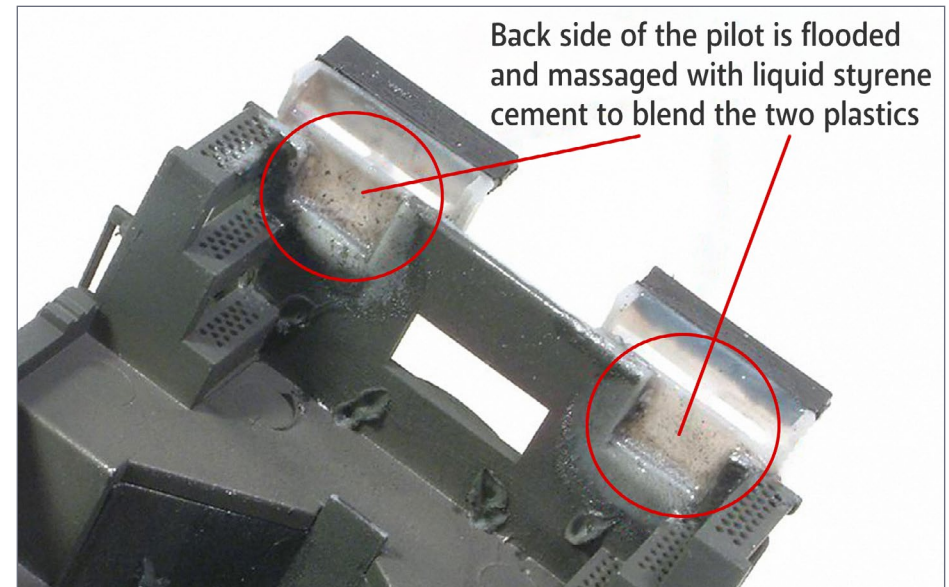
43. Here's a view of the end. The paint needs to be cleaned off the headlights, number boards, and class lights. I dipped a cotton swab shaft in decal set fluid and twirled it to remove the new paint. Test your paint brand for the effectiveness of this technique before spraying the model shell.

INSTALLING PILOT DETAILS AFTER REPAINTING

I added several commercial detail parts to the end sills (pilots) and the trucks of the locomotive. Some details were not commercially available so I had parts custom cast in resin for this project. The custom cast resin parts are available from Mike Rose Hobbies.



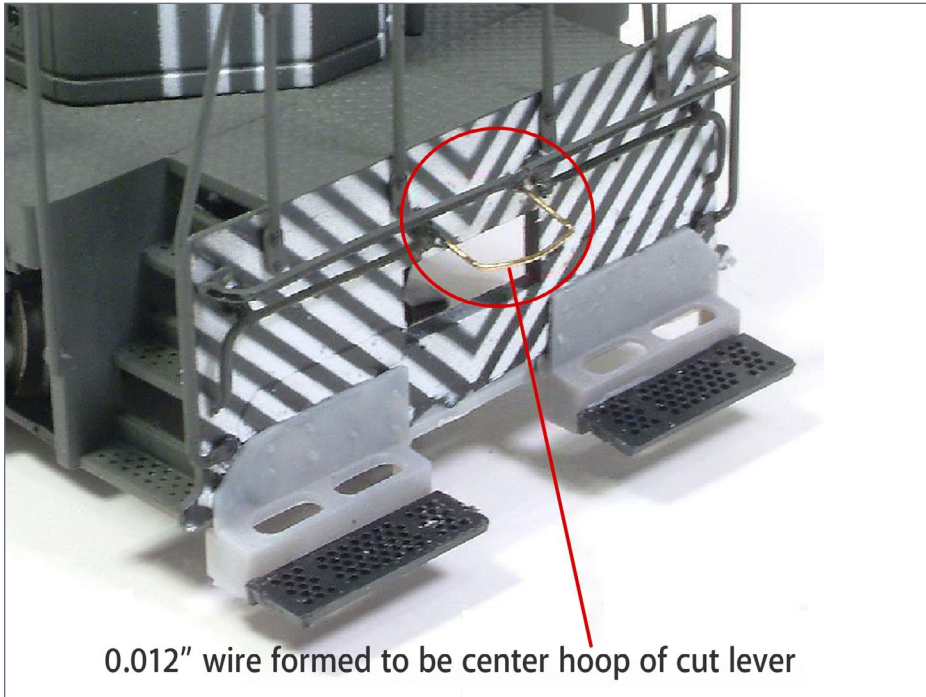
44. I installed Detail Associates MU hose pockets and brush painted them with Model Flex NYC Dark Gray.



45. I applied a generous amount of liquid styrene cement to ensure the MU hose pockets stay on the model.

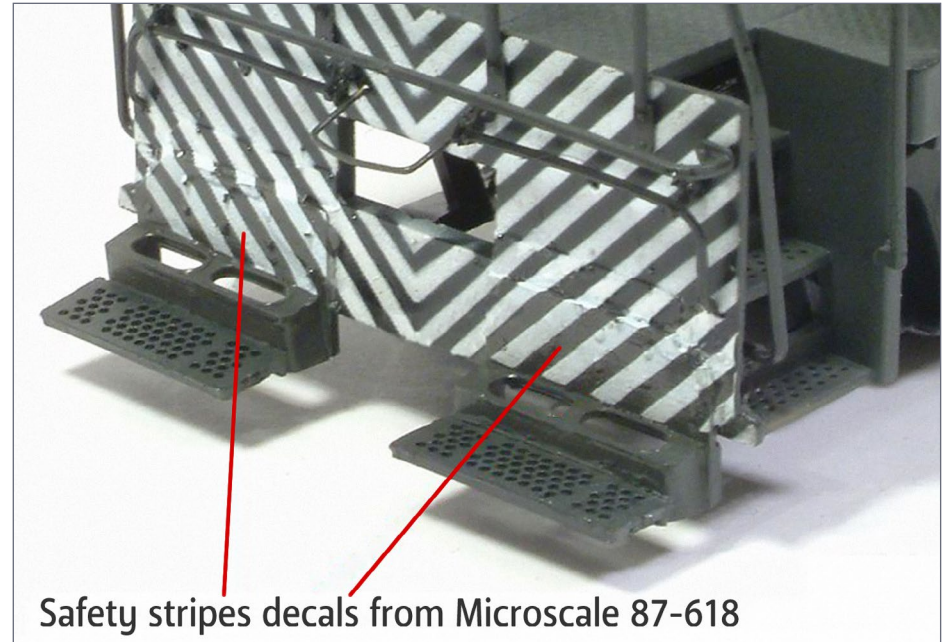
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0.012" wire formed to be center hoop of cut lever

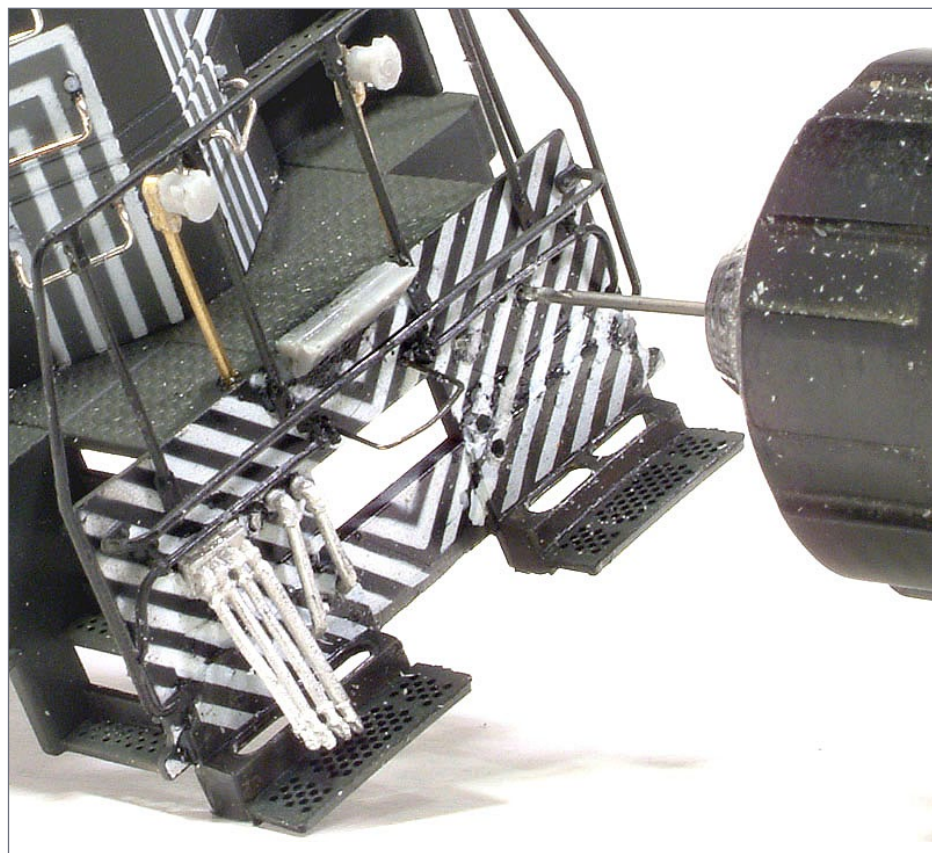
46. The center hoop of the Proto 2000 coupler cut lever does not come out far enough from the pilot face. I removed the hoop and replaced it with 0.012" diameter brass rod formed to size. Two mounting holes were drilled in the pilot face and the hoop was secured in the holes with super glue from the back side. The Detail Associates footboards were cemented in place on the MU hose pockets.



Safety stripes decals from Microscale 87-618

47. The white safety stripes need to cover the end plates above the MU hose pockets. New stripes were cut to fit from Microscale decal set 87-618. After a soak, the decals were aligned in place with decal setting solution applied to make them snuggle down. I used a small paint brush to touch up where the decal stripes met the painted-on stripes. This was tedious work, but not impossible.

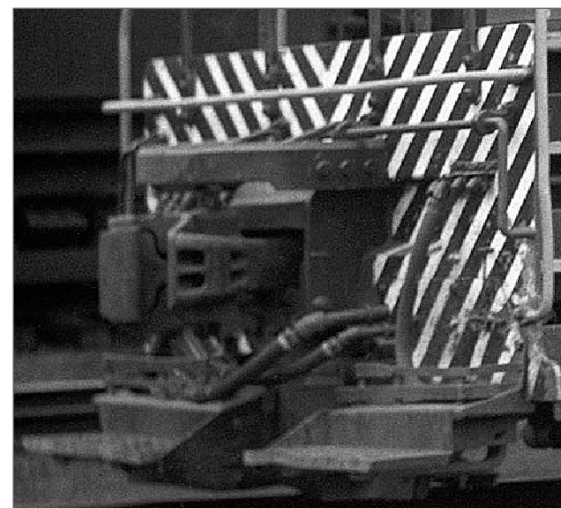
I'm always concerned with detail items being broken off my models. They are layout models intended to be used. I install the details to be firmly secured in place. The detail parts are drilled to accept a pin for installation on the model. Super glue locks them into place.



48. Here's my process installing the Details West cast metal MU hoses. I'm drilling a mounting hole on the pilot for the cast-on pin on the back of the detail part. The MU receptacles on the walkway are Detail Associates parts attached to old Kemtron brass hand rail stanchions.



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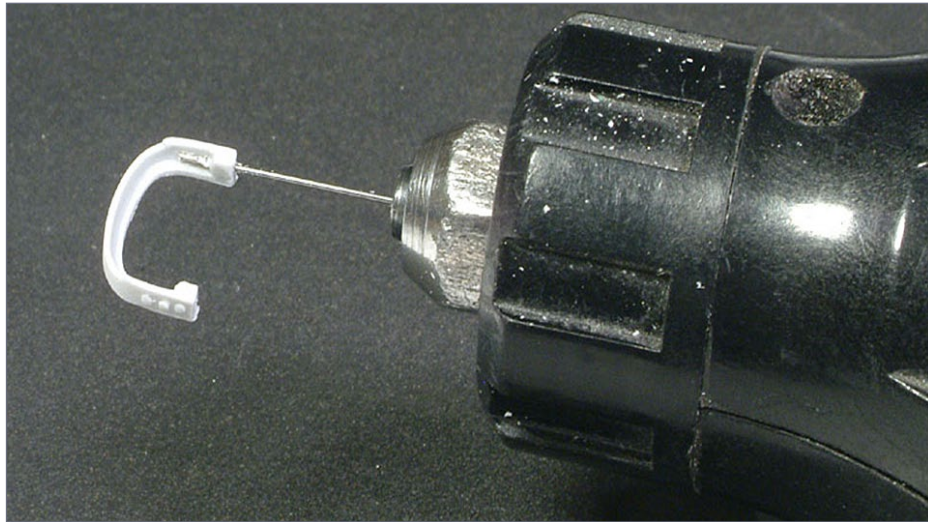


49. Here's the bumper located above the coupler. The hardware appears on both freight and passenger service GP7 locomotives on the New York Central. The photo illustrates the locomotive pilot detail. Both ends are detailed identically.



50. The bumper detail part has never been offered. Mike Rose and I had them custom cast in resin. They are available from Mike Rose Hobbies.

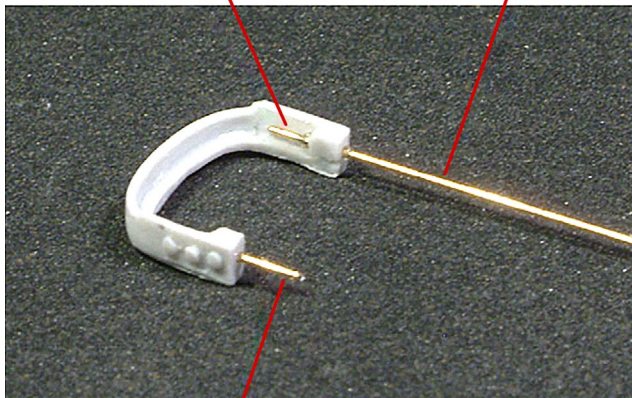




51. As with other parts, the bumpers are drilled for mounting pins. I find this essential if you plan to use models on an operating layout. Handling and uncoupling might cause damage and part loss without the mounting pins.

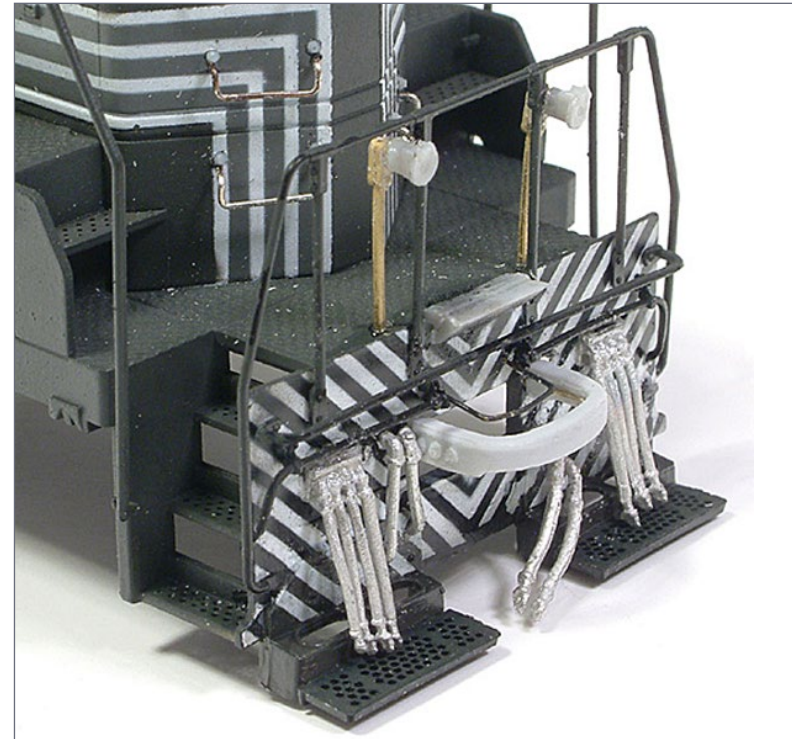
Puddle super glue here

0.012" brass wire



Cut off brass wire to approximately this length

52. I cut the pins short, as seen in this photo. Once installed on the pilot, I apply a generous amount of super glue on the inside face of the model to secure the parts.



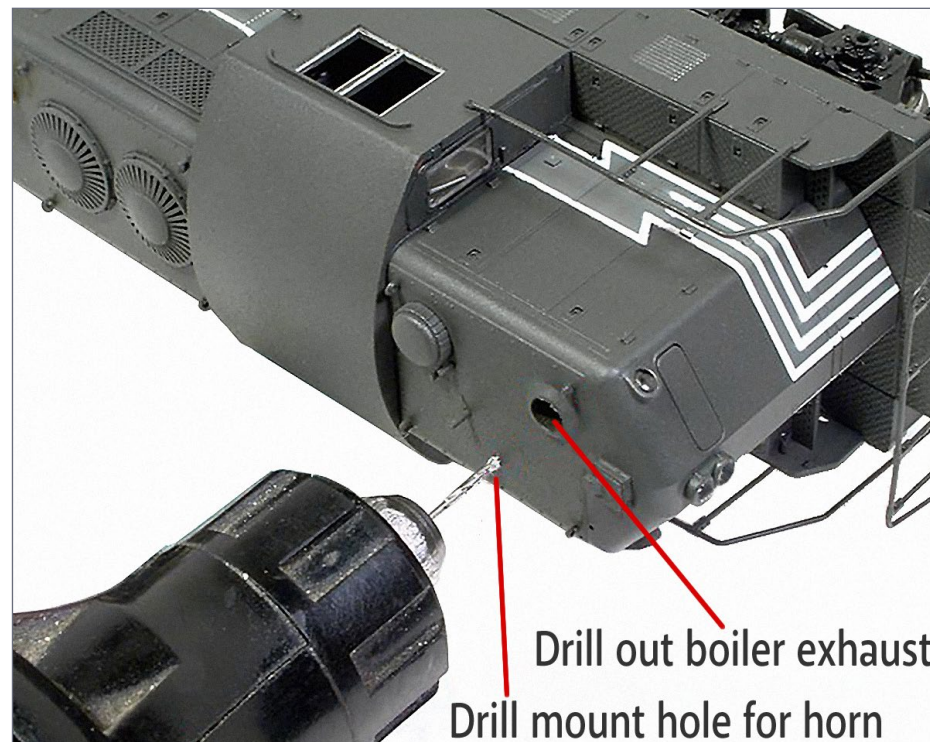
53. Here's a look at the complete pilot detail on the locomotive. Detail includes:

- Bumper
- MU hoses
- Drop step mount
- Two hoses for dual service
- Piping for dual service
- Two MU receptacles
- MU hose pockets
- Pilot foot boards
- Upgraded coupler cut lever

Also visible are formed wire grab irons on the hood end with nut-bolt-washer castings above each grab.

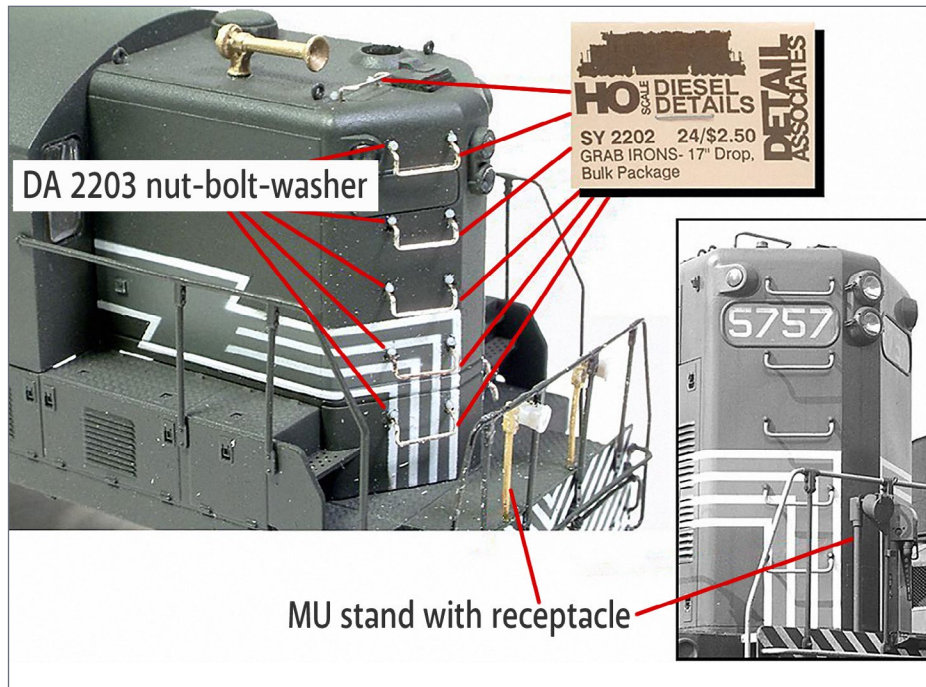


54. Here's the fully-detailed pilot, with MU stands, bumper, MU cables, and resin-cast footboards. Both ends are the same.

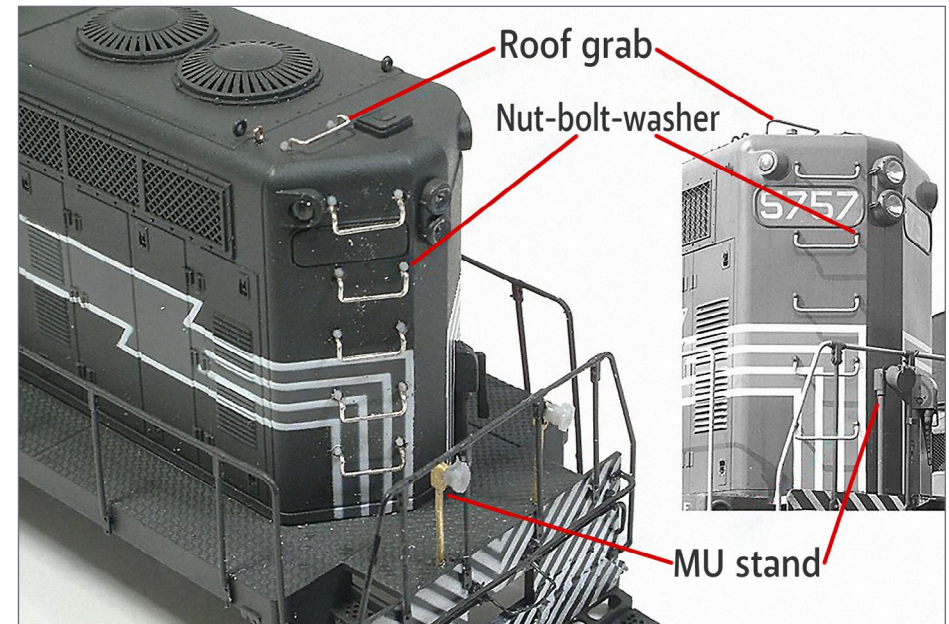


55. After detailing the pilots, I focused on roof details. I drilled a few holes on the short hood roof to install the horn and steam boiler exhaust stack.





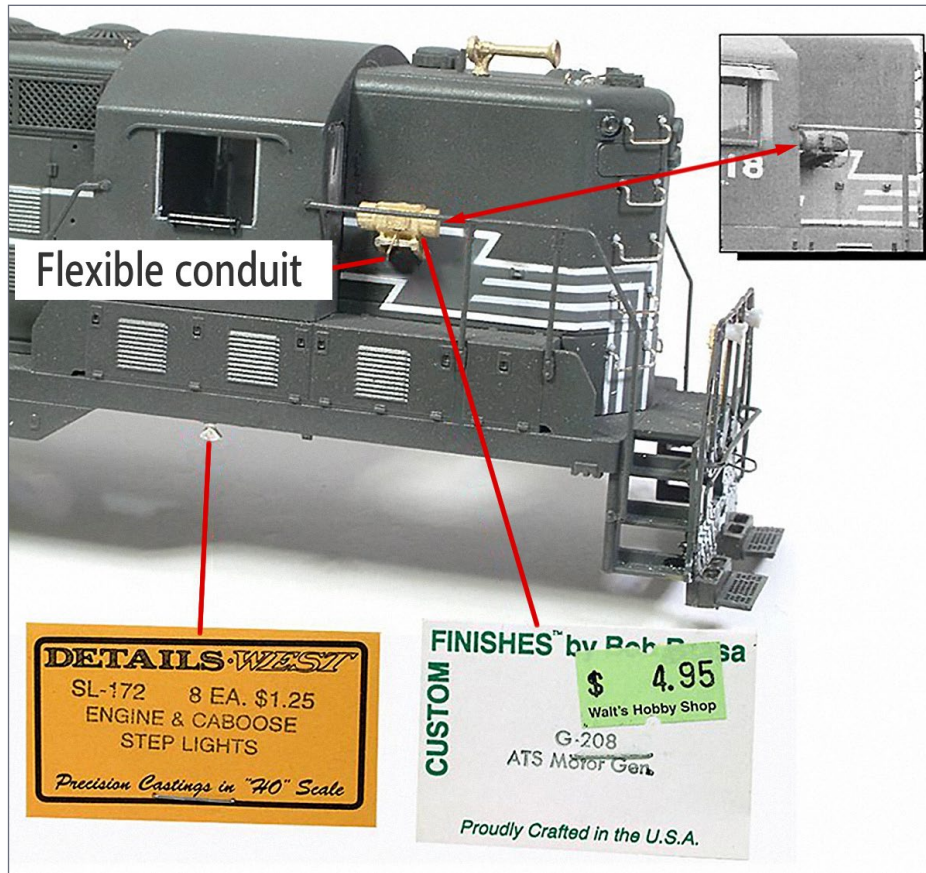
56. Here's a look at the horn installation and the grab irons with the nut-bolt-washer castings. I removed all the Proto 2000 plastic grab irons and tossed them into the trash. The horn is a Cal Scale 190-423 Nathan casting.



57. Of course, there are grab iron ladders on both ends of the model. Here's a look at the parts installation compared to the prototype. Don't forget to install the grab irons on top of the hood.

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

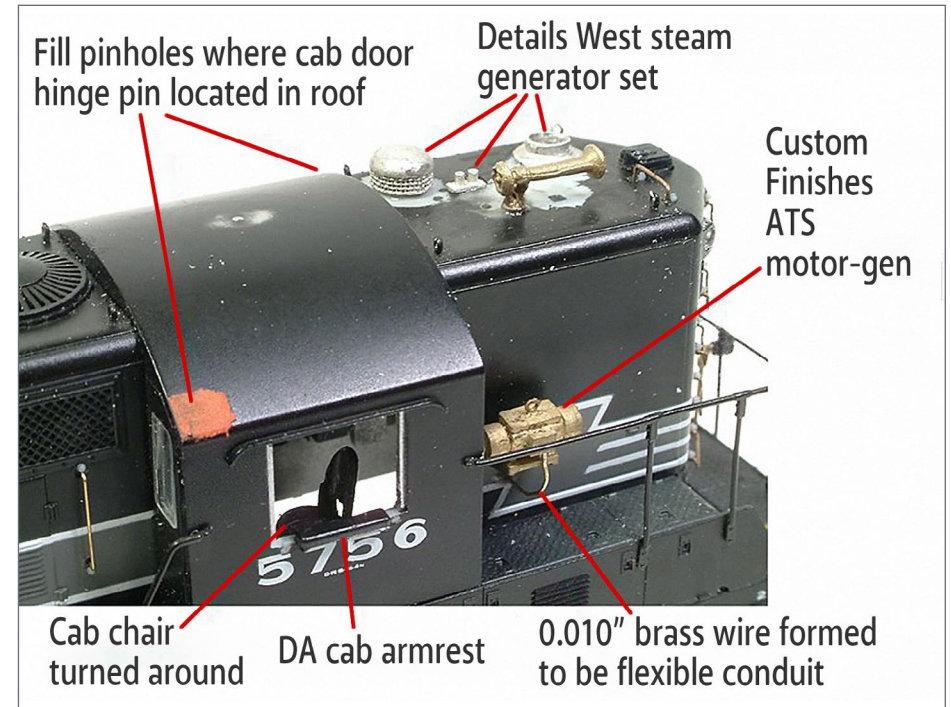
CLICK TO FIND OUT MORE



58. A couple details need to be added near the cab. An ATS system signal generator is a visible part that powers the Automatic Train Stop system that was installed on most New York Central locomotives. Few of the NYC subsidiary roads had this feature.

I also added the small light fixture located in the bottom of the side sill directly below the cab side window. This light was used to illuminate the ground below the cab and was found on both sides of the locomotive.

★★★★★
RATE THIS ARTICLE



59. I worked on a few NYC GP7 upgrades. This one has a black body whereas the other has the NYC Dark Gray body. Both have the classic lightning stripes.

And the detailing continues! The cab doors on the early Proto 2000 models use a steel pin for the door hinge so that they can be opened and closed. I pulled the pins and cemented the doors in place closed. This left holes in the roof where the steel pins were pressed into place. I use automotive spot glazing putty to fill these holes. This putty has a fine grain that results in a smoother finish than most model finishing putty. After it hardens, file and sand the areas smooth. Note the vertical grab iron on the hood side to the left of the cab in photo 68.

Another consideration is that the New York Central GP7 and GP9 locomotives were set up with the long hood as forward. I had to remove and reverse the cab seat directions. Install a crew if you like.

DUAL-SERVICE LOCOMOTIVE DETAILS

I prepared two dual-service GP7s for this project. For any NYC dual-service GP7s there were two 400-gallon water tanks that sandwiched the 800-gallon fuel tank. The sides of the water tanks were vertical and not rounded like the fuel tank of the Proto 2000 model. I modified the fuel tank to represent the prototype



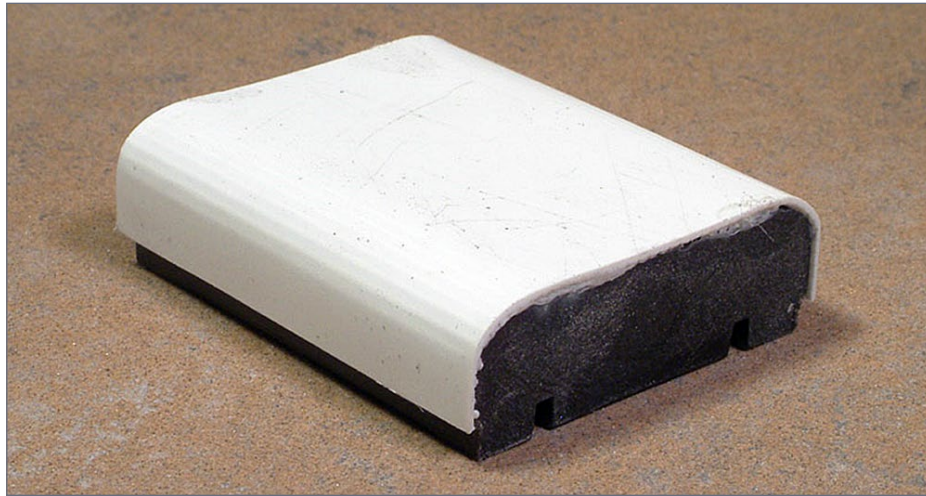
60. The fuel tank and air tanks are one casting and held in place with two-sided adhesive tape. It can be easily pried off. Once the part is removed, I used a razor saw to cut the air tanks from the fuel tank.



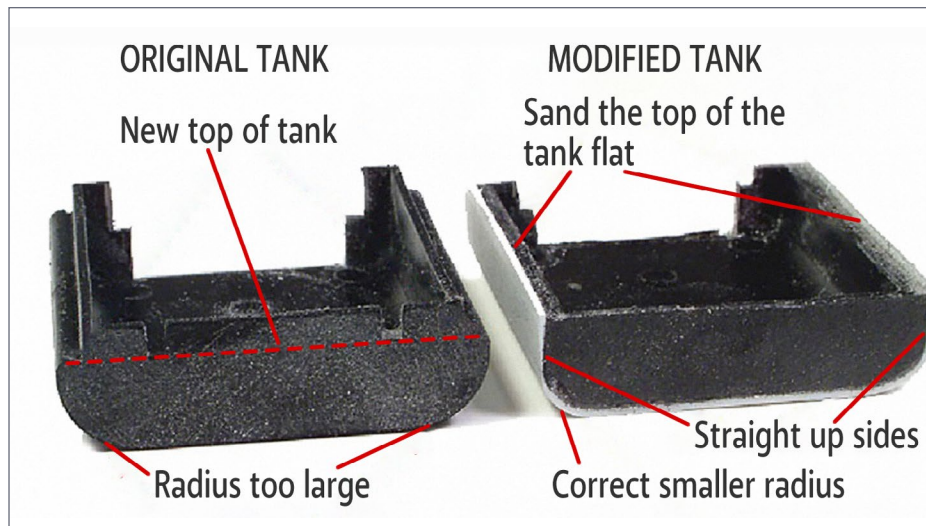
61. I flatten both ends of the fuel tank by sanding it on a sheet of 220-grit sand paper face up on a flat surface. This trues the end faces and makes a good surface for cementing the air tanks back in place after modifying the fuel tank.



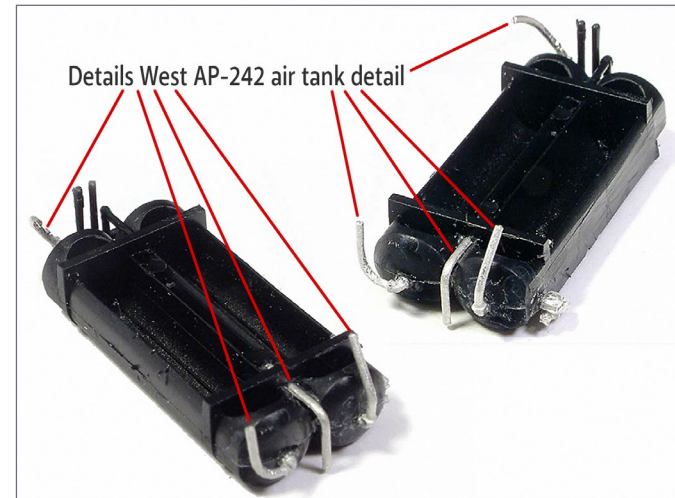
62. I sanded the sides of the fuel tank flat using 220-grit sand paper. With the sides flat, I cemented a sheet of Evergreen styrene to one side.



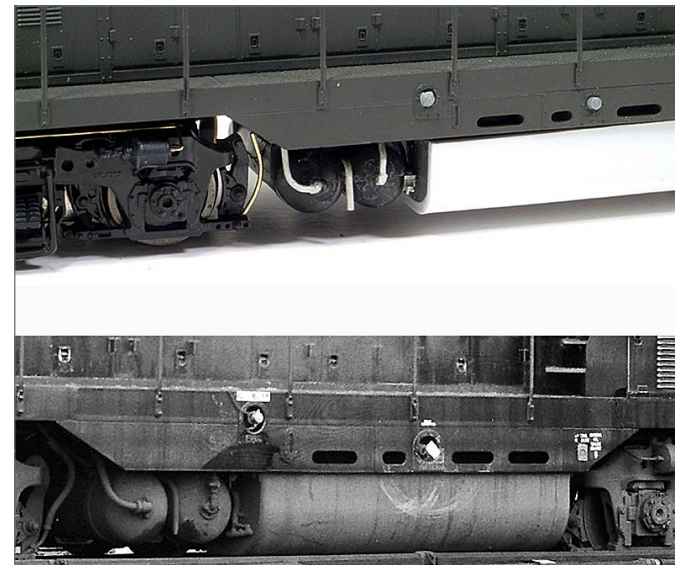
63. Once the cement dried, I wrapped the styrene around the tank and applied cement while wrapping it. The fuel tank ends were sanded again to flatten the styrene to the end of the tank. Automotive spot glazing putty can be used to make it smooth.



64. The top of the fuel tank also needs to be smoothed.



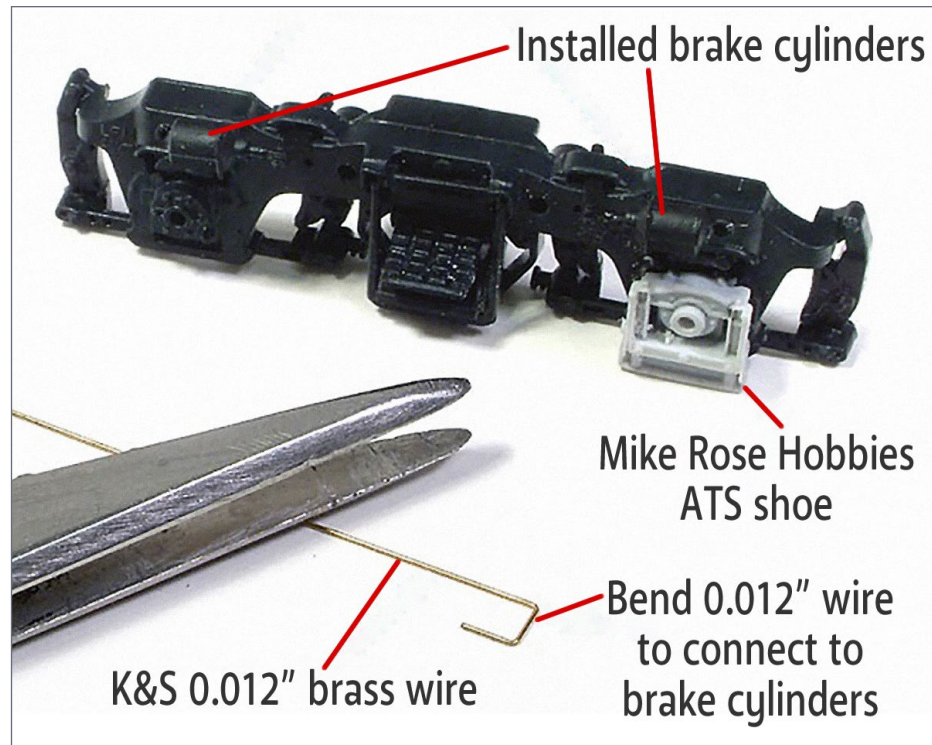
65. I installed Details West air tank detail parts on each end of the air tank casting.



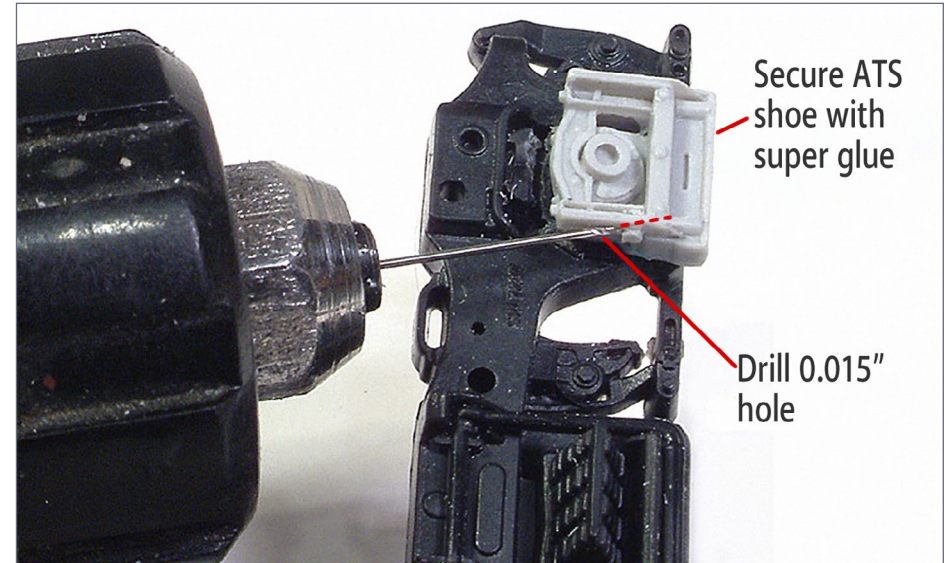
66. Here's a comparison between the model and prototype after the fuel/water/air tank assembly has been reinstalled. The fuel and water fillers are installed, too. The lower filler to the right is for the fuel tank. The higher filler to the left is the water tank filler. You can also see the plumbing at the air tanks.

LOCOMOTIVE TRUCK DETAILS

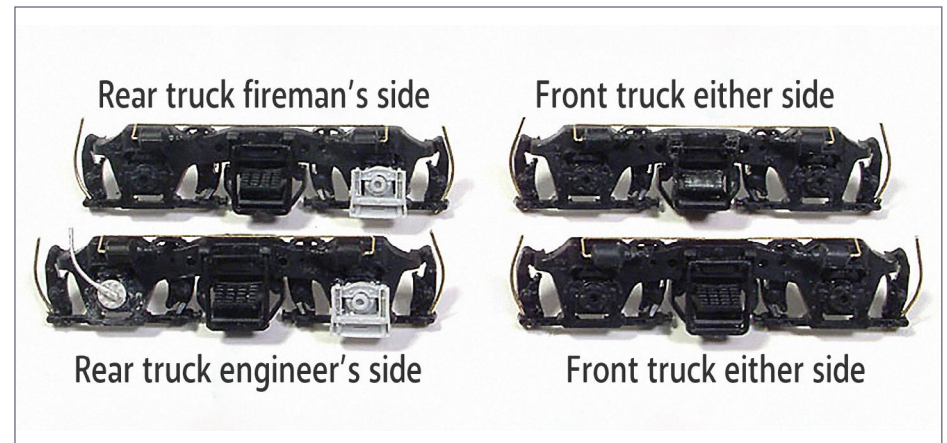
I found there were several details to install on the trucks and the truck side frames are not all detailed the same. Some details need to be installed in specific locations. Again, keep in mind that the long hood of the NYC GP9 locomotives is the front and the short hood is the rear. This is important as we locate the specific truck side frames.



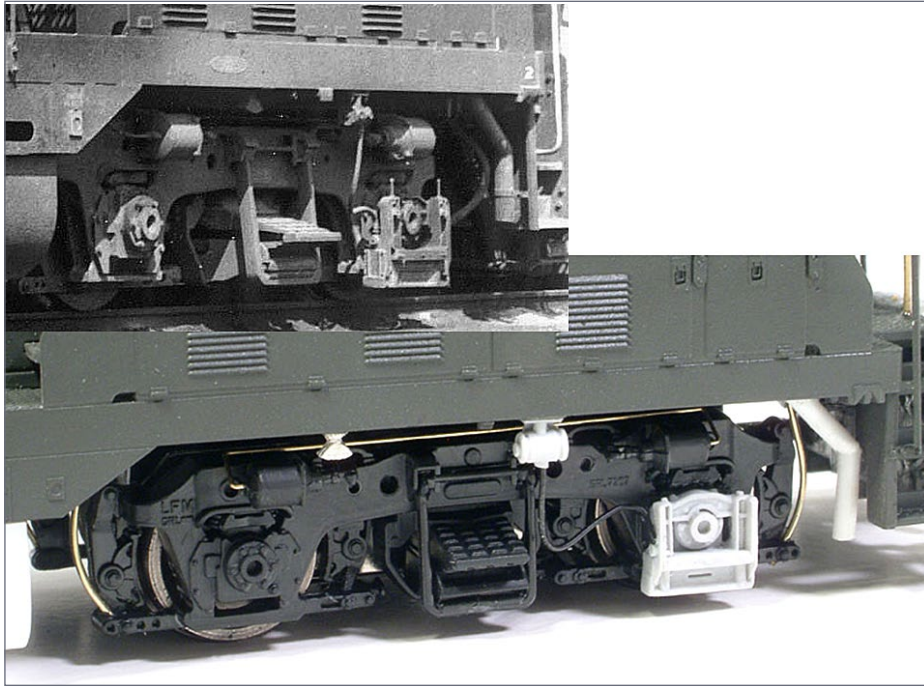
67. Brass rod is used to connect the brake cylinders. A few bends and test fitting wrap up the installation. If you plan to detail a fleet of GP locos, a jig will ease this work. Also, I needed to remove material on the side frame for the ATS shoe to fit. A chisel blade and files will flatten this spot for the detail to sit properly.



68. The ATS shoe connects to a cylinder on the frame so I drilled a hole to accept a flexible wire to make the connection after the side frame is back on the proper truck.

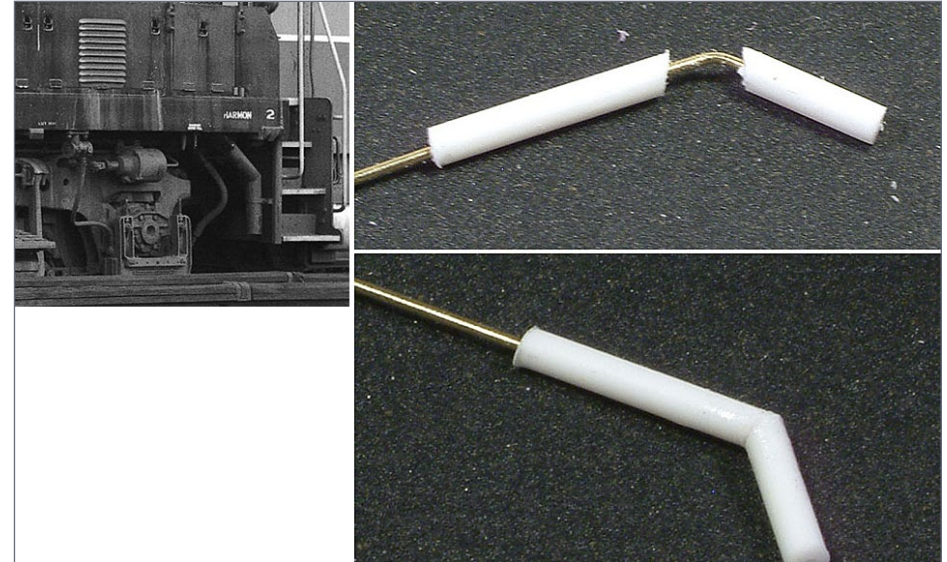


69. Here are the four truck side frames with details installed. Placement is important to follow prototype practice.

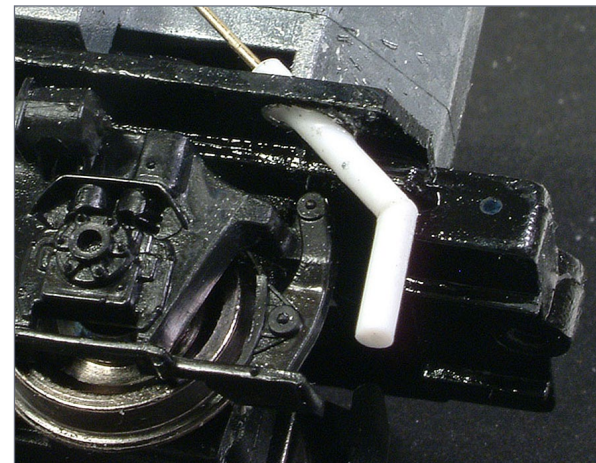


70. Here's the detail on the fireman's side of the locomotive. The cable from the ATS shoe has been installed to connect with a cylinder hanging from the bottom of the frame. This cylinder comes with the Mike Rose Hobbies ATS shoe set.

The somewhat large angled pipe to the right and behind the pilot is an interesting feature. This is the "poop" pipe for the toilet discharge to the track below!



71. The "poop pipe" is made from 0.093" Evergreen white plastic rod, drilled and pinned with 0.020" brass rod.



72. The "poop pipe" is installed on the model frame. A hole was drilled through the metal frame at an angle to fit the pipe. Super glue secures the detail in place. This detail is only found on the fireman's side of the loco.



73. At this point, all details have been installed and I double-checked the work. After the review, I separated the body from the frame and used an airbrush to paint the frame. The detail parts on the body were brush painted.



Please include a phone number when emailing us if you *need* a reply!

(Just in case your spam filters eat our email response ...)



74. Here is my moment of happiness, the completed model of NYC 5758! The dark gray body color with yellow hand railings and grab irons is a classic look. I lightly weathered the model with dark soot sprayed onto the exhaust stacks and the surrounding roof area. The trucks and water tanks were sprayed with a light coat of grime. Water and fuel spills were brush painted onto the sides of the tanks. My goal was to represent this model with a 1954 appearance.

I added light rust on the side sill below the battery box. I applied light weathering since the model represents a prototype only one to two years out of the paint shop. The prototypes in passenger service were kept fairly clean.



EARLY NYC GEEPS | 53



75. As mentioned previously, I upgraded a couple of these models. Here's another dual-service locomotive painted in black NYC 5756. The models are detailed the same but with different body colors. Obviously, the black model called for less work, as I did not have to mask the stripes and paint the gray color. Many of these dual-service GPs worked NYC commuter trains during the week and hauled freight on the weekends. Others were used to pull intercity passenger trains.



76. The P&E GP7 was a dual-service locomotive converted to freight only. The water tanks were converted for fuel providing a 1600-gallon fuel capacity. All P&E GP7s were painted with a black body and had the P&E herald on the side of the cab. They were lettered for the NEW YORK CENTRAL SYSTEM. I applied the same details to all three models except the P&E engine which does not have the ATS system. The Peoria and Eastern was not set up for ATS. Note the modified skirting above the fuel tank.

EARLY NYC GEEPS | 54



77. Adding details to follow specific prototype practices can be a lot of work. This was a serious project to research and build all three models, including the Peoria & Eastern locomotive. I had great fun working through these additions. It's most satisfying to own and operate models that reflect specific prototypes and look like few other models running on other layouts.





78. I took two of the models to Tom Johnson's layout for a photo shoot. The color difference of the Geeps is a nice touch that adds to the realism and documents the history of NYC GP7 diesels. They sure look good with Tom's fall foliage.

A NOTE FROM THE MRH EDITORIAL STAFF

Jim Six's disk with the original digital images crashed and he lost the source records on these photos. Jim had publication agreements on the prototype photos, so that's covered. But if anyone knows the source of the prototype photos, please contact us so we (and Jim) can rebuild the records and update this article with current photo credits. ☑

Jim Six



As with many model railroaders, Jim started in the hobby with a Lionel New York Central train set. He switched to HO-scale in 1958 and has been there ever since, still modeling the NYC.

Between the 1950s and today Jim also modeled the ACL, SAL, SOU, PRR, N&W, and Conrail. Jim's current hobby passion is modeling Sturgis MI set back in 1927. Jim lives with wife Joanne near Millersburg, Indiana in the heart of Amish country.

Jim worked most of his career in the nuclear power industry. He also headed the engineering department of a large manufacturer of cargo trailers. Today Jim is a part-time professor of engineering at Purdue University.

Jim is a well-known author with numerous articles published in the hobby press. In fact, this article is his 300th published about a model railroading subject. ■



RATE THIS ARTICLE



Drop-bridges for your layout

Running Extra | May 2019

CARL BLUM explains Jim Behling's duck-under avoidance method ...

TWENTY YEARS AGO WHEN I STARTED MODEL RAILROADING with Jim Behling, we didn't see the removable duck-under on his layout as a problem. Now we are older and wiser; since Jim's workbench is inside the layout, he was *ducking under* his layout benchwork on a daily basis.

DROP BRIDGES | 2

1. Two trains crossing the gap with the drop-down closed. Carl and Jim call the right end of the drop-down the "Arnold Yard" end, with the left end of the drop-down termed the "Howard" end.

★★★★★
RATE THIS ARTICLE

As time went by and we grew stiffer, he started removing the duck-under section between weekly sessions. It always took some time and fiddling to properly slide the eight HO rail joiners onto the two levels of track before we could run trains.

LET'S BUILD A DROP-DOWN

We started to think about replacing the removable section with a hinged section. We didn't have room for a horizontal swing gate, so we looked at a section that could swing down under the layout.

When entering the room, we call the right end of the drop-down area the "Arnold Yard" end, and we call the left end of the gap the "Howard" end.

The removable section has two tracks with a 3" difference in elevation. To limit alignment issues from the radius of the swing, we selected a spot for the hinge halfway between these two levels.

We used two regular door hinges with removable pins so the whole section could still be removed completely if ever needed. Ordinarily, we just swing the section downward out of the way [2, 18].

We built an offset from 2x6s to support the plywood that forms the bottom of the scenery. At the latch end, we cut a key and socket from plywood for alignment; the wedge has 10° sides that work fine [5].



2a, b. (Left, above) When the bridges are down, they latch in a vertical position. Note the plywood panel and 2x4 anchor – this strip of wood supported by foam rubber holds the bridges in the stored position.



3. A view of the hinges with the bridges up. Note the aluminum angle brackets with slots for adjustments (adjustment only used during assembly).

DROP BRIDGES | 5

We also put four hex-head lag screws at the corners to set the locked height of the section [6]. The plywood is locked by a commercial toggle clamp [7].

We accidentally bumped this clamp open once and the swing section dropped! After this, we drilled a small hole to lock it with a reusable cotter pin. There are also double-locking toggle clamps available that might be nicer.

Either way, the clamp with pin locking gave us a stable platform to build on.

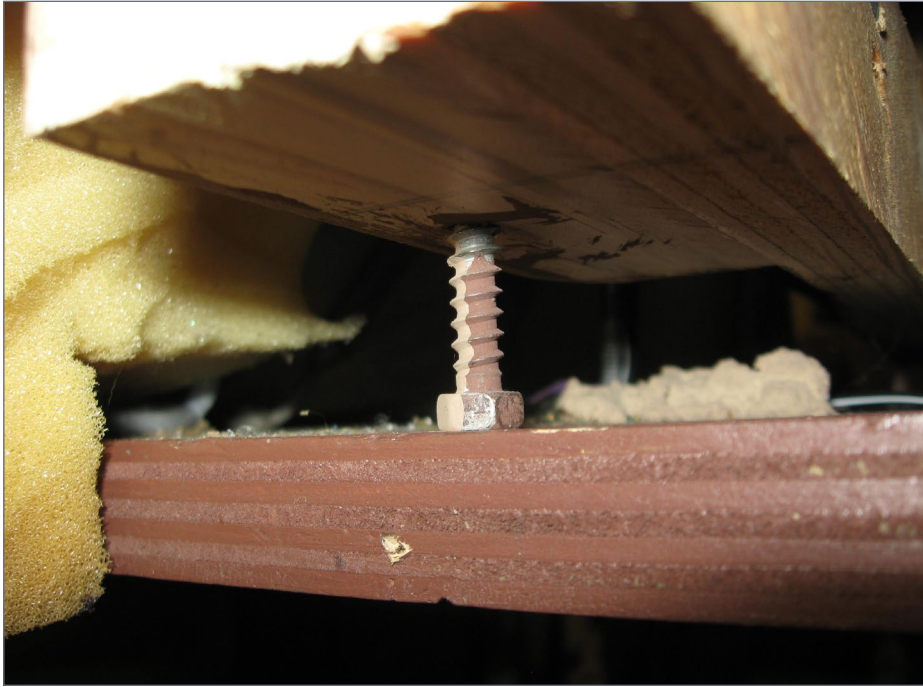


4. This is the top of the hinged section. The 2x6s offset the hinge point closer to the height of the rails on the drop-down.

DROP BRIDGES | 6



5. This view shows the “alignment socket” angled 10° on both sides. The benchwork has a matching angled key that fits into this socket. You can also see three of the adjustable bolts with turnbuckles, surrounded by the foam rubber scenery.

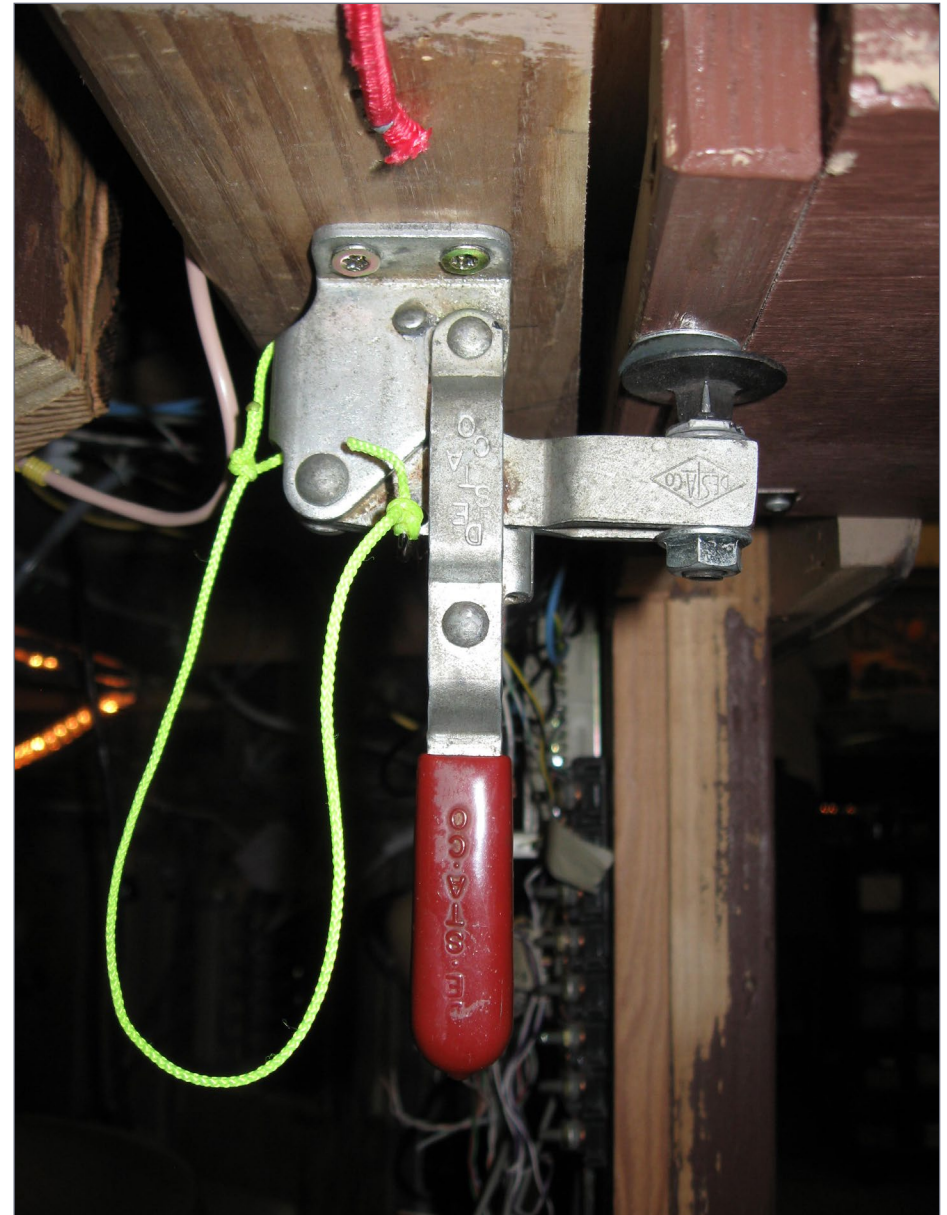


6. A close up of the hex head stop screws. Hex head is nice since you can use an open end wrench to adjust in place.

SOLID TRACK SUPPORT AT THE GAP

We tried putting the track on some aluminum extrusions, but we found the extrusions hard to adjust (see note: Trial and error). We also realized that the two layout tables were also moving around. Even though we could swing the section down and out of the way, we had to manually resort to rail joiners to align the rails on the swing down with the rails on the layout.

To solve the problem of the layout tables moving around, we anchored them to the concrete floor with lag screws and some stout plywood panels [2, 9]. After locating where the panels



7. This is the De-Sta-Co toggle clamp that locks the drop-bridges up. The green string is a keeper for the clamp cotter pin.

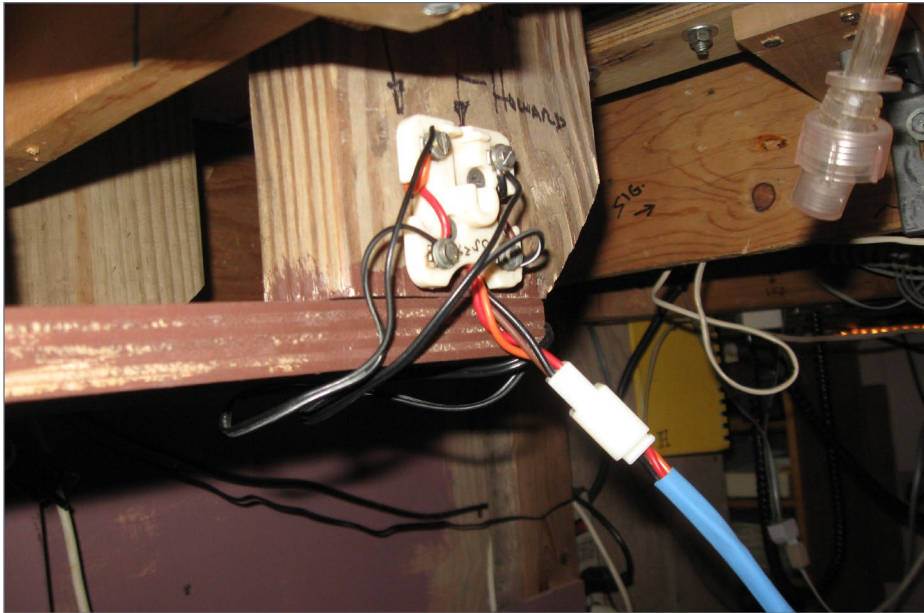
needed to be, we cut through the carpet to allow gluing the 2x4s directly to the concrete.

We drilled holes through the 2x4s and then used a hammer drill to drill into the concrete.

With the concrete coated with Liquid Nails, we used concrete anchors and lag screws to lock the 2x4s to the floor. When the glue dried, we then screwed plywood panels to the 2x4s and to the layout tables above.

GETTING THE TRACK TO AUTO-ALIGN

We felt the swinging platform worked fine, but we had trouble getting the rail joints to align. So we made wedge keys from $\frac{3}{4}$ " PVC plastic for each joint [10-13].



8. A telephone terminal block and a four-conductor plug and socket route track power to the tracks.



9. We cut out the carpet and mounted this 2x4 directly to the concrete floor on the "Arnold Yard" side. Three lag screws with concrete anchors plus Liquid Nails hold this 2x4 stoutly to the concrete. The red X leg is 7-ply plywood. We similarly anchored a 2x4 and plywood panel on the "Howard" side as well [2].



10. Socket Block #4. We cut away the layout Homasote and added plywood to solidly screw this block to. We drilled the holes on the near end so the screws went into the table frame. Below this area, you can see the wood sanded away to provide swing clearance.



11a, b. Key block #4 on the swing bridge going into into the socket block on the layout. The three threaded rods support the key block.



12. Blocks for #3, with the threaded screw and turn-buckle tripod support. In the back is joint #2, still with the failed extruded aluminum track support. See [13] for the replacement tripod support on joint #2.

DROP BRIDGES | 13

We used 10° per side for these wedges. The sockets on the table end were 6" long and screwed to the framework. On the swinging platform we made "tripods" of ¼" threaded rod to support the wedge blocks with turnbuckles for fine adjustment [12]. Note that between the two wedge blocks, we add a strip of 1/8" Plexiglas to support each track.

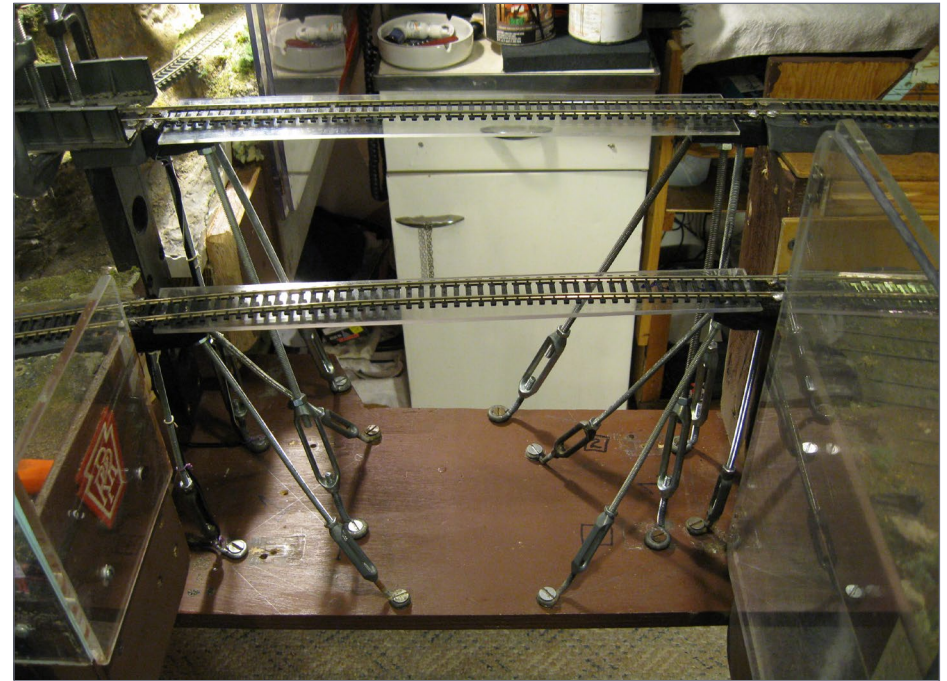
We could adjust each joint independently as needed to raise, lower, and position it.

Having a machine shop to make these pieces was easier, but they could be made with a table saw and a drill press. The opening for



13. Socket block #2 in place on new threaded tripod screw framework. Socket block #3 below has a curved turnout on top. The turnout machine is 6" below the track.

DROP BRIDGES | 14



14. Finished drop-bridge before scenery.

our passage is just 14" so we had trouble with clothes catching on the ends of the fixed rails.

To add these new socket blocks, we started by removing the lower track and its supports. We used ¼" threaded rod from the wedge blocks to the turnbuckles. We bent the left-hand threaded eye bolts that came with the turnbuckles to set them flat on the platform. Then we drilled matching holes in the platform for "T" nuts inset into the wood underneath.

This leaves the bottom of the platform flush so we can still safely duck-under if needed without catching on anything. On the layout tables, we cleared all the old scenery away and cut into the table top for the PVC socket pieces [10].

DROP BRIDGES | 15

We reinforced the track roadbed to have really solid mountings at the joint with the drop-down [13]. Then we fitted the wedge blocks and started checking clearance for the swing [11a, 11b].

An angle grinder fitted with a flap sanding wheel helps when removing material to give extra clearance. It really cuts into the excess wood and still leaves a smooth surface. When we had the wedge blocks swinging into their socket blocks just right, we added the Plexiglas track support between the blocks [14].

Now that had a solid surface on which to mount the track, we cut one continuous piece of flex track to fill the gap.

We felt the plastic ties and “spikes” were too weak to resist much abuse, so we tapped #6-32 holes under each rail end for a flat head



15. The Howard side with the Plexiglas protection door closed.

DROP BRIDGES | 16



16. The yard side with the Plexiglas protection door closed.

screw. We adjusted the screws to just touch the bottoms of the rails and then we soldered them to each rail [10].

Using a track saw, we cut the rails at the joint so the section could drop again. With a little adjustment and filing, we had trains crossing the gap just fine. We wired all the rails to a phone terminal block so we always have dependable power [8].

When the bridges are down, the ends of the table tracks were exposed, so we added Plexiglas doors to protect people and the tracks from each other [15, 16].

We left the supports without scenery for months to make sure everything stayed in alignment. When we were happy, we started

the scenic work. We built bridges to fit and attached them with Velcro to make them removable. We took old foam rubber sofa cushions and carved them to fit around the support tripods [5].

These were cut in several sections for easy removal and then coated with a scenery mix of concrete and latex paint. When the bridges were dropped, they still wanted to hang out into the passage space, so we added a slotted latch piece to hold them completely under the layout table [2].

CONCLUDING THOUGHTS

To see the drop-bridge in operation, check out the video here. It shows:



17. View from Howard toward the "Arnold Yard" with the drop-down up and locked in place for operation.

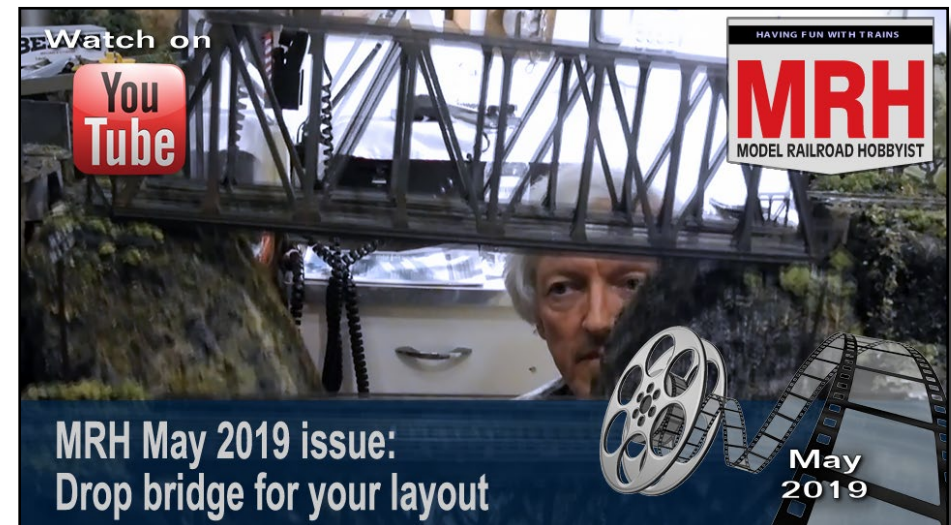
Description	Part Number	Supplier	Web Link
Toggle Clamp	5126A65	McMaster - Carr	https://www.mcmaster.com/#5126A65
Reusable Cotter Pin (Hairpin)	98335A062	McMaster - Carr	https://www.mcmaster.com/#98335A062
Toggle Clamp - Double Locking	51325A43	McMaster - Carr	https://www.mcmaster.com/#51325A43
Turnbuckle	3010T14	McMaster - Carr	https://www.mcmaster.com/#3010T14
Tee Nut Inserts for Wood	90975A057	McMaster - Carr	https://www.mcmaster.com/#90975A057
Brass Flat Head Machine Screw	92480A151	McMaster - Carr	https://www.mcmaster.com/#92480A151
PVC 0.75" x 1.5"	8740K25	McMaster - Carr	https://www.mcmaster.com/#8740K25
Door Hinges	1494A11	McMaster - Carr	https://www.mcmaster.com/#1494A11

Table: Here is a list of the parts we used in this project

- Full view of lift in action.
- Closeup of lift in action.
- Closeup of wedge joints.
- Toggle clamp in action.

Jim's drop-bridges have been serving well for years; here are the points that made them possible:

- Solid layout table work at the gap from the floor up.
- Adjustable stops and alignment key for the drop-down platform.



Video: Demo of the drop-bridge in action.



18. Entering the layout space with the drop-down open. You can see the drop-down stowed under the layout to the right, with the Howard end visible on the layout above.



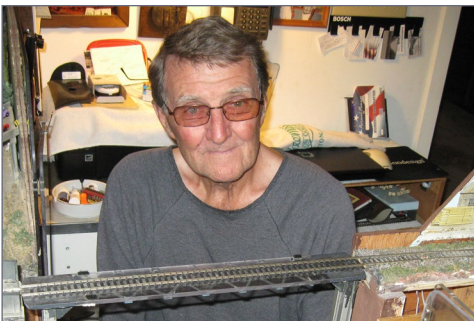
19. Same view as [18], but with the drop-down up and locked in place for operation.

- Wedge and socket joints at each track gap.
- Adjustable threaded rod and turnbuckle tripods for track end positioning.
- Tough but flexible removable scenery for maintenance.

We hope our story gives you some good ideas for building a dependable access gate on your railroad. ✓



JIM BEHLING



Jim Behling served on the US Navy Ice Breaker USS Atka before working for the Bell System. He retired early to spend more time playing golf, softball, and of course building his train layout, The Carolina & Eastern Railroad. He lives

with his wife Jean and has two daughters. ■

CARL BLUM



Carl Blum's first trains were a Marx windup and a wooden train built by his father. At age 5 a Lionel set arrived under the Christmas tree with extra track and turnouts.

After a while, HO scale looked better, so the Lionel got traded for HO trains. After a long break for college and work,

seeing some kids playing with Lionel trains renewed Carl's interest in trains.

Carl built a modular layout for display at train shows and also just for fun. About this time he met Jim Behling and started operating on his Carolina & Eastern RR. Jim and Carl have worked together on both their model railroads ever since.

Carl was trained as a Tool & Die Maker, and finished his career at Bosch Charleston as a Mechanical Engineer. He retired early and likes to travel and dance with his wife, Jamie. When home, he works on various projects such as his Misery & Short Life Railroad. ■



The Little Brick Garage

Running Extra | May 2019

HELMUT WARBOLD upgrades an inexpensive plastic HO scale brick garage ...

I WANTED TO CREATE A BACKGROUND MODEL OF AN abandoned building, possibly behind another structure, or one that Mother Nature is trying to reclaim. I found a candidate at a flea market, and was able to acquire the assembled building for \$2.00 versus the \$3.00 price tag!

THE LITTLE BRICK GARAGE | 2

1. A simple kit structure, ready for an upgrade.

★★★★★
RATE THIS ARTICLE

The manufacturer of this little garage gem is unknown, but it has been part of several kits produced by Tyco, Model Power, and AHM over the decades. It is a plain-Jane affair, with an abundance of glue from the original construction.

START WITH SOME TLC

I prepared the model by removing the roof and vigorously washing all surfaces. I cleaned up the excess glue by sanding, filing, and trimming with a hobby knife. I washed the model again, making sure to remove all dust from the corrugated roof grooves and brick mortar lines.

WORKING FROM THE TOP DOWN

I began by coloring the roof first. Research showed that corrugated panels came in various sizes. I settled on a 30" width. The model roof panel rows are 48" deep, so I'm looking at 30" x 48" panels.

I taped-off panels at just under 30" width to allow a bit of overlap. This does not have to be exact. The final effect is what we're after [2].

Starting with the top row, I removed every other tape panel and saved them to re-mask later. I used four colors of pastel chalks and applied in order.

- Charcoal
- Burnt umber
- Light gray (very close to the original roof color)
- Burnt sienna

I applied each color individually and sealed with a quick shot of Dullcote prior to the next color application. When these panels

THE LITTLE BRICK GARAGE | 3

were completed, I re-masked the panels with the saved tape and pulled the remaining tape off the same row to repeat the process.

Once a row was weathered, I repeated the process for the next row. After the final row was completed, my roof looked great.

DOOR DETAIL

I worked on the roll-up door next. You can see the original condition on the model in the first photo. I found a photo online to use as inspiration for a weatherbeaten appearance.

When the washes were dry, I sealed the work with Dullcote. I added darker highlights on the rails and stiles, and sealed the work again.



2. Individual pieces of tape are applied to the roof for weathering preparation.

THE LITTLE BRICK GARAGE | 4



3. The completed roof appears as if individual panels were installed.



4. Prototype photos offer inspiration for weathering colors and paint failure. I Googled and found this image.

THE LITTLE BRICK GARAGE | 5

When using multiple washes of acrylic paint, I find it best to seal each layer with a flat coat. Without sealing the work, you could remove previous work as a new wash is applied.



5. I dry-brushed thinned burnt umber acrylic paint for the first step, using horizontal strokes on the panels.



6. Next, I shaded each panel with a #2 pencil and a Prismacolor burnt umber pencil and sealed with Dullcote. I applied a thin wash of white acrylic over the entire door. I wanted a well-worn and faded appearance.

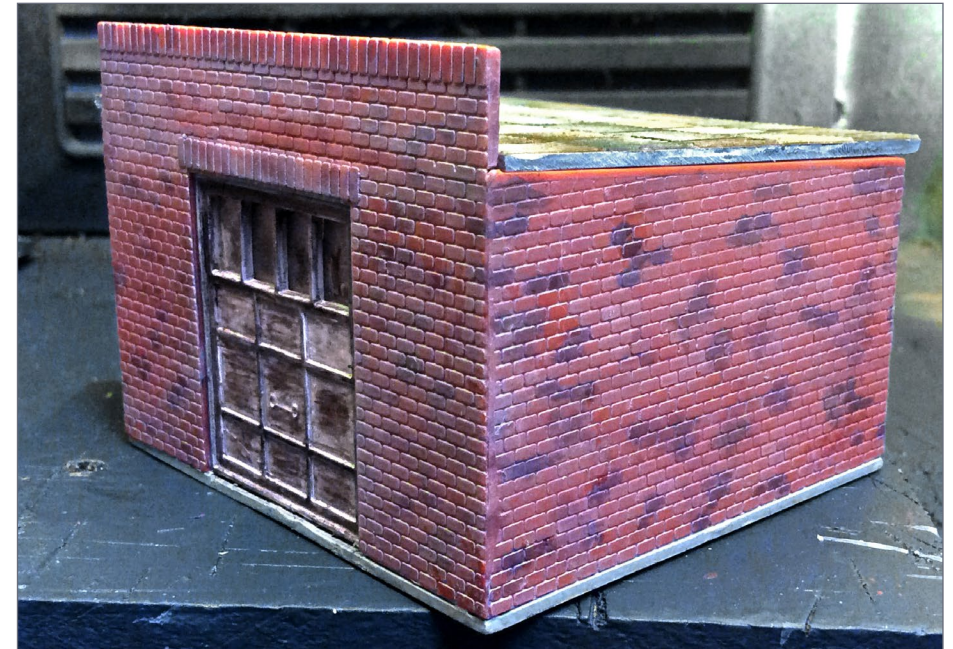
THE LITTLE BRICK GARAGE | 6

COLORING BRICK WALLS

I tackled the brick walls next using four colors to create the look I wanted. I used artists acrylic paints with colors that complement each other and do not stand out in stark contrast.

1. The color as molded
2. The lighter shade of the molded color as created by the sanding.
3. A mix of equal parts burnt umber, Signal Red, Granite Gray.
4. A mix of equal parts burnt sienna, Signal Red, Granite Gray.

I randomly dry-brushed color #3 on groups of bricks on all brick faces, then did the same with color #4. I was careful to wrap the color around the building corners as appropriate. A few prototype photos were helpful. After dry-brushing, Dullcote sealed the colors.



7. Not all brick looks the same on a building. Varying the color can add to the appearance.

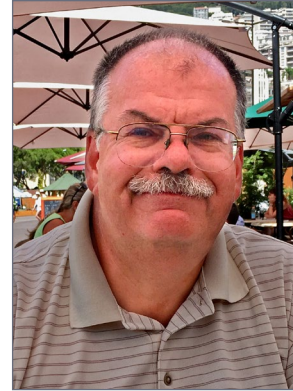
For mortar, I applied a very thin wash of acrylic paint. I used equal parts burnt umber, burnt sienna, and Granite Gray for the mortar mix. I was aiming for a “coffee with cream” shade rather than white or gray. The mortar wash was brushed liberally onto the brick walls and allowed to flow naturally. Any wash that remained on the bricks dried as applied, which muted the tone of the brick. I was pleased by this little surprise, and sealed the work with Dullcote.

After the flat coat had dried and the roof reattached to the structure, I ended up with a very nice \$2.00 building. Now I need to find a home for this gem on my layout! ☒



8. The mortar wash adds an aged appearance to the walls and reduces color variations.

HELMUT WARBOLD



Helmut received a Lionel set from Santa when he was very young. A 1963 visit with his grandfather in Germany cemented his interest in trains. Helmut's grandfather had just retired from the German Federal Railway, Deutsche Bundesbahn, where he had been an engineer. Steam was still in use, and Helmut was introduced to living breathing steam locomotives.

The Lionel trains eventually gave way to an AHM HO train set with Helmut's father encouraging model building and realism. Helmut is a member of a local model railroad club, and he has worked at a local hobby shop. He enjoys the social aspects of the hobby, meeting interesting folks and developing great friendships.

Helmut is retired after 30 years in property management for a major health insurer. His four grown children live in Michigan, Tennessee, and California. Besides model railroading, Helmut and his wife enjoy traveling. Golf and motorcycling also have captured his attention, and somehow there are several Harleys in his garage. ■



RATE THIS ARTICLE

THE AH-HAH MOMENT

column



MRH Running Extra | May 2019

JOE FUGATE: GETTING AN AWESOME SLOW SPEED POWERED PIN-VISE ...



Drilling lots of holes in styrene can be a pain with a pin vise. If only there was an easy way to get a powered pin-vise that could take bits down to #80.

Well, guess what! There is, and I now have one – and I couldn't be more pleased with the result!

I started with a GENERAL precision screwdriver from Amazon for \$10 (free shipping to Prime members): [amzn.com/B002XZLTQO](https://www.amazon.com/B002XZLTQO)

Next, Micro-Mark sells a special add-on chuck for this screwdriver for \$20 (+ shipping): mrhmag.com/magazine/url/precision-chuck

So for less than \$40, I got this superb slow speed powered pin-vise. The drill turns at about one revolution per second – a perfect speed for materials like styrene which can melt when drilling too fast.

The precision screwdriver body takes two AAA batteries, and unless you're doing a lot of drilling they last for many months at a time.

Even though the Micro-Mark add-on chuck says it closes down to 1/64 drill bits, I can easily use #80 drills in this chuck. They spin perfectly true, making this tool a delight to use compared to a manual pin vise.

One note, in [4] the #80 drill sticks out so you can see it easily. Ordinarily, I put the drill bit in further so the minimal amount I need is sticking out – this minimizes drill bit breakage. ☑

THE AH-HAH MOMENT | 2



↑1. This \$10 GENERAL precision screwdriver spins at about one revolution per second, making it perfect as the basis for a slow-speed powered pin vise for modeling.

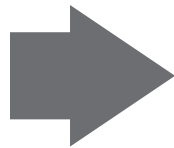
→2. Micro-Mark sells this special add-on chuck for \$20, allowing you to convert the precision screwdriver [1] to a slow-speed powered pin-vise.

→3. Once you've added on the chuck [2], you get this superb, lightweight powered pin-vise shown here. The slow one revolution per second spin is just perfect for precision drilling in styrene plastic.

↓4. Although Micro-Mark says the chuck [2] is limited to 1/64" drill bits, I have no problem using a #80 bit in the chuck – it spins perfectly true.



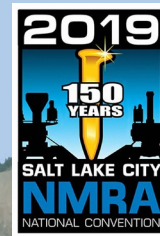
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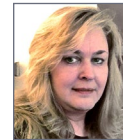
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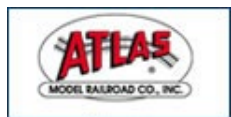
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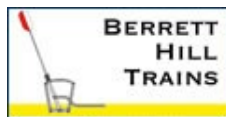
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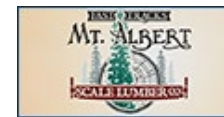
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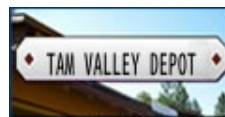
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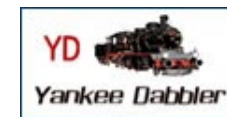
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PUBLISHER'S MUSINGS



Model Railroad Hobbyist | May 2019

JOE FUGATE: KEEPING YOUR TRACK
AND WHEELS CLEAN LONGER - A LOOK
AT POLAR VS NON-POLAR SOLVENTS



RATE THIS ARTICLE

AS PART OF MY "RUN LIKE A DREAM" WRITING project we've been discussing here in my recent editorials, I've been pursuing an in-depth knowledge of better track cleaning. One of my goals has been to learn what causes the black gunk we get on our track and wheels, and also *how to inhibit its formation*.

If we can slow down the process that's getting our wheels and track dirty, all the better!

One story that caught my attention came from the La Mesa club in San Diego. This famous club has a fantastic layout modeling the Tehachapi Loop line of the Southern Pacific. They run trains for a good 8-12 hours daily, so if anyone is "stress testing" model railroad-ing methods, it's this club!

According to members of this club, they were using isopropyl alcohol (i.e., rubbing alcohol, or IPA) to clean their track and wheels. Much to their dismay, they found the harder they cleaned things, the more quickly they got black gunk buildup again.

After some experimentation, they discovered cleaning the track and wheels with mineral spirits resulted in things staying clean longer.

This story reminded me of the "Wahl clipper oil" claims that

surfaced in the hobby several decades ago. The claim was cleaning the track and wheels with Wahl clipper oil actually reduced the frequency of the cleaning.

Something seems to be definitely afoot here and it cried for more in-depth investigation.

What causes the "black gunk" on wheels and rails?

Several years back, a model railroader submitted dirty track for an in-depth chemical analysis of this "black gunk" and reported the results on the MRH forum [mrhmag.com/node/3229].

Bottom line, this black gunk is mostly metal oxides formed from microarcing between the wheels and the rail. This contact point is

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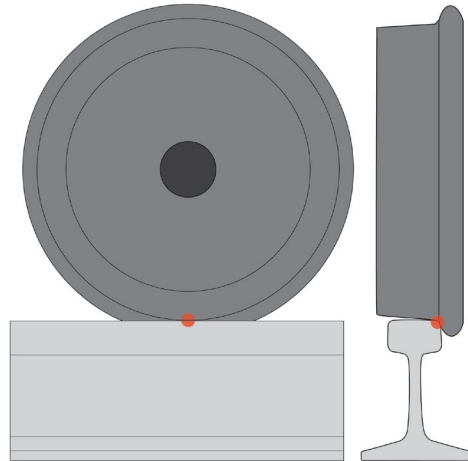


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PUBLISHER'S MUSINGS | 3

quite small, as you can see in [1]. Essentially, the electricity flowing at this tiny contact point triggers a chemical reaction in the wheels and rails.

The electrical current in effect “explodes off” metal alloy molecules from the wheels and rails. It oxidizes these metal molecules, forming a fine dark gray powder. So the key to slowing down the buildup of metal oxide is to *inhibit the microarcing*.



1. The electrical contact between wheels & rail is on the inside rail head and quite small.

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If you know something about the history of electric motors, you know they first tried copper motor brushes, but they arced badly and burnt out quickly. The solution was to use graphite because it inhibits arcing at the contact point! Interesting ...

Further discussion with a chemist who also understood electrical contact cleaning such as in relays and switches, put me on to the concept of polar versus non-polar solvents.

Once I delved into polar vs non-polar solvents, something very interesting emerged.

Polar vs non-polar

Molecularly speaking, you can use what's called the substance's dielectric constant to derive its molecular polarity.

The chemist told me that non-polar solvents work best to both clean electrical contacts and to protect them by inhibiting microarcing. Apparently, polar solvent molecules get trapped in

2. Polar, semi-polar, and non-polar solvents.

Solvent	Dielectric constant
Kerosene	1.8
WD-40 contact cleaner	1.9
CRC contact cleaner & protectant	2.0
DeoxIT D5	2.0
Gasoline	2.0
Neverstall	2.0
Diesel	2.1
Mineral spirits	2.1
Wahl clipper oil	2.1
Turpentine	2.2
Carbon tetrachloride	2.2
WD-40 (regular)	2.4
Graphite (microscopic thin layer)	1.8-3.0
CRC 2-26	4.6
Automatic transmission fluid	4.8
Rail-zip	4.8
Bachmann track cleaner	4.8
Butyl acetate	5.1
Butyl cellosolve	5.3
Ethyl acetate	6.0
Graphite (thick layer)	10.0-15.0
Isopropyl alcohol (IPA)	18.0
Methyl Ethyl Ketone (MEK)	18.9
CRC QD contact cleaner	20.0
Lucas contact cleaner	20.0
Acetone	20.7
Vinegar	24.0
Ethyl alcohol (e.g. vodka, wine)	25.0
Ammonia solution	31.6
Propylene glycol	32.0
Lacquer thinner	33.6
Glycerine	47.0
Hydrogen peroxide	60.0
Water	80.4

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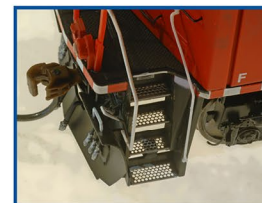
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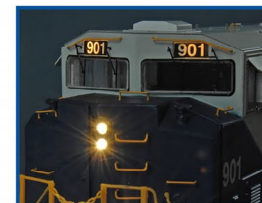


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micropits of the metal surface, leaving an “electron charged” microscopic residue. This electron-charged polar residue encourages micro-arcing in the presence of an electrical current, quickly forming new metal oxides on the metal surfaces in electrical contact.

But non-polar solvents do the reverse. They actually “protect” the metal surfaces from forming new oxides because they *inhibit* microarcing.

In the chart [2], I list the dielectric constant for a number of solvents, contact cleaners, track cleaners, and the like. To make this chart, I assume a dielectric constant of 3.0 or less constitutes a non-polar solvent for our purposes. I assume a dielectric constant of 10.0 or more means the solvent is polar. Anything in between is semi-polar.

The best solvents for track cleaning are the non-polar ones. The worst ones for track cleaning are the polar solvents! How many of us have used IPA, lacquer thinner, or acetone for track cleaning? Bad, bad!

Also notice the “wonder cures” for dirty track are all non-polar! *Ah-hah!*

The other thing I notice is not all electrical contact cleaners are created the same. CRC Contact Cleaner and *Protectorant* (do their chemists know something here? – sure sounds like it) is CRC’s lowest dielectric constant non-polar product!

While CRC 2-26 is often recommended on modeling forums for cleaning, it’s actually semi-polar. It’s far better than IPA or the like, but the CRC Contact Cleaner and Protectorant is better still. Notice, CRC QD Contact Cleaner is actually *worse* than IPA.

Notice some model railroad track cleaners have lower dielectric constants as well. They’re on the right track, no pun intended!

From this list you can see kerosene, WD-40 Contact Cleaner, CRC Contact Cleaner and Protectorant, Deoxit D5, Neverstall, and mineral spirits are all excellent solvents to use for cleaning track and wheels.



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Solvents to avoid include: iso-propyl alcohol, MEK, acetone, and lacquer thinner.

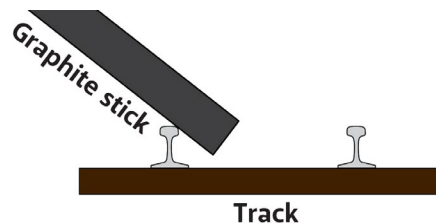
What about graphite?

Per the polar/non-polar chart, graphite is a very interesting substance.

Microscopically thin layers of graphite are actually very non-polar and greatly inhibit microarcing.

But thicker layers of graphite get increasingly polar. The “layers don’t bond” nature of graphite is what makes it work so well to counter friction. The layers of graphite freely slide right over each other.

But these extra natural layers also dramatically increase graphite’s dielectric constant.



3. Applying graphite to the inner railhead.

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PUBLISHER'S MUSINGS | 7

When applying graphite to your track to help keep the rails from microarcing, *more graphite is not better!*

In fact, what I tell people is one quick swipe on the inside railhead is all you need [3]. You don't want to see it. If you can see the graphite, then you have applied way too much! Just one quick swipe with moderate pressure is plenty.

At this point, I think these non-polar versus polar solvents findings suggest a clear direction for better track and wheel cleaning, and how to reduce the amount of re-cleaning needed by inhibiting the build-up of fresh black gunk on the wheels and railhead.

It appears you want to clean your track (and wheels) with a non-polar solvent and then treat the inside railhead with graphite to further reduce your frequency of cleanings. That's about as good as it gets! ☒



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4.7 Ted York's Cajon Pass

4.7 The Los Gatos local

4.5 MRH Q-A-T: Improve pilot tracking, ...

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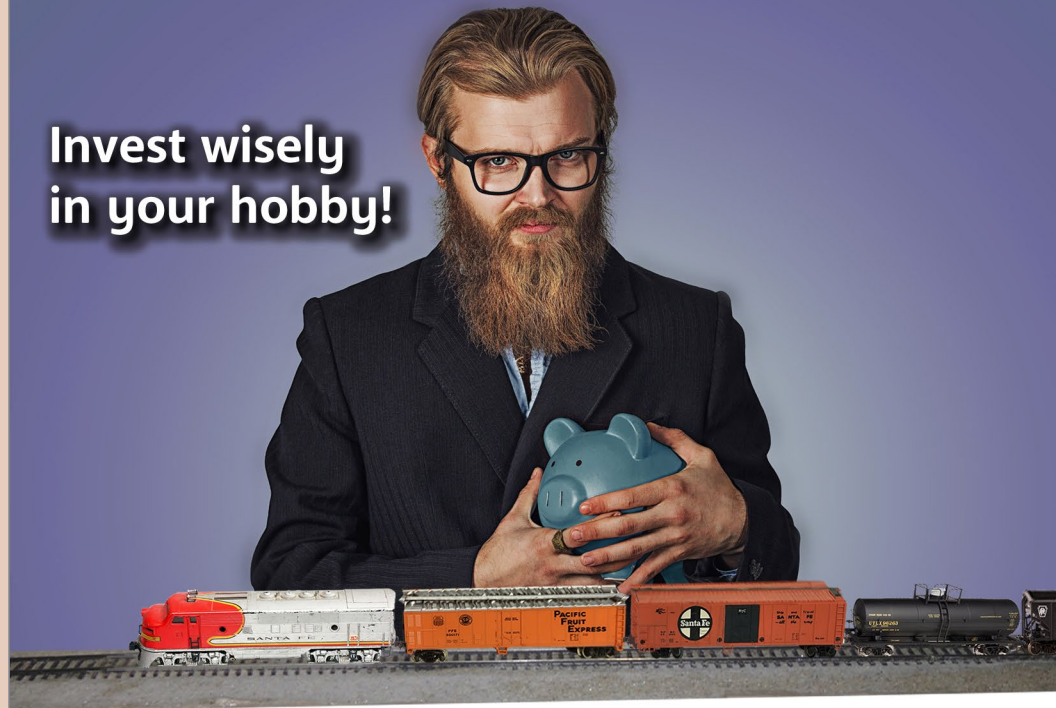
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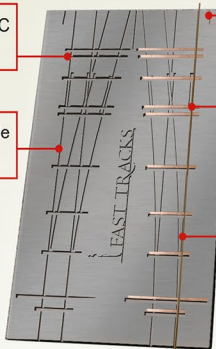


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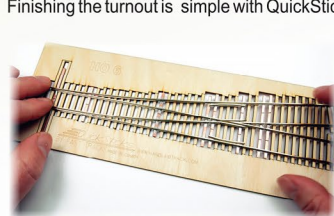
Held in precise alignment, rail is then soldered in place onto the ties.

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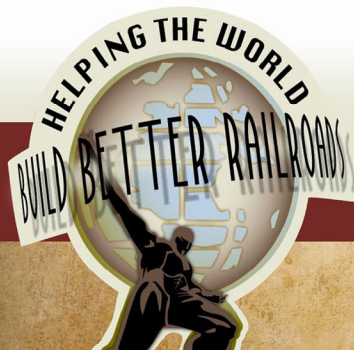


Just insert the rail into the tool and file.

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Model Railroad Hobbyist | May 2019

compiled by **JOE FUGATE**

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Motive Power (Showing off model locomotives)

Sun, 2016-03-20 21:47 — [SD40-Fan](#) Diesel locos

Currently, a stable of one-



If you're only going to have one, it might as well be your favorite. The weathering may be a bit heavy-handed for some's taste.

1. What modeler doesn't love locomotives? In his MRH web log (blog), [SD40-Fan](#) shows the loving care he puts into detailing and weathering each of his locos, starting with loco one, and then two, and ...

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

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Start of bridge building

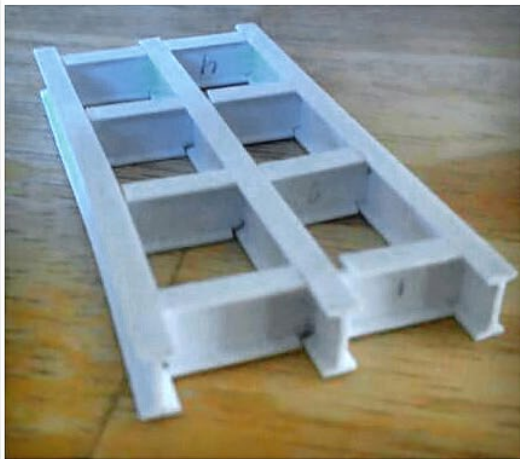
Thu, 2014-12-25 12:46 — ybandell

It has been a while since I made any updates to this blog. Life got in the way of building my module: buying a house was amongst those things that got in the way. Upside though: space to actually build modules and not have to use the kitchen floor as my workshop

Earlier this week I started with scratch building the first of several bridge segments needed. This is what the prototype bridge sections look like:



The prototype has a total of 7 of these sections. I might only do 5 or 6 due to space constraints on the nearly 4 foot long module. After about 2 hours struggling with 1/4 inch styrene I-beams and some rudimentary tools, it was done. It wasn't as neat as I wanted it to be: better tools and realizing I needed them while building it made me less patient and the result shows it:



So while being a bit disillusioned of my scratch building skills, it hit me: why not abuse the wife's Silhouette Cameo? We've had the thread on MRH about the Cricut Explore and people mentioning the Silhouette Cameo as less restricted from a

2. MRH forum member **ybandell** uses some clever cutting on a Silhouette Cameo to make a steel girder bridge out of sheet styrene. Definitely a thread worth checking out!



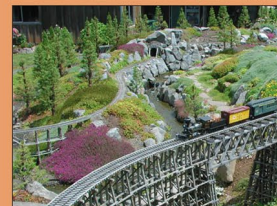
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- The Narrow Gauge Convention in Sacramento, Sept. 4-7
- Train Mountain G and 7-1/2" Gauge on September 2

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3D Printed Truck Bodies. *Video*

Thu, 2019-04-11 17:03 — JohnF281 Prototype information

Here are a couple vehicle projects I have been working on. Both truck bodies I actually designed for and in a computer game. The crazy thing about 3D printing is all I needed to do was resize the models to HO scale and adjust the underside to fit a frame. The fuel service truck will make an appearance on the layout occasionally to fuel up my industry RSSX Railserve GP7 and SW1200. The Hauler was built only because I designed the bed for this model truck in Farming Simulator and the cab was so cheap. Maybe it will find a place on a farm scene on my future layout.



Here is a comparison from in game to HO scale.



3. As 3D printing keeps gaining ground, more modelers keep exploring it. Here MRH forum member **JohnF281** shows some HO truck bodies he's 3D printed – with video as well!




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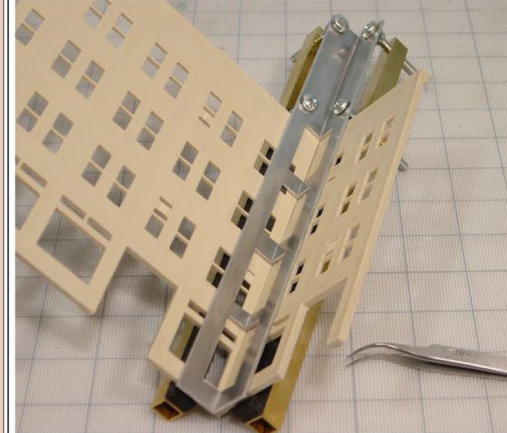
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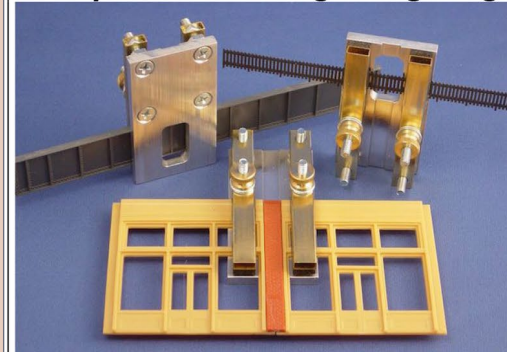
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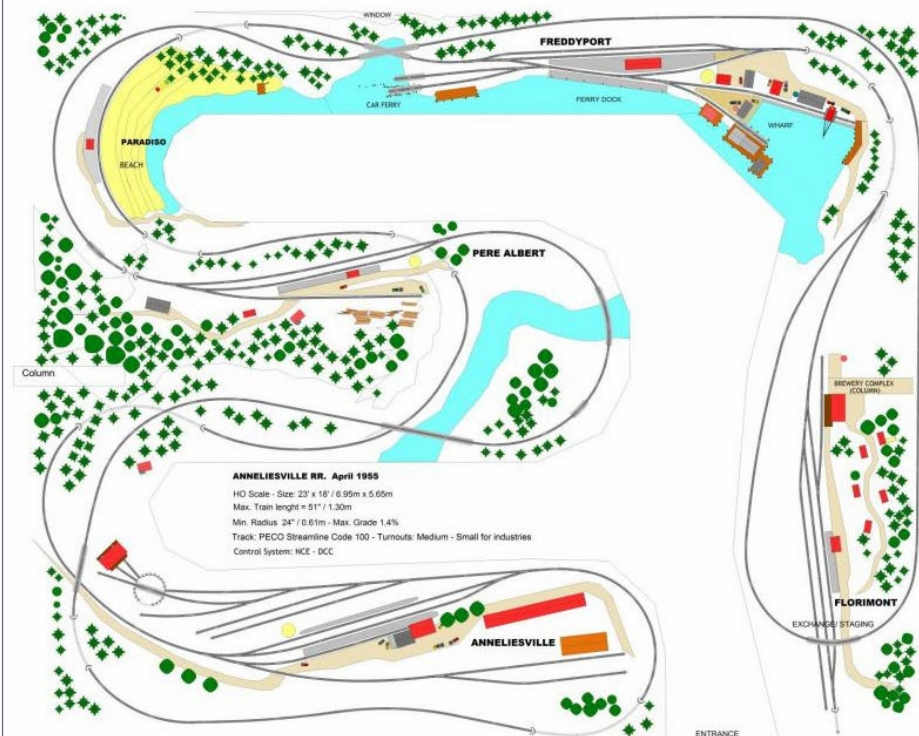
The Anneliesville RR & Navigation Co.

Wed, 2019-03-27 11:09 — [filip timmerman](#) [Personal journal \(editorial or commentary\)](#)

A GENERAL FIRST YEAR BUILDING JOURNAL.

Early Mars 2018 was the actual start of the building of this new Railroad. So what's up one year later since then...

The final track plan as discussed on the first blog: The Building of the "ANNELIESVILLE RR/ LAYOUT DESIGN



[filip timmerman's blog](#) 2665 reads not spam (0) mark as spam

Comments

PHOTO JOURNAL

4. This layout MRH blog by [filip_timmerman](#) shows not only his layout track plan but he provides photo progress of his layout's first year. Definitely worth a look: see his thoughts on ships.

Weekly Photo Fun - Apr 14-20, 2019

[View](#) [Edit](#) [Outline](#) [Track](#) [Clone](#)

Sun, 2019-04-14 08:29 — [JC Shall](#) [MRH Magazine general discussion](#) [Photo inspiration](#)

Another week starts ... post 'em if you got 'em.

-Jack

[Welcome!](#)

[Weekly Photo Fun April 7th to April 14th](#)

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this week

Sun, 2019-04-14 20:16 — [Modeltruckshop](#)



5. The Weekly Photo Fun thread always makes for delightful viewing each week. Forum regular [modeltruckshop](#) recently kicked things off with this cool photo ...





WHAT'S NEW on TMTV!

Late steam era ATSF at its best!



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FASTENERS FOR MODELERS - 1

Miles Hale gets it together by reviewing nailing fasteners for modelers.



FASTENERS FOR MODELERS - 2

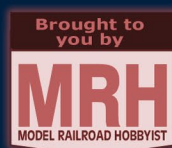
Miles Hale takes a new twist by reviewing screw-type fasteners for modelers.



WEATHERING POTPOURRI

Pierre Oliver presents a grab-bag of weathering technique experiments.

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WHAT'S NEAT

column



Model Railroad Hobbyist | May 2019

KEN PATTERSON VISITS GERRY GLANCY'S
HO/HOn3 LAYOUT, MICHELLE KEMPEMA
LOOKS AT RAILROADING IN WYOMING, AUSTIN
ALLARD AND RAND HOOD TALK ABOUT LAYOUT DESIGN, AND MUCH MORE ...



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THIS MONTH WE HAVE SIX SEGMENTS IN THE MAY



2019 "What's Neat" video show. World-famous model railroad artist Rand Hood interviews our very own Austin Allard from the "What's Neat This Week" video podcast about his ideas of designing his future

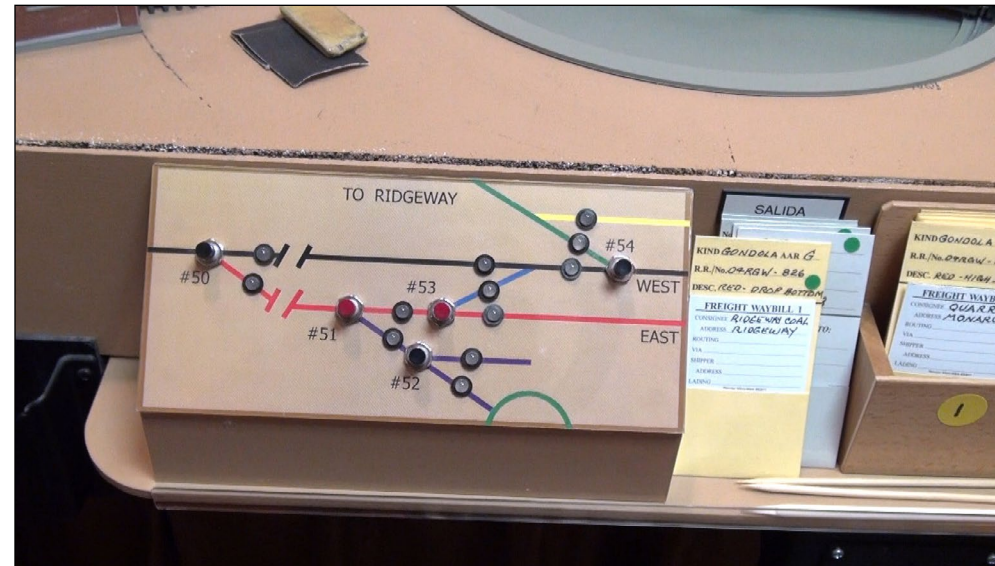
layout. It's interesting to watch his ideas unfold with Rand's guidance. We look at Gerry Glancy's HO/HOn3 dual-gauge layout. Drayton Blackgrove supplies us with fantastic drone footage in "Modeling Ideas from Above" with footage from Jackson, Michigan in Norfolk Southern territory. "On the Road with Michelle Kempema" covers railroad-related things to do while visiting Wyoming. Robert Simmons shows us the Western Kansas N Scale modular layout, and Tim Blackwell, editor of the *Cowcatcher*, describes his success in the publishing business. ✓

► PHOTOS AND VIDEO OF SUPERB MODELING

Gerry Glancy's dual-gauge layout



1. (Above, top right, bottom right) Dr. Gerry Glancy can be found working at Caboose model railroad shop in Lakewood, Colorado, because he has a passion for model railroading. Gerry shares with us his fantastic HO scale layout. It has three levels with the lower level modeled in standard gauge, the middle level in dual gauge, HO and HO_n3; and the top level is narrow gauge modeling scenes in vignettes from areas in Colorado. Gerry has modeled the Monarch quarry branch of the Rio Grande complete with the rotary dumper setting up loads to travel to Pueblo, Colorado. Salida depot is represented on his layout. The colors and textures of his layout represent the Rocky Mountain railroading of Colorado perfectly. Operation is also a favorite aspect of the hobby with Gerry. He builds mini control panels for each switching area. The turnouts line up with a simple throw of a switch, showing the routing with green and red LEDs. The panels also have a stationary decoder built in so Gerry can route turnouts with his hand-held throttle through his DCC system.



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



WHAT'S NEAT | 4

Austin Allard's layout design evolution, real time ...

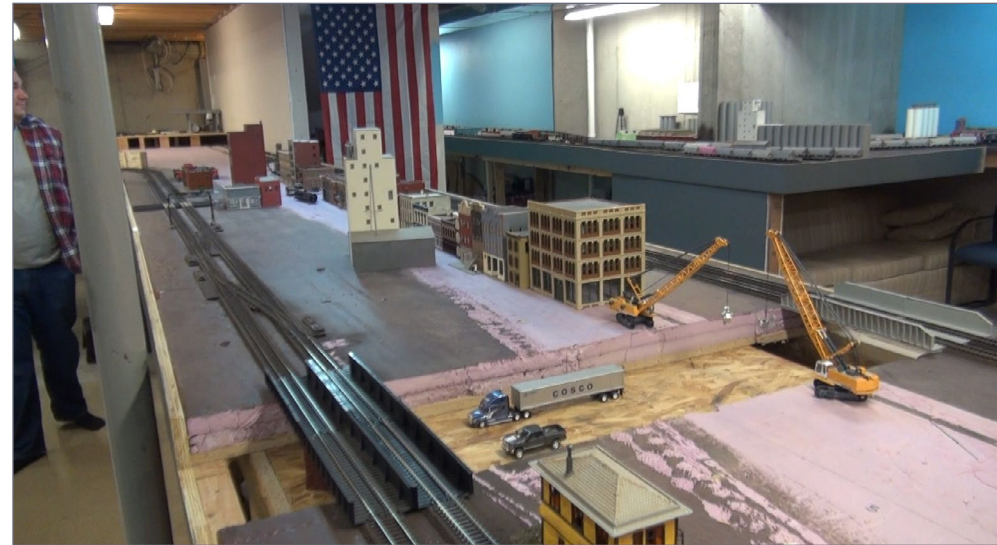


2. (Above) Rand Hood interviewed Austin Allard in Rand's home in front of a very famous steam photo of the Denver & Salt Lake railroad. Austin came to visit in Colorado with a lot of HO scale mainline experience. He and his father built a layout in Pacific, Missouri, south of St. Louis. Their benchwork is solid as are all the double track mains laid on cork roadbed. The track is the smoothest I have ever seen, all 2000 feet of it.

3. (Top right) It's code 83 with #10 turnouts to ensure smooth fast mainline freight service with trains being no shorter than 75 cars each.



WHAT'S NEAT | 5



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





4. (Top two) Upon seeing John Parker's HO scale layout in Colorado, his ideas of model railroad fun sort of changed. He no longer wants the double track "race track," but instead a single main line with long passing sidings and lots of industries to switch. Austin had planned to do urban Kansas City or St. Louis scenery as "cornfields and the plains of the Midwest are boring." Rand quickly seized on this comment to let Austin

know that no scenery is boring and that some great modeling has been done depicting the cornfields of the Midwest or the prairies of Kansas. It was interesting how the interview went. Weeks later Rand commented on the podcast that Austin made him think that a double track main line is not boring. Any outfit with a dispatcher running 21 trains, on the NS In his example, in 82 miles of double track is not going to be boring. In fact, it can be very interesting and Rand may change his railroad from single track to double. The conversation will continue until both Rand and Austin build their first benchwork.





LAYOUT DROP-BRIDGE
 Carl Blum details building a fully scenicked self-aligning drop bridge on friend Jim Behling's layout

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On the Road with Michelle Kempema



5. (Above, top right) This month Michelle tells us about railroad theme places to visit in Wyoming. Michelle interviews Abigail Martin, the domestic partnership manager, Wyoming Office of Tourism, along with Jill Pope of the Visit Cheyenne Convention and Visitors Bureau. Abigail tells us about the renovated roundhouse in Evanston, Wyoming, along with the historic city center redeveloped with the influence of the national Main Street program. Jill tells us about tours offered by the Cheyenne Depot Museum (with the Clear Creek HO_N3 layout built by Harry Brunk upstairs) and the fact that the Big Boy is scheduled to visit May 4 on its way to Ogden, Utah, on May 9, according to the official Union Pacific website. Jill also describes the Big Boy, one of eight in existence, that is on display in Holliday Park in Cheyenne, just north of I-80. There is also the Sherman Hill Model Railroad club in a local mall which displays David Trussell's (founder of the Colorado Model Railroad museum) original modular layout which toured the country in train shows in the 1980s and early '90s.





PHILOSOPHY OF PROTO OPS
The MRH Staff presents simple ways to add proto ops fun to running trains

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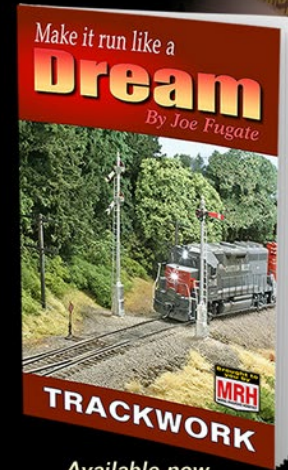
WHAT'S NEAT | 10

Tim Blackwell's *Cowcatcher* magazine

6. I interviewed Tim Blackwell, the editor of the *Cowcatcher* magazine, at the Rocky Mountain Train Show in Denver. He describes his colorful magazine that is full of beautiful ads from all the major manufacturers. He says that after 16 years of building the publication all things seem to keep growing in readership and sponsorship alike, bucking the trend we often hear about due to the internet. The *Cowcatcher* owes its success to following Rule #1 – to simply promote the hobby in a positive way for the greater good of the hobby. Tim says he plans to continue doing what he has been doing with some additional internet coverage through social media. The magazine is available in hobby shops, or online through subscription at www.cowcatchermagazine.com.

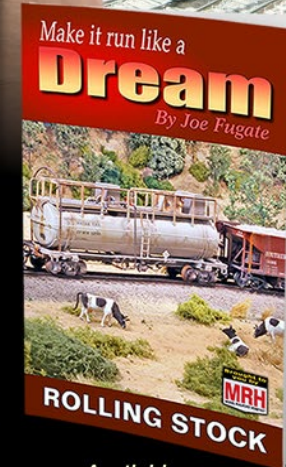
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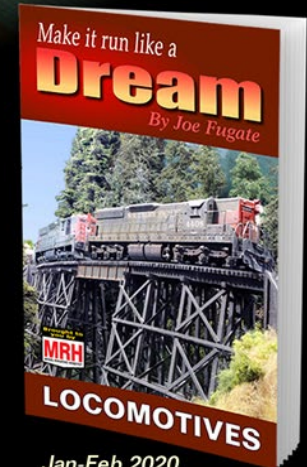


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Richard Simmons' N scale Western Kansas Rails



7. (Top and bottom above, top right) This month, Richard Simmons shares with us the Western Kansas Rails modular layout in N scale. They model Kansas just as it is, to educate the viewer unfamiliar with the territory of the plains. Full-sized grain elevators for long-term storage measure more



than six feet long and a scale 128 feet tall, with dozens of 28-foot diameter silos. It's amazing to see this in model form as the freight cars look like ants compared to the overall structure. The city or town scenes are modeled from prototype businesses seen in Garden City, Kansas. The layout is sectional and goes together the same way at each show. The main line has a minimum radius of 27 inches with code 55 rail, making the main lines look very prototypical. He says they set up the layout at six to eight train shows each year to promote N scale to modelers interested in a scale where scenery is king, yet super-detail is very attainable.

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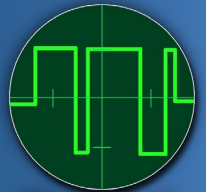
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More stay-alive insights



**Electrical
Impulses**

1. Size comparison of the old KA2 (left) to the new KA2 (right). For relative size, they're shown with a US 25 cent piece. This new much smaller KA2 now makes it even easier to fit stay alive into a loco. Also see [3].

Model Railroad Hobbyist | May 2019

MARCUS AMMANN & THE MRH STAFF
delve into adding stay alive to 8- or
9-pin decoders ...

★★★★★
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ONE OF THE BEST DCC ADVANCEMENTS IN
recent years is stay-alive.

If you haven't heard of stay alive, it uses capacitors to keep your loco running over dirty spots without missing a beat.

MORE STAY-ALIVE INSIGHTS | 2

On top of dirty track/wheels, plenty of other things can contribute to a power loss and intermittent contact, like:

- Dead frogs on turnouts or crossings
- Turnout points relying on contact-only for power
- Short loco with few wheels and pick-ups
- One loco side picks up one rail and tender picks up other rail
- Tender drawbar contact intermittent
- Tender bolster contact intermittent
- Sintered metal wheels less reliable contact than plated wheels
- Loco weight unbalanced, affecting traction and pick up
- Rough or uneven spot in trackwork

To see stay alive in action, here is a demo video [2] by *MRH* DCC columnist emeritus Bruce Petrarca from back in March 2013:



2. Bruce Petrarca's demonstration of DCC stay alive in action from the *MRH* 2013 issue.



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Stay alive options

In the July 2018 issue of MRH [mrhmag.com/magazine/mrh2018-07/dcc-impulses], Joe Fugate did a column on solving electrical pickup woes, and included information about the various stay-alive options available from DCC decoder manufacturers.

Some of the best stay-alive add-ons come from Train Control Systems in the form of 21-pin motherboard replacements with TCS's trademarked Keep-Alive included.

If you're planning to go the sound decoder route, the TCS motherboard replacements are a superb option. They're a drop-in replacement for the motherboard that's already in the locomotive – just add a 21-pin sound decoder and you're all set – you get stay-alive automatically!

But in this article, we're looking at 8- or 9-pin decoders, either non-sound decoders or older pre-21-pin sound decoders. How do you add stay live to them?

Adding stay-alive to 8- or 9-pin decoders

Newer decoders have solder pads for stay alive, which makes adding stay-alive a fairly straightforward process. But with older non-21-pin decoders, you will need to do some minor board surgery and/or careful on-board soldering to add stay-alive. That's what we're going to cover here.

To get a stay-alive circuit, you can either buy a ready-made one, or you can build one yourself. In next month's column, we'll cover building your own stay alive using super capacitors.

For this month's column, we use TCS's new down-sized KA2 Keep-Alive.

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ADDING STAY ALIVE RISKS

Adding stay-alive to an older 8- or 9-pin decoder without stay-alive solder pads may void your decoder warranty, so be aware of that. If you prefer to avoid this, then 21-pin non-sound decoders are appearing on the market – or get a newer 8- or 9-pin decoder with stay-alive solder pads.

The beauty of 21 pin decoders is they have pins devoted to stay-alive, and mounting them in a Keep-Alive motherboard from TCS or in a Decoder Buddy 21-pin motherboard replacement (covered in last month's "Electrical Impulses" column) with a TCS KA2 attached works great and won't void any warranties.

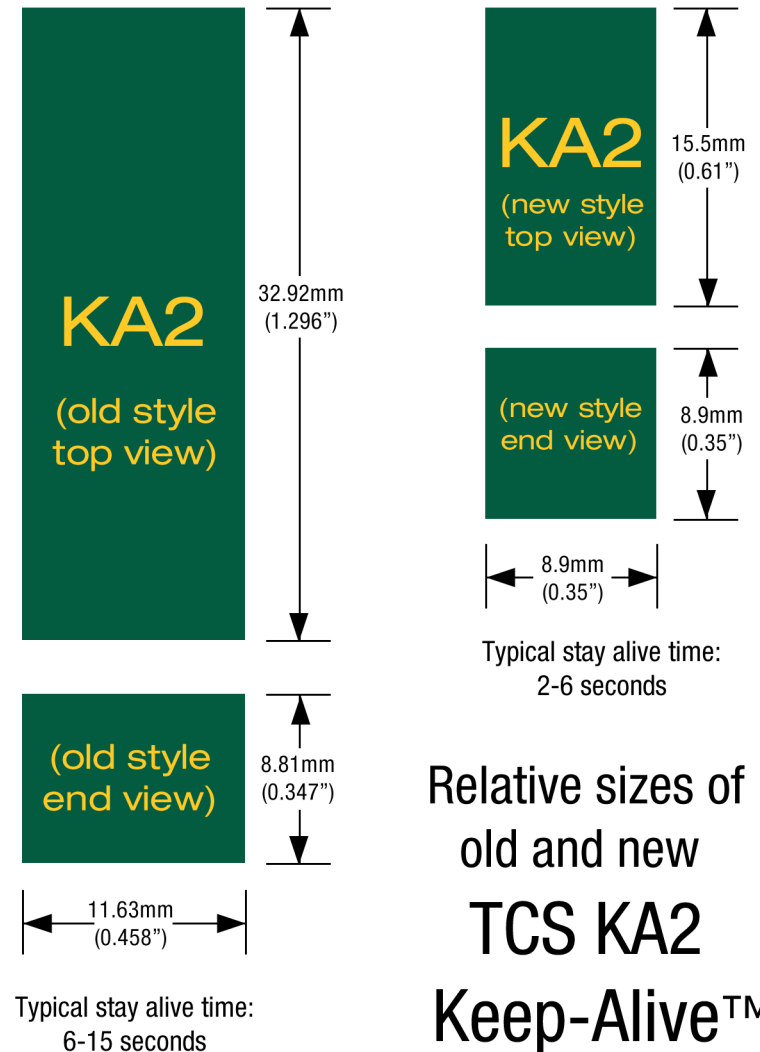
TCS recently did a dramatic downsize of the KA2, making it even easier to fit inside locomotives[1, 3]. This new stay-alive board provides 2-6 seconds of power, and is available for less than \$40 from MRH sponsors that sell DCC products.

By contrast, the old larger KA2 provides 6-15 seconds of power, which frankly, is overkill.

Long stay-alive durations make it too easy for a locomotive to over-run dead sections such as at lift-outs, and end up on the floor! We prefer the shorter duration and the smaller size. Two seconds will run over most any dirty spot.

The KA2 has two wires, a blue wire and a black-and-white striped wire. The blue wire connects to the +12V feed, and the B&W striped wire connects to ground (or negative).

As mentioned, some newer decoders have solder pads and/ or sockets for stay alive, which makes adding stay alive a fairly



3. Diagram showing the size and stay-alive differences between the old TCS KA2 and the new much smaller KA2. Narrow hood diesels have about 18mm of width inside, which means the new KA2 can go in the shell sideways! Also, the clearance above the motor inside typically is 8-12mm in spots.

MORE STAY-ALIVE INSIGHTS | 6

straightforward process. But for older decoder designs, you'll need to locate the +12V and the ground (or negative).

Finding the negative/ground

Here are the stay-alive connection points for a couple of common decoders.

TCS T1: Cut off the decoder shrink-wrap covering with a sharp X-Acto blade and make these connections for the KA2 wires:

- Connect blue wire to the function common blue wire (+12V)
- Connect the black-and-white striped wire to the negative connection of the decoder's bridge rectifier [5].

Replace the shrink-wrap.

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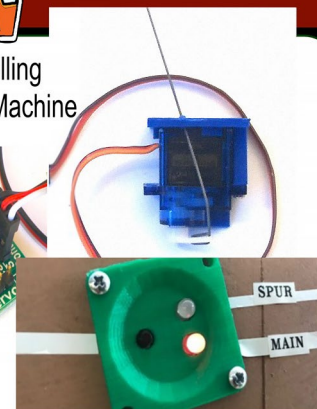
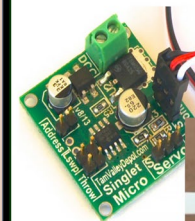
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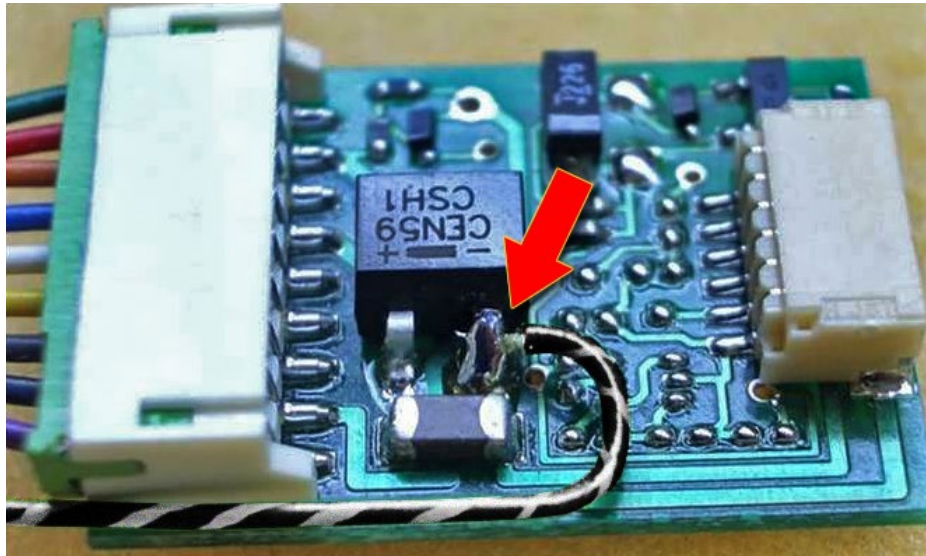
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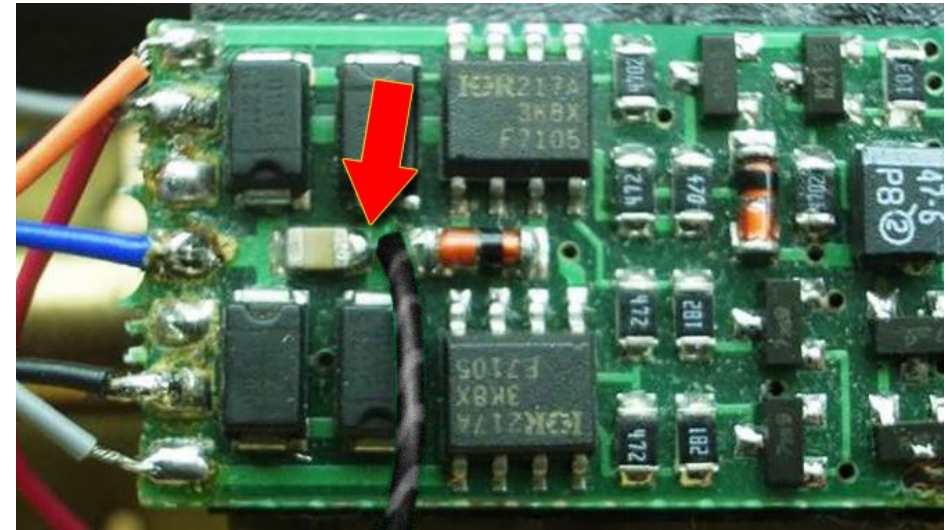
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5. TCS T1 negative (ground) connection location on the decoder circuit board (shrink-wrap has been removed). *Photo by Marcus Ammann*

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6. NCE D14SR negative (ground) connection location on the decoder circuit board. *Photo by Marcus Ammann*

NCE D14SR: Make these connections for the KA2 wires:

- Connect the blue wire to the function common blue wire (+12V)
- Connect the black-and-white striped wire to diode/capacitor junction as shown [6].

Finding the negative ground on any decoder: With a multimeter and a bit of probing, you can find a negative ground connection point on any decoder.

Here's the process.

- Set your meter to read DC volts in the 12V range.
- Power the decoder. Either plug the decoder into a DCC socket and place the loco on the track with the DCC power on, or plug the decoder into a decoder tester that's powered.

- Using the positive multimeter probe, connect it to the blue wire function common (+12V).
- Using the negative multimeter probe, explore around an orange or brown block (a capacitor) until you find the negative end.

That negative location is where you connect the *black-and-white striped wire* (negative ground).

Some stay-alive considerations

As long as the loco is still receiving DCC commands, you can stop it immediately if you need to. Stay-alive doesn't affect that at all.

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7. Demo 1: Gerry Hopkins demos stay alive with a Tsunami and a TCS WOWSound decoder in this video.

But locos will keep running when encountering unpowered track such as near a removed lift-out bridge. You need to take this into consideration when you use stay alive!

When a stay alive is enabled, it can be difficult to read back CV values on the programming track. You may need to disconnect the stay alive in order to get the decoder to program properly on a programming track.

Programming on the main is not affected. That still works just fine, even with stay alive installed.





8. Demo 2: Replace the Tsunami with a WOWSound.

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Belt and suspenders

As recommended in Joe Fugate's July 2018 column on solving electrical conductivity woes, adopting a "belt and suspenders" approach is the most effective.

First, add extra wheel or track wipers to the loco to improve pickup from the rails. Then add stay alive as extra insurance. When this is done, the loco power pickup becomes bulletproof. Joe has run locos over a full weekend at a show on layout modules, and found locos so-equipped never stalled or faltered even once!

The other thing we've noticed is we don't need to clean the track or wheels nearly as often as before. It used to be Joe had to clean the wheels and track before every monthly operating session. Now every four-to-six sessions works fine.

If you use non-polar track cleaners (see this issue's

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MORE STAY-ALIVE INSIGHTS | 13

“Publisher’s Musings”) and treat the inner railhead with graphite, the thorough cleaning sessions may be even fewer and farther between.

But at some point, the locos might keep running but seem to be sluggish in responding to throttle commands. That means the wheels and track are finally getting so dirty it’s time to clean them up.

Next month, we’ll discuss building your own stay-alive circuits for a fraction of the cost of commercial stay-alive products. ☑



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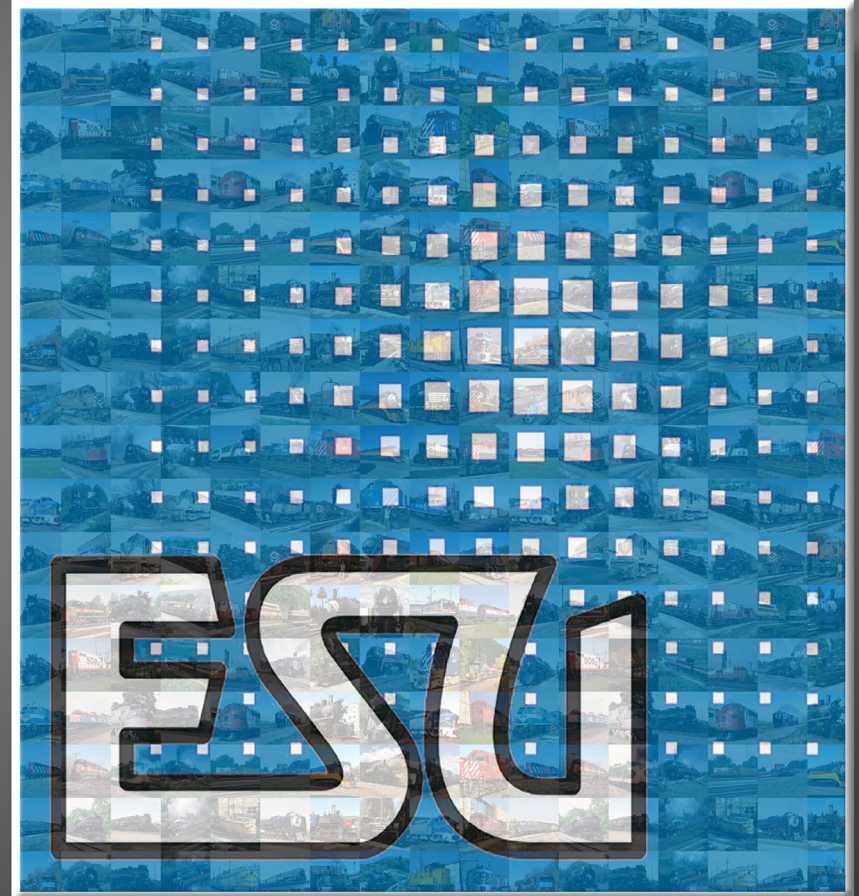
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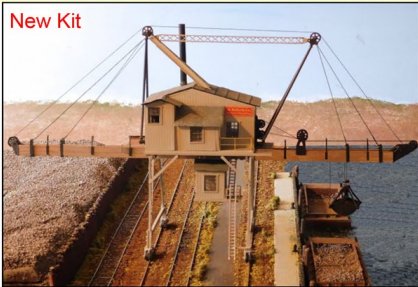
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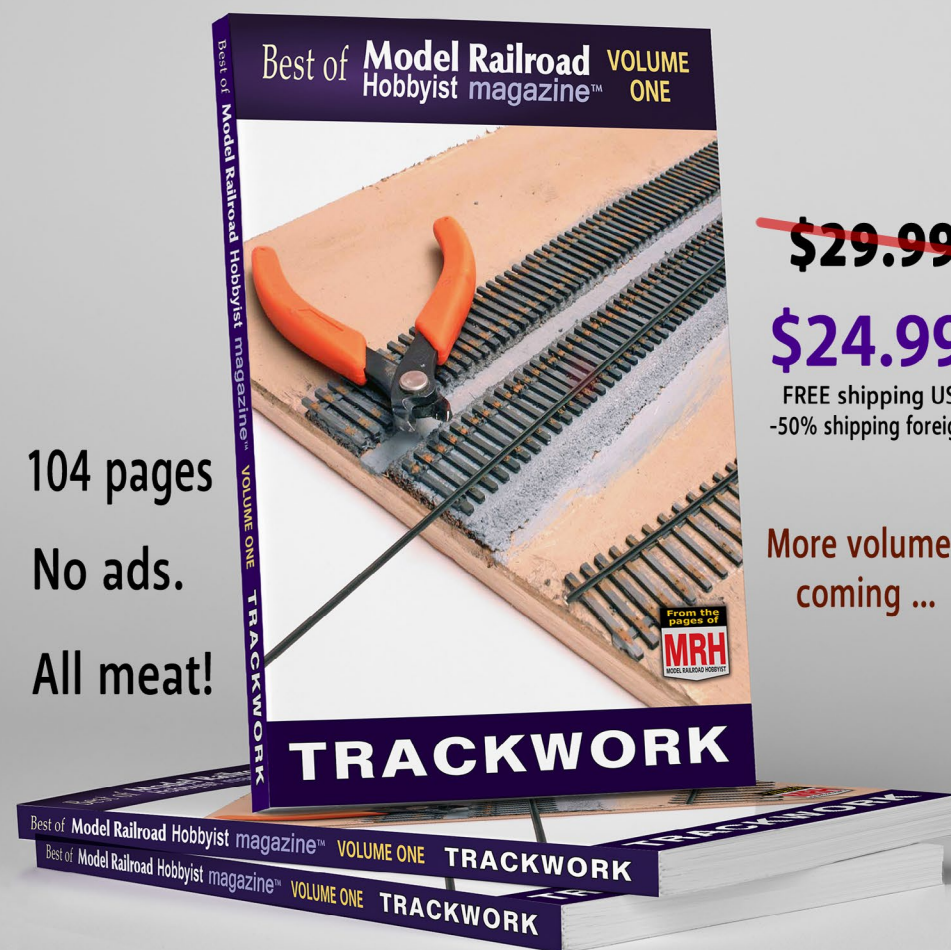
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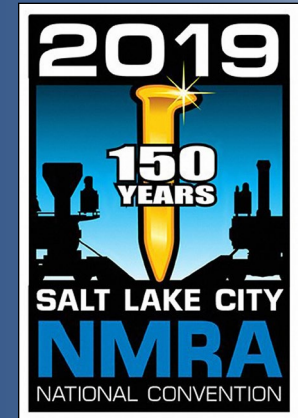
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Gil Bennett's DRGW Lost Creek Branch



Also on TMTV!

*MRH visits this
Sn3 line built by
an accomplished
railroad artist ...*



*Visit Gil's layout at the Salt
Lake City NMRA convention
this coming July.*

1. Accomplished railroad artist Gil Bennett models a free-lanced branch of the Denver & Rio Grande three-foot narrow gauge in Sn3. Here K-37 #497 rolls out of Salina, Utah and climbs south toward Terill Pass.



RATE THIS ARTICLE

MRH: GIL, HOW DID YOU GET STARTED IN THE hobby?

Gil Bennett: When I was two years old, I got my first American Flyer train and it was a 4-4-2 Atlantic. And according to my brother, I didn't run it for a while because I was too afraid to do so. But I started in model railroading at the age of two!

MRH: Tell us a bit about your journey in the hobby.

Gil: After the train set at two, my brother and I built an American Flyer layout and that lasted for a while. My brother decided to go into true S scale, and he wanted to abscond with all the American Flyer locomotives and cars too, which left me with nothing.

He asked me what I liked and I said, "I like the trains in Durango. Those were the first steam engines I remember seeing."

He said, "Well then, why don't you go narrow gauge?" So in 1972, I became an official Sn3 modeler.

MRH: If someone comes into your space, what are they going to find? How would you describe your layout to a visitor?

Gil: This is the Lost Creek branch of the D&RGW plus Utah Power and Light. It's a fictitious line meant to haul coal from the



2. Gil models the late fall, just as the trees have lost most of their leaves and the first snowfall could come at any time.

Lost Creek / Lost Lake area in Southern Utah and transport it to Salina on the Marysville branch of the D&RGW

MRH: And you modeled this how?

Gil: I model in Sn3, and I'm modeling the late era of narrow gauge around 1963-1964, depending on the automobiles I can find. And it's mainly right before they standard-gauged the branch so they could pull out more coal.

MRH: Why did you pick this to model?

Gil: The other places I considered modeling didn't work as well for me. There was a lot of untapped coal in Southern Utah – so

DRGW LOST CREEK BRANCH | 5

much so that the Union Pacific wanted to rebuild the Marysville branch to haul the coal out of the area. There were a lot of rumblings about that, but they were busy pulling coal out of the Powder River basin.

The coal in southern Utah has very low sulfur and very high BTU, making it ideal for power plants all over the United States. But nothing ever materialized.



DRGW LOST CREEK BRANCH | 6

I teach a watercolor class in Utah's Capitol Reef National Park area occasionally. The area has mountains, great sagebrush, and a lot of steep terrain that's just perfect for narrow gauge, which is what I wanted to model. And fictitiously, I wanted the Utah Power and Light to build a railroad in the 1909-ish era, when the D&RG was broke after building the Western Pacific.

I'm postulating they built a fictitious line using scrap D&RG

narrow gauge materials and it's lasted until 1963 when they're finally going to standard-gauge the line. I haven't seen anybody really model this kind of mountain desert narrow gauge with sagebrush and pine – and that's something I've always wanted to do.

MRH: Why that particular era and not some other era?

Gil: I model 1963 to 1964 because I built and modified a K-28 steamer, and I liked

3. One major yard on the layout is Loa, shown here with its prominent coaling tower, and a turntable and roundhouse in the distance.



4. At the northern end of Loa is this extensive oil dock. Gil postulates the region hosts some oil field pipelines making for this significant industry that takes up to a dozen oil tank cars at a time.



5. Gil has good loco fleet of PBL locos, such as 2-8-0 Rio Grande Southern C-19 #40 and 2-8-2 Rio Grande K-28 #473 here in Loa.

how it looked in 1963. So that became my benchmark. I also like the end of the D&RG narrow gauge era because they had converted standard gauge cars to haul pipe, which interests me.

I'm doing pipe trains now because there's oil and gas in my modeled region too. I'm running the pipe trains from Salina to Loa and the area around where they're doing the drilling and building the pipelines.

The coal goes in the opposite direction, coming out of Loa and the Lost Creek area. So we have loads going both ways. Then we have cattle, sheep, dry goods, and a few other things also going back and forth on the railroad.

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

Gil: We built this house, and it started out that I was going to have the whole basement plus my studio where I paint. But then my wife wanted an office down here as well. So I gave her a generous amount of space, and we also have storage rooms.

I had to put a wall up for my studio, and the contractor would not take out the windows in the basement because they were required by code. I didn't want any windows behind the layout, so I had to design around the windows, which is mainly covering them up somewhat.

I was left with about 900 square feet. I thought, well, I can do a double-deck layout because it will be on an incline. And this layout climbs in both directions. Actually, there's a summit, it doesn't just go from deck-to-deck. It climbs up a grade going out of Salina and also a slight upgrade going out of Loa – so there are grades both ways.

I wanted to run helper locomotives, and I'm using live loads, so the coal is going to take two of the big K class locomotives. Coming out of Salina, it may take a K class locomotive and a C class locomotive to get the trains up the hill – or if it's a big K class locomotive and the train's short enough, I could probably use one engine.

I haven't figured out the dispatching yet, but it's narrow gauge, so everything goes slowly.



Going uphill, the fastest you go is maybe 10 miles an hour, and downhill everything is eight miles an hour or slower. With the amount of track I have, it's going to take a long time to get from one point of the layout to the other. Plus some switching along the way in the yards.

MRH: When did you start construction?

Gil: I started construction around 2014. Before that, I finished the basement, and then I tried to design something I could visualize, something that would work. I came up with a few different plans but ended up on this one because it gave me the most running room.

MRH: What do you think of multideck?

Gil: I actually like the multi-deck. I prefer it because you get a longer linear run and you really don't notice the

6. Rio Grande 2-8-0 class 70 C-19 #340 and Rio Grande 2-8-2 K-27 #463 sit on the sand house and coaling tower lead in Loa.

upper deck unless something's moving along it. I have more of a shadow box going, and I would have done that if I had only a single deck.

I like it, but I do have to paint twice as much backdrop as I would otherwise! Since I paint all day as my profession, I really don't like painting backdrops at night, but I do it once in a while anyway. The good news is I can do it pretty quickly – I've learned some tricks as a professional railroad artist.

MRH: Did construction go like you're expected, and is it progressing as fast as you would like?

Gil: Nothing progressed as fast as I would have liked.



7. As the south end of the Loa yard, we find the caboose track and a couple spurs with some miscellaneous rolling stock parked on it.

When I started off, I was inventing everything new – so I invented a floating-shelf benchwork method – and the floating shelf would have worked perfectly had my walls been totally plumb. But there is some wave in the drywall and so it wasn't a perfect 90 degrees perpendicular to the floor. I had to work around some snags here and there.

And after I tried the floating benchwork, which is mainly most of the upper deck, I went to conventional benchwork for the lower deck, and for transitioning between the decks.

MRH: Did it go well?

Gil: I probably should have played around with the floating deck a bit more. That was really fast to construct and went up quickly. But, again, there were some drawbacks to it – the conventional benchwork and scenery is more sturdy and easier to wire.

You don't have to drill through two inches of foam and fish wire through, which I didn't really like, but it worked. I do like the newer conventional benchwork and plaster scenery – it's sturdy and it works.

MRH: What have been your greatest challenges in doing this layout?

Gil: My wife likes me to spend time with the family. I have four sons, and she likes me to be up with them, but my art studio's down here. I start here at eight in the morning and I'll easily work till six and then go have dinner and come back down and work on the layout until 10 or 11. She calls me "the basement dweller."

Instead of being in the basement all the time, it's important to go up and do things with the family, which is fine. I mean it's a hobby,

and I don't want to lose family time due to a hobby. Some of my sons will help, other times they will not. But if I drag them in to help, they'll come and help.

But as the layout progresses more, my wife likes to show it off to people too. But we're not quite to that stage yet: she's only showing it off to a few of her friends right now.

MRH: Did you have any challenges that came as a surprise?

Gil: I had no surprises whatsoever. Everything has gone as planned. I make my own track, the switches, the turnouts and things. I have also tried some of the new products that have come out in the last few years.

There are some products I like and some I don't. I'm finding sometimes the turnouts work really well and other times they don't; I just have no idea why.

MRH: What kind of track are you using?

Gil: I use MicroEngineering flex track. I've had Tomalco from past layouts – Tomalco flex track. I also handlay a lot. I build all my switches to custom-fit the area.

MRH: How many feet of main line?

Gil: My main line is 160 feet from Salina to where the Lost Creek mines will be.

MRH: What's your minimum radius on this layout?

Gil: My minimum radius is 32 inches. And the switches I use, my minimum is number seven.



8. Here is a closer view of the Loa sand house and coaling tower. The coaling tower chute actually operates, as does the coal elevator in the back of the tower.

MRH: What do you like most about this layout?

Gil: I love that it works. I love the way it looks. I've used non-conventional scenery methods. Since I built my first layout back in the 90s, the way to make scenery has changed. And I'm glad I waited a little longer because today's methods are much easier and the materials are much easier to work with.

I like getting the helpers together and moving stuff out of the roundhouse. Turning a loco on the turntable and taking it up to the coaling dock. The coaling dock works, the buckets go up and down and the chute goes up and down.

I can go over to the water tower (the spout goes up and down on that too) and fill up the tender with water and then go on the front

of a train, and do a brake test. Everything's programmed, everything's DCC with sound and we operate it like a real railroad.

MRH: What do you like least about the layout?

Gil: The layout is not finished. Since I'm working in my studio daily, I have the basement broken up. Two-thirds of the basement is the layout and the other third is my studio – but the layout will be encroaching into my studio very soon.

I don't have all the track work done. I have the Salina yard and the Lost Creek mines that I still need to get going on.

And the layout is too high. At the summit, I think it's 67 inches (five feet, seven inches) off the floor. I'm six-one, and a lot of people are shorter than I am. To work on the layout at that height, I need to build a bit of raised floor or have little stools for people to stand on.

That part just turned out to be too high because it was a design flaw by me. I wanted to have grades in both directions, so I needed more height.

Another mistake I made when building this house. The builder said, "We can build an eight-foot ceiling or a nine-foot ceiling, it's going to be the same price." And I said, "Well, from my architecture classes to have things cozy and warm, you want a lower ceiling."

So I opted for the lower ceiling and that was a mistake. Another foot of elevation would have been fantastic in here.

MRH: If you had it all to do over again, what would you do differently?

Gil: The first thing I would have done when I planned the house, I would have excavated the garage and had them put the garage



9. In this closeup view of the Loa ashpit, we see gondola #859 is almost ready to be hauled off for dumping, and replaced by an empty gondola.

over the basement. That would have given me another 800 square feet and I wouldn't have had to go into my studio for part of the layout, plus I could have longer yards.

I did talk to a contractor and said that he could tear up the garage and excavate for another \$5000 and have it all finished off. I'm still thinking that through, but I have to get my wife on board. To get where I am now has taken a while and it's enough for right now.

I would like a longer yard so I could have trains up to 20 cars. The typical train I'll be running instead is between 12 and 15, which for narrow gauge is actually pretty good. And for live loads, that'll probably max-out the locomotives pretty good.

MRH: Why did you select the height that you did?

Gil: When I was designing the layout, I wanted three-and-a-half percent grades. I also wanted the lower deck to be high enough that I could work underneath it without hitting my head.

I started off with the lower level. I set it at 42 inches because I knew that I didn't want to spend time under a layout much lower than that. I wanted easy access. I'm not a small person by any



means. I'm six-one and my wife says I'm fairly broad. I weigh a seventh of a ton. Fitting that under a smaller layout would be a pain, I thought. At this layout height, I can comfortably sit under the layout and work underneath if I need to.

I wanted a 42-inch level on the bottom but it turned out to be 43 because I made a mistake in the design – I started the bench-work at the height the track was supposed to be which made the track level an inch higher than planned. It's not bad and looks nice. It was a happy accident.

MRH: What are the heights of the two levels?

Gil: The lower level is 42 inches and the upper level goes from a height of 50 inches to 67 inches.

MRH: Why did you pick the grades you picked?

Gil: Most double-deck layouts have a flat bottom and a flat top, or they'll have a transition grade between one or the other. I have a summit area which I started to build because I knew I wanted to do the lower part after the upper

10. A closeup view of the south side of the Loa coaling tower.

part and I wanted to run grades both ways, so I could have helper locomotives going out of Salina and also out of Loa.

The ruling grade out of Salina up to Terill Pass is 2% and from Loa to Terill Pass it's 4%. It was supposed to be 3.5% but I miscalculated. Prototypical grades were 4%, sometimes a little steeper.

I wanted 3.5% just because the locomotives don't buck going downhill at 3.5%. Using the CAD plans, I built it to the elevation I thought it was supposed to be. However, when I put it on the grade meter, I had some 3.9% to 4% parts of the grades, and the locomotives still were fine going up and down. So the slightly steeper grade turned out to be no problem, and it is still prototypical.

Narrow gauge also has tight curves. I have a 32-inch radius curve, which in S scale is prototypical for narrow gauge.

MRH: What kind of DCC control system do you use?

Gil: I use the Digitrax Super Chief. I like radio control, and being hands-free following the locomotive around. I was using the PBL systems in DC with the sound, and with the PBL system, you have cylinder cocks, and you also had a drifting if you wanted to. This was back in the 1990s so I could drift going downhill.

My brother and Ted York picked up the Super Chief Digitrax system. And I thought, well, that worked out really well for their layout. I thought I'd do the same thing, hoping that when they came to operate on my layout, they would bring their own throttles. But I got the duplex system because they didn't make the Super Chief systems as they had. And so their throttles won't work on mine. I had to buy all new throttles anyway.

But I like wireless DCC because it works so well. Ted York says he has instantaneous control with all his locomotives when using wireless throttles. So I like that a lot.



11. The maintenance-of-way spur in Loa, with several pieces of MOW equipment parked on it.

MRH: What kind of decoders do use and why?

Gil: I am using Econami and Tsunami2s. I have some old Tsunamis in my locomotives too, and I have some TCS WOWSound decoders.

When I first started out with the sound, I used the PBL sound system and it had drift. When the sound decoders first started coming out, they didn't have drift. I wanted drift and cylinder cocks like the PBL sound system had.

It wasn't until the Econami, the Tsunami2, and the second generation WOWSound that they now have the cylinder cocks. And now I can drift downgrade. I didn't like trains chuffing down a 4% grade!

With the Tsunami2 and the Econami, you can just hit a button and you're into drift, and it drifts all the way down the grade. You have braking application too. And, of course you have the cylinder cocks when you're starting out. Just makes it more fun and more realistic!

So those are the decoders I'm using now.

MRH: How do you program the decoders?

Gil: I program them with JMRI. There's an Sn3 modeler up in the Seattle area, Dale Kreutzer, and he sent me a bunch of files of his locomotives. I've used them and adapted them. I've tweaked them to work for how I want them to work.

MRH: What's your least favorite part of doing a layout?

Gil: Painting the backdrop is my least favorite part. As I said, I paint every day for a living and it's tedious to go from painting six-eight hours on a painting, and then for a hobby, "Oh joy, I get to go paint some more."

And a lot of times, the projects I paint are really exciting and I can't wait to get up and work on the painting. But after six to eight hours of painting all day, it gets a little tiresome.

Painting the backdrop is actually the biggest pain. Everything else is really fun.

MRH: Any secrets to a motivating yourself to do it anyway?

Gil: I look at the backdrop and I say it needs to be done, and really I can probably crank out a backdrop that's five, six feet long in an hour. It's just getting started.

My secret is I turn on "Scheherazade" by Rimsky-Korsakov and that lasts almost an hour. It's one of my all-time favorite tunes. I can sit down and paint and listen to the Scheherazade theme and then when that's over, I'm done painting.

I would listen to TED talks and a few other things too, but often TED talks only last 10 or so minutes. It's a pain to keep getting up and changing the recording.



J. Fugate

TED TALKS

TED stands for Technology, Entertainment and Design and it's a presentation that's 18 minutes or less in length. TED is a nonprofit that organizes these talks. You can find many of them on YouTube – just search for "TED talk" and you will find talks covering many topics. Here's a link to a number of TED Talks on transportation topics including some specifically on railroads: ted.com/topics/transportation.



12. In this closeup view of the Loa MOW spur, we can see (from left-to-right) a tie-and-rail car, flanger OF, and kitchen car 04268.

MRH: What are your thoughts on layout size? Can a layout be too big?

Gil: Depending on what you want to do with the layout, I don't think any layout can be too big. It's just the time you have to work on it. For me, I have a space constraint and a wife constraint, so I can only work on it so often. I like working on it, but I'm finding that it goes a lot slower than I had anticipated.

But what I've done I think has turned out to be pretty neat. So I like it.

MRH: What are your thoughts on doing layout scenery?

Gil: Back in say 1975, Paul Scoles did a bunch of articles for the *[Narrow Gauge] Gazette* about scenery. I really liked how that process worked. So I tried to do the same thing using real dirt and



13. At the other end of the Loa MOW spur, we find this exquisite and nicely weathered model of a Jordon Spreader.

materials that are on hand. Since the 1970s, the materials have changed and have gotten so much easier.

My dog tore up his bed, and I found that the foam they were using in his bed to be the best out there! I use that to make my sagebrush. It turned out to work really neat and I haven't found any other foam that works quite that well.

MRH: Wow ... I guess we need to go get a dog, then!

Gil: Or at least get a dog's bed! When I started this, I knew I would need a lot of sagebrush. One of my favorite shots is of a helper locomotive of coasting past Lava water tank in Colorado on the way back to Alamosa. It's a tank just out in the middle of nowhere with sagebrush as far as the eye can see.

Since the area I'm modeling is on the same high desert plain, I knew I would need sagebrush and there was no commercial sagebrush out there. So I had to figure out how to make good sagebrush in quantity.

Also, back in the early nineties, I discovered a way to make aspens really easily. Since then, I updated it to have exfoliated aspens, which is aspens without any leaves.

So I'm pretty proud of those – I haven't seen them available commercially – at least in the US – and they look pretty neat.

MRH: What time of year are you modeling?

Gil: I am modeling late fall, which is difficult to model, and may be a mistake. I was going to try and use photo backdrops, but the window I'm modeling lasts about two weeks – and I never got out to take pictures.

At the time I'm modeling, some of the aspen trees still have leaves, but most of them do not.

Back in 1992 I went on an excursion out to Chama with some friends, and the night before it had snowed. But by mid-morning most of the snow was gone except in patches. And that was late fall.

I just really, really liked how that looked, and no one else had modeled it. So that's why I chose it, even if it is harder to model!

MRH: Interesting. What kind of locos do you use and do you have a preference?

Gil: All my locomotives are brass and everything is PBL. My first locomotive was an HO locomotive where I narrowed the wheels so it would run on the Sn3 track. That was back in the 70s before anything else was available.



I got my first real brass locomotive in 1978 from PFM. I still have that locomotive but I still need to put a decoder in it. Other than that, they're all PBL locomotives.

MRH: What type of rolling stock or do you prefer?

Gil: My rolling stock is PBL kits. And as Charlie Getz says, "Once you open the box of a PBL kit, you can't put everything back in the box, and so you have to build the car." That's actually very true!

I've also scratchbuilt some, and I had friends who have scratchbuilt cars for me where PBL has not yet come out with a kit. So my rolling stock is either scratchbuilt or PBL kits.

MRH: Okay. What about structures?

Gil: I have mainly scratchbuilt structures. I scratchbuilt the turntable, the roundhouse, and the sand house. The coaling tower is a PBL import that operates,

14. The water spout on the water tank at Terill Pass also operates, complete with proper sounds of lowering, raising, and filling the tender with water.

and the section house up on Terill Pass is a kit. Other than that, everything else was scratchbuilt.

MRH: How do you do your bridges?

Gil: Another guy, just 20 minutes north of me, has an Sn3 layout also. I told him I was going to make some bridges, so he said, “Well, I’ll cut you the timber forms.”

He spent one or two nights and he cut all the bents and cut all the stringers. I had to put everything together, but he gave me all the wood pre-cut. I have a box of pre-cut bridge wood I can use.

MRH: What about tunnels?

Gil: When I designed my layout, I had no tunnels on it. My wife wanted a tunnel on here, but I did not want a tunnel because if anything is going to go wrong, it’s going to happen inside a tunnel.

Then I found out I had made a little mistake coming off the upper level down to the lower level and I had to put in a spiral.

That came to me because I was working on a painting for a guy in Canada of the Selkirk going up Kicking Horse Pass where the spiral tunnels are.

To transition between the lower level and the upper level and to keep the radius at the 32-inch minimum, I had to encroach upon some of the space of the upper level, which lead to a tunnel.

So I have a tunnel, which my wife is happy about. I’m not thrilled about it, but it’s there.

MRH: Do you host regular operating sessions?

Gil: I do have people to come over to run trains. I’m building the layout so that it will operate. I figure about eight to 10 people could run it comfortably.



15. Gil used a method he calls “floating benchwork” to hold up the lightweight upper deck of his layout. Because the upper deck is made of extruded pink foam insulation, this simple frame nicely supports it and allows a minimal deck depth.

Since the layout’s not totally complete, I don’t have formal operating sessions yet. But there are people who want to come operate.

MRH: When you do operate either on this layout or on some of other layout, do you the vision of yourself as being the engineer or do you think of yourself more as a railfan?

Gil: On the layouts I operate, I’ve usually been an engineer, which I enjoy. Up at Ted York’s, he sticks me in the dispatcher hole, so I don’t get to run anything. I just have to call trains and send them out.

I like actually running trains from point A to point B when I get the opportunity. And this layout is set up so I'm running live loads. I'll have the Lost Creek area. We'll have live loads coming out of the mine.

I'll have a rotary dumper down in Salina, and it will be a continuous feed of coal. That's going to be more or less a game to see how many loads of coal we can get from the mines into the rotary dumper.

MRH: You obviously like Sn3, but is there an alter ego that would like a different scale or gauge?

Gil: I really like narrow gauge. I have an outlet for standard gauge in my brother's layout. And Ted York's Cajon Pass layout is close.



16. Gil is just starting the scenery on his spiral loop that connects the lower deck to the upper deck. This also houses the only tunnel on the Lost Creek branch.

I also get to paint large steam locomotives for people all over the world. So my standard-gauge fix is mainly on canvas, really. I do narrow-gauge paintings too. But most of everything I do is standard gauge.

I also get to do the big diesels, and I have painted things they've never manufactured. So that gets my fix on the standard gauge.

I like the narrow gauge because realistically the 4% grade and my 32-inch radius curve are prototypical and a 10-car train is prototypical for narrow gauge. Let's face it, running a Big Boy with a 10-car train just doesn't cut it in my book.

MRH: What's your philosophy on doing a layout well?

Gil: Do the best you can do by learning from other people. I was once told you learn what you can with your mind, and steal what you can with your eyes.

Every time I go to see someone else's layout, I see what they've done and I can pick up to either use or modify. If I see something that could be useful, I'll just ask. And they're usually helpful, and they'll explain, "Yeah, this is how I've done that."

So just do the best you can. We all have different abilities.

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

Gil: Just take in as much as you can. See different layouts, ask people about different scales. I'm dyed-in the-wool Sn3 because I love the heft of the locomotives and what they can do.

Get to know what you like as part of a hobby. I see some N scale layouts that I think, wow, that's really, really neat. I don't think I could get anything to run that well in N scale, but some people can. My hat's off to them.

MRH: And what do you hope convention-goers get out of this layout?

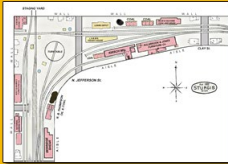
Gil: When they come to see the layout, they'll see I'm modeling the mundane, I'm modeling something that is not spectacular. I'm modeling sagebrush in an area that is void of population and people. That's what I hope they capture, is that here is a train running through pretty much nothing. And that's what I'm aiming for. ✓



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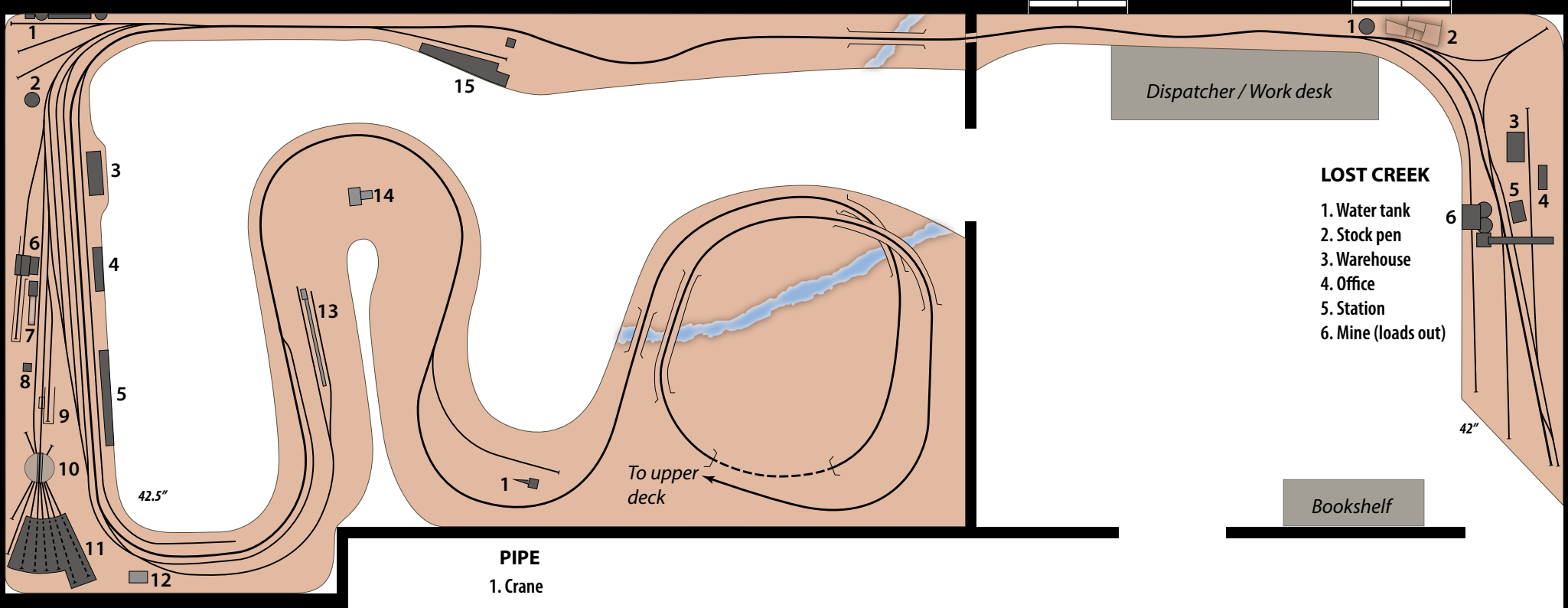


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17. Do check out Gil's website: gilbennett.com. You will find it loaded with superb paintings of railroad subjects.



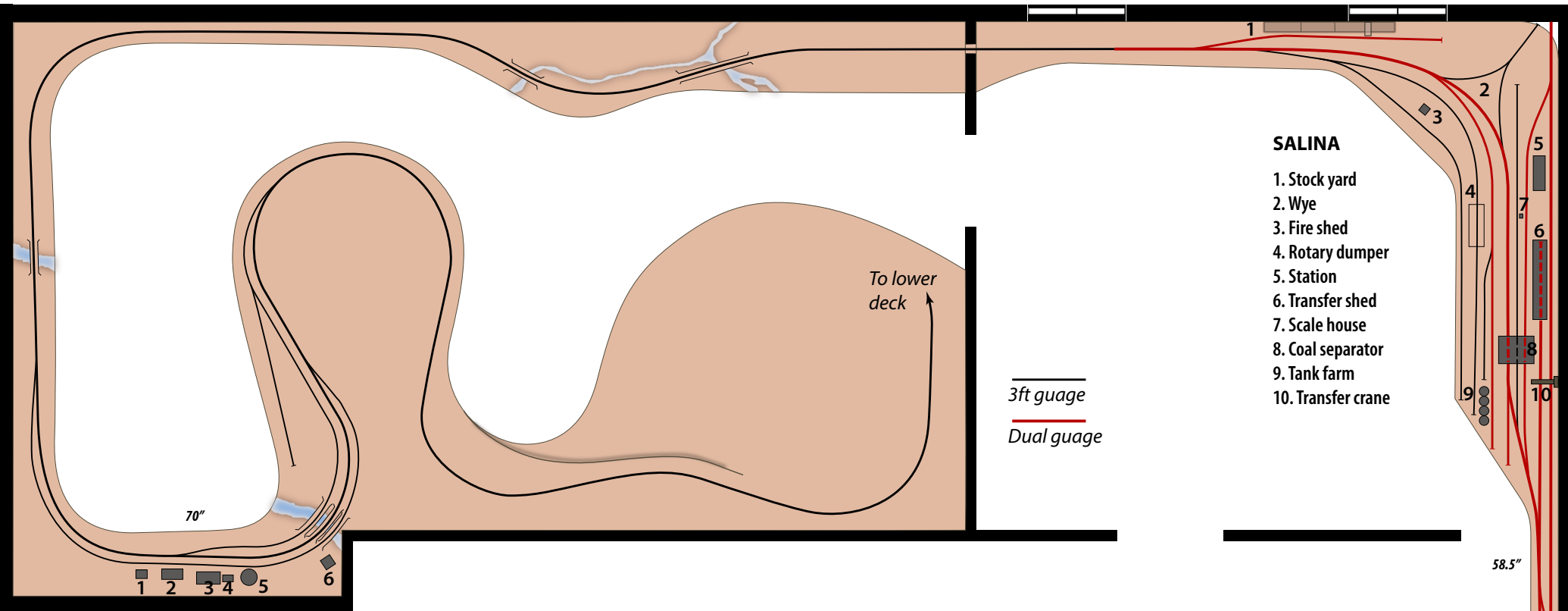
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|---------------|--------------------------|
| 1. Flour mill | 9. Ash pit |
| 2. Water tank | 10. Turntable |
| 3. Station | 11. Roundhouse |
| 4. Warehouse | 12. Yard office |
| 5. Warehouse | 13. Oil dock |
| 6. Coal tower | 14. Gas station |
| 7. Sand house | 15. Turkey packing plant |
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Gil Bennett's LOST CREEK BRANCH of the Denver & Rio Grande LOWER LEVEL



TERILL PASS

1. Tool shed
2. Hand car shed
3. Section house
4. Out house
5. Water tank
6. Pump house



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Gil Bennett's LOST CREEK BRANCH of the Denver & Rio Grande UPPER LEVEL



Model Railroad Hobbyist | May 2019

JACK BURGESS improves a scratchbuilder's basic tool, the Chopper ...

I STARTED SCRATCHBUILDING STRUCTURES, bridges, and railroad equipment over five decades ago when I got back into model railroading after abandoning it in my youth. Sometime in the 1970s, NorthWest Short Line (NWSL) introduced the Chopper tool [1]. I bought one because my scratchbuilding efforts were continuing to expand.

The NWSL Chopper is a basic tool that most scratchbuilders probably own. It allows one to “chop” or cut any number of pieces of stripwood or styrene strips to exactly the same length.

Set a “stop” to the desired length, push the stripwood or styrene strip tight to the fence, slide it to the stop, and cut the piece to length along with all the other pieces you need. Unlike its competitor, the NWSL Chopper is completely manufactured in the USA, including the razor blade.

One obvious problem with the first version of the Chopper was that the base for the tool was a square of Masonite. The surface of that Masonite tended to deteriorate from years of the razor blade cutting into it. The result was that the styrene or wood piece being cut would be pushed into the depression in the Masonite, compromising the cut.

The NWSL solution was the Chopper II [2]. Unlike the first version, this model used a cast metal base plate which incorporated a self-healing cutting mat. I purchased the Chopper II as soon as it was released, although I tend to use the original model with some of my own modifications.

I've also modified the Chopper II and have built three Chopper clones.

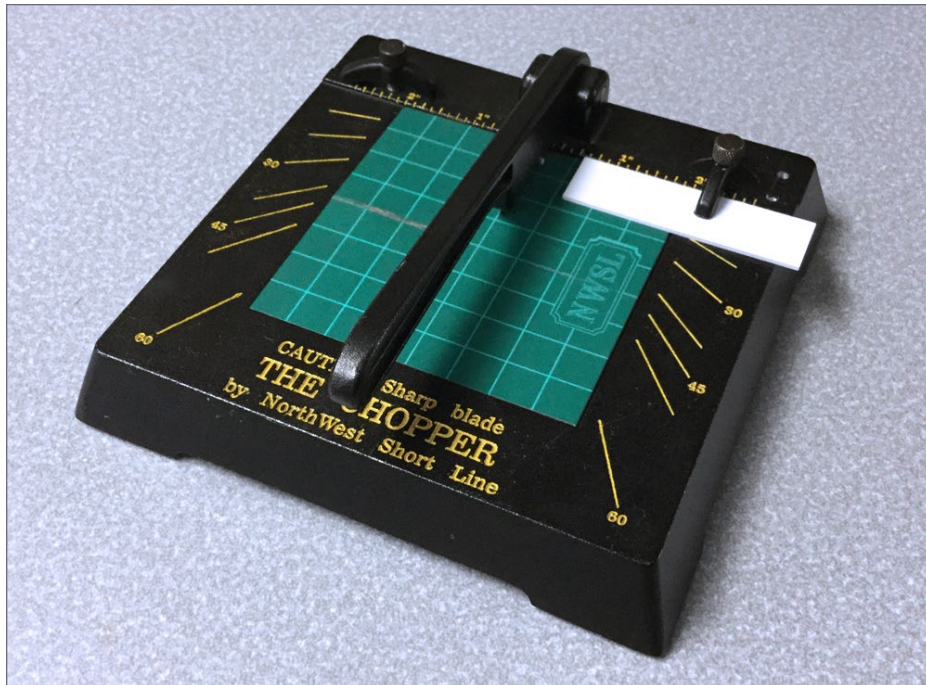


1. My original Chopper with a riser added under the handle mounting as part of my first modification project. This tool shows its decades of use!

Modifying the original Chopper

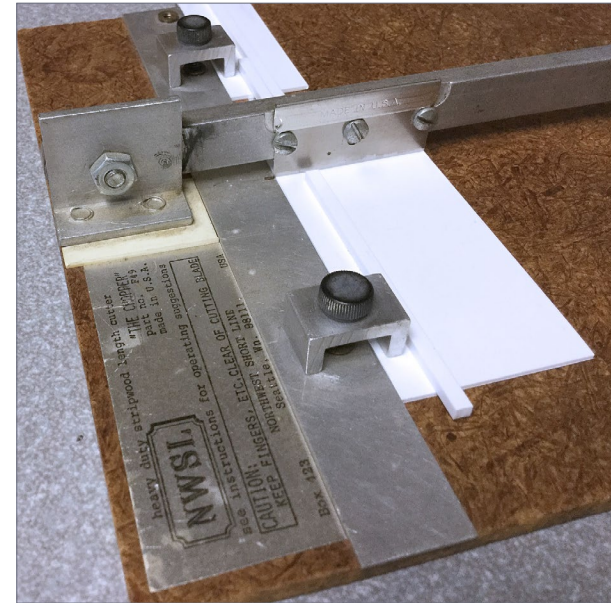
Long before the Chopper II was released, I realized that the Masonite base deterioration was causing problems. My solution was to make a new cutting surface for the Chopper blade which also included a new fence.

I planned to use a piece of 0.040" styrene for the new cutting base. This meant the Chopper cutter needed to be raised 0.040" so the razor blade would be flush with the new cutting base. I cut a piece of 0.040" thick styrene and drilled it to fit under the base of the cutter [3].



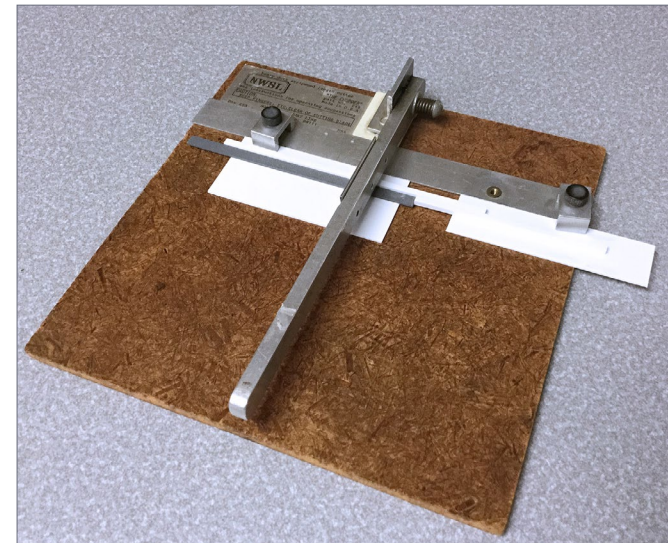
2. My Chopper II with the worn cutting map already turned 90 degrees due to use.

The new .040" styrene cutting base is about 3.25 by 1.5 inches.



The fence on the replacement base needs to be positioned so that the Chopper clamps can hold it in place. I used 0.125" x 0.100"

3. A closer look at the 0.040" riser that elevates the handle assembly to match the new 0.040"-thick cutting base.



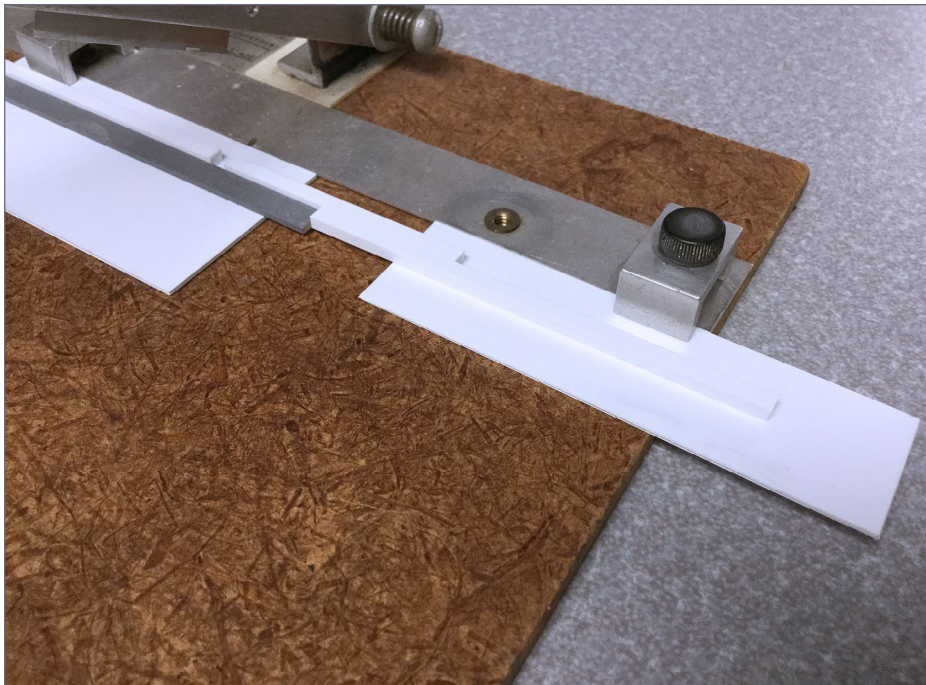
4. My Chopper with the new cutting board under the blade and new stop on the right. Note that I am using a large piece of gray painted stripwood for these photos so it is more obvious.

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styrene (1/8" wide) for the fence and positioned 1/8" from the back edge of the base and parallel to that back edge [4].

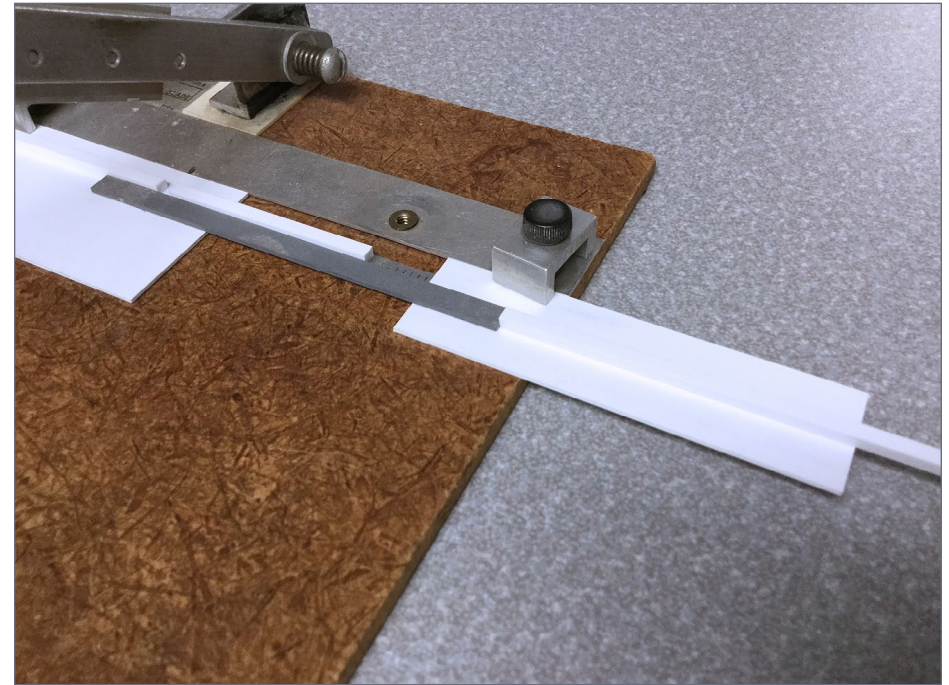
While it would be easy to have the movable "stop" be a simple piece of styrene, I designed it so that the "stop" is long enough to push all of the way up to the razor blade to allow very short pieces of material to be cut to length [5].

It is also reversible to accommodate longer pieces of material to be cut to length [6]. While the photos show how the design works, dimensioned plans for the parts are available in the bonus extras: [download the bonus extra here](#).



5. Here is the reversible stop step for cutting shorter pieces of material.

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6. Now the stop has been turned end-for-end and is positioned to cut longer pieces of material.

Additional cutting bases

Over the years, I have made many special bases and fences for my Chopper for special projects. One such task was to cut several ceiling joists to a fixed length with the same eave cut-off angle on each end. Simple!

Take another piece of 0.040" styrene and fabricate another base/fence assembly using the roof eave cut-off angle. A stop was added to the fence [7].

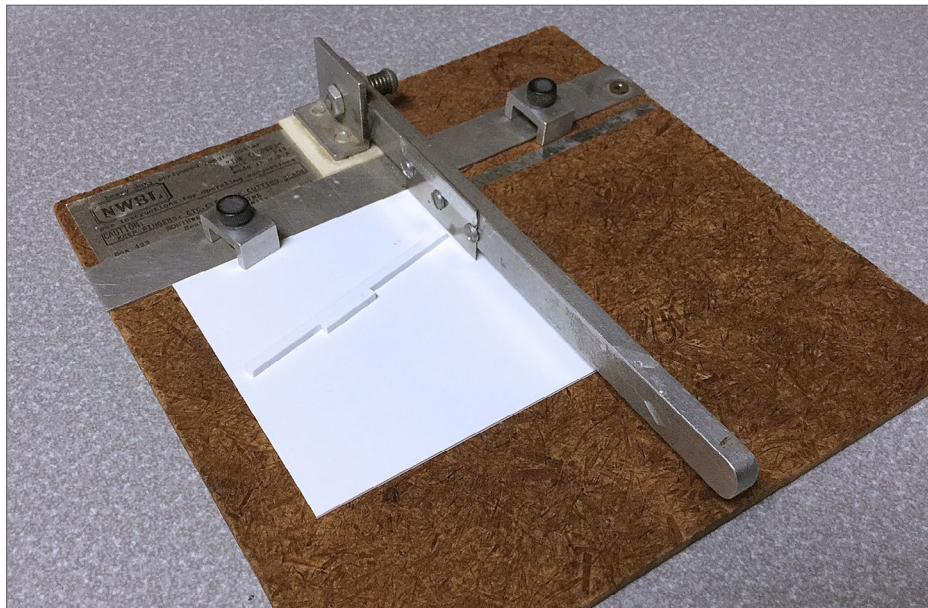
Cut the first piece of styrene or stripwood to the correct eave angle by holding it to the backside of the fence and cutting

off the end [8]. Then move it to the front of the fence, turn it end for end, push it to the fence, and cut it to length [9]. Check the flipped piece before cutting to be sure the cut ends will be parallel.

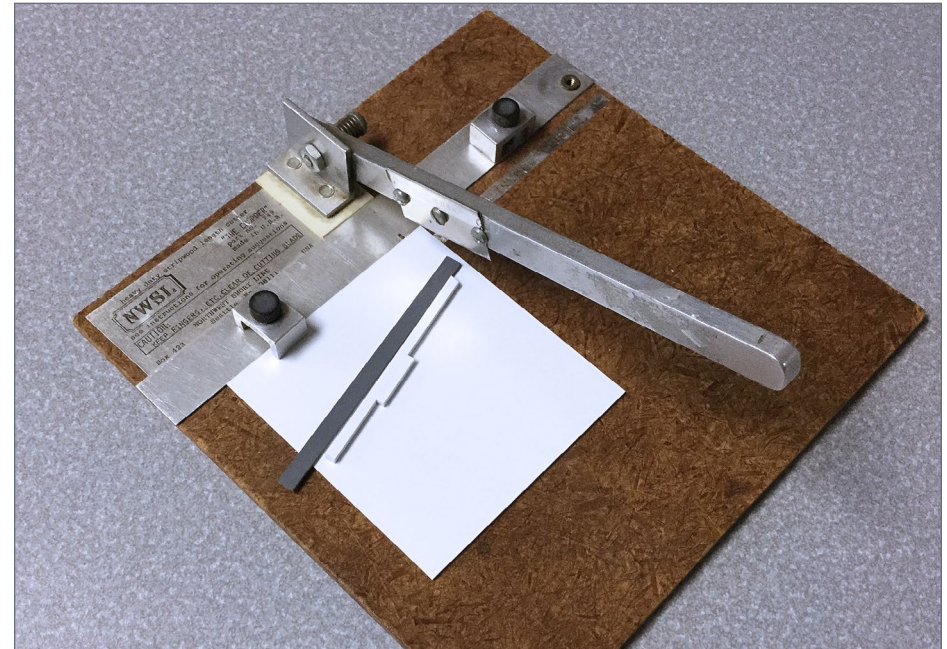
If the rafter is too long or too short, simply slide the base/fence assembly closer or farther from the blade to result in the correct length.

Another tool

The Chopper was designed to cut a number of pieces of stripwood or styrene strip to the exact same length. But sometimes



7. This is a custom cutting base for making angled cuts. The fence glued to the cutting base is at the angle required. A stop is bonded to the cutting base to result in multiple parts with both ends cut to the desired angle.



8. The stripwood to be cut is placed on the back side of the fence for the first cut.

all you need is to cut a single piece of stripwood or styrene strip to a marked length with a square end.

You can certainly do that with either the original Chopper or the Chopper II. That often means cleaning out a spot on my workbench to place the Chopper to make this simple square cut.

My solution is a simple version of the Chopper [10]. The NWSL handle assembly for the original Chopper is available as Item 4914-4. I mounted this assembly on a piece of 0.125" styrene measuring about 2½" wide by 4" long. I held a drafting square up to the razor blade while bonding the fence in place to make sure that they were perpendicular to each other [11].

Now when I need to cut a piece of stripwood or styrene strip with right angle ends to a certain length, I use this tool. It is easy to clean a space for it on my cluttered workbench.

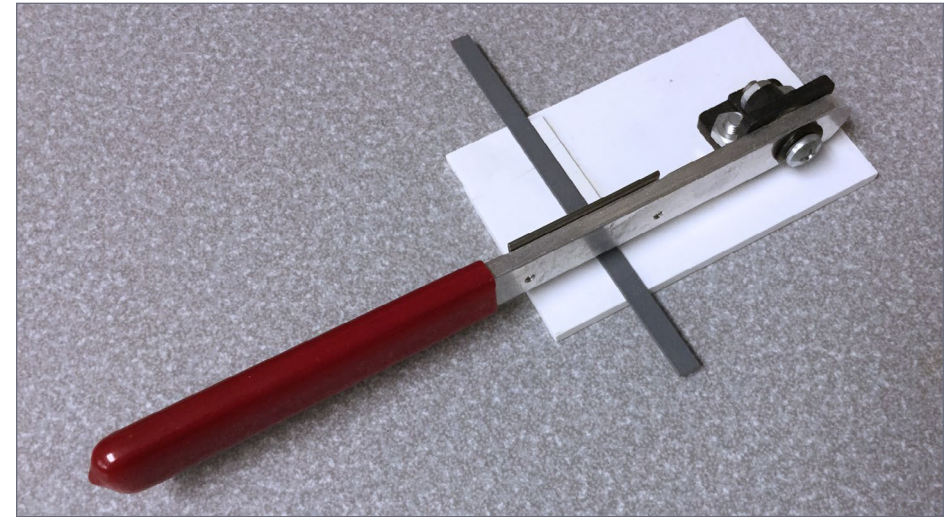
Note that the small base of the tool makes it more effective in cutting thin pieces of styrene or stripwood. If you try to cut thick material, the back end of the tool will tend to rise.

And another tool

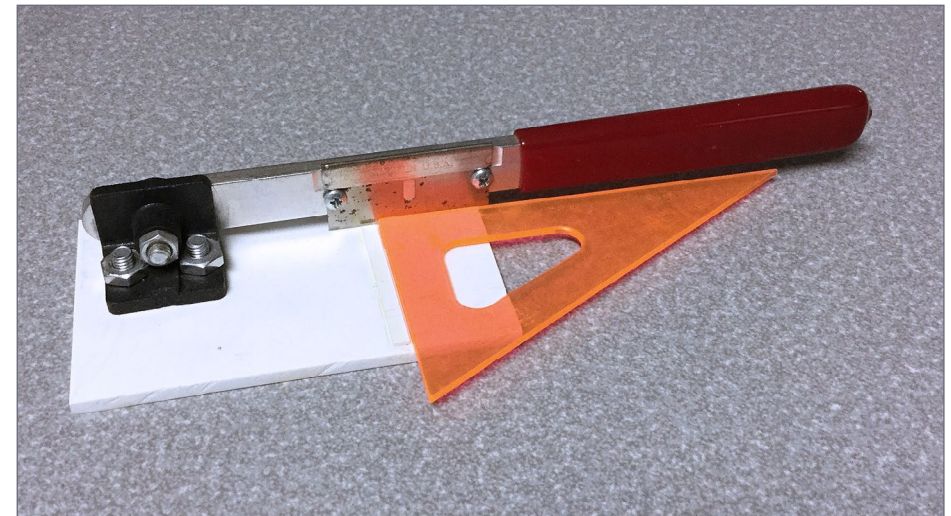
The way that the stop is held down by the piece of aluminum U-channel and a screw (Chopper I) or a casting and a screw (Chopper II) has long frustrated me.



9. It is then reversed and the cut end slid up to the stop for the next cut. The piece can then be turned over and pushed up to the stop for the next cut.



10. This tool to just cut a single piece of material to a desired length.



11. This shows how to ensure that the fence is at a right angle to the razor blade.

I often mark the cut position on a piece of styrene or stripwood, set the stop, and cut it -- to find out that it is a couple of thousands too long or too short. That means that I need to loosen the screw holding the clamp assembly down tight and slide the stop ever so slightly forward or backward.

While most might overlook such a trivial error, I can't ignore it. I sometimes end up resetting the stop multiple times to result in the exact part length I need. What I needed was a stop design that could be clamped down and then still be moved slightly to make small adjustments.

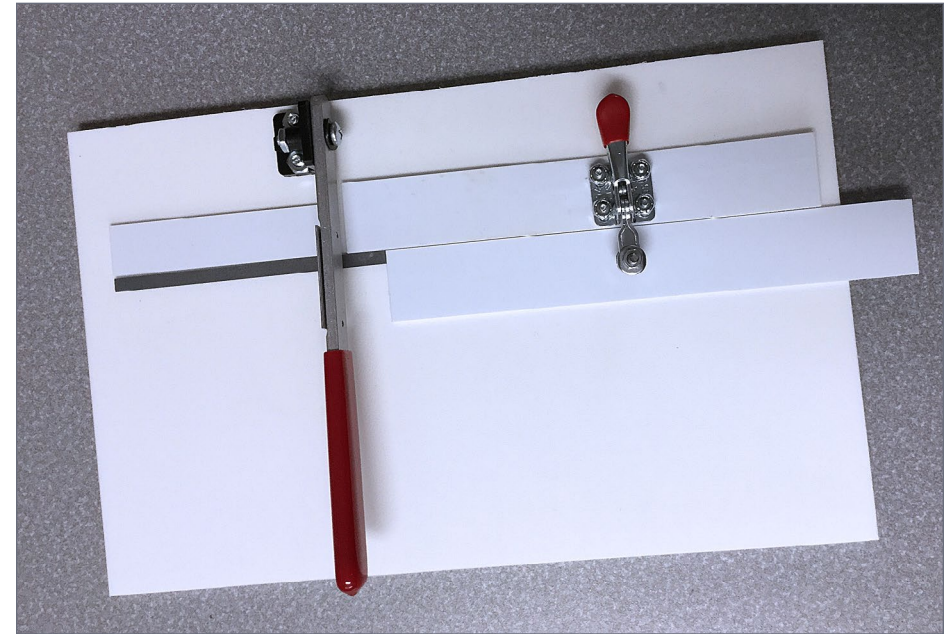
My thinking migrated to somehow incorporating a cross slide on which the handle assembly could be moved left or right up to 0.010" after locking the stop.

Since I couldn't come up with a workable design using a cross slide, I began thinking about a completely different approach. If a piece of 1/4" wide styrene (a slider) could be held in place between the movable stop and the fence, it might be possible to slide it only slightly, solving the problem. That would require a different type of holding clamp since it needed to be only long enough to only to the movable stop.

The base for this tool is a 7" by 12" piece of white Star Board cut to size by TAP Plastics. The fence is 0.060" thick styrene, 3/4" wide to the left of the NWSL handle assembly and 1" wide to the right [12].

The clamp for the moveable stop is a hold-down toggle clamp, item No. 5128A63, purchased online from McMaster-Carr (www.mcmaster.com). I had to add spacer washers between the red rubber stop and the arm to get enough pressure on the moveable stop [13, 14].

Unfortunately, that design detail didn't work out since the slider wasn't held tight enough to the fence. However, the use of the



12. This experimental tool is set up to cut a piece of stripwood. The moveable fence is held in place with a hold-down toggle clamp. Holding a piece of 1/4" material (a slider) between the stop and the fence didn't work out.

hold-down toggle clamp was very successful, which led to another variation.

Modifying the Chopper II

It was relatively easy to replace the factory clamp on a Chopper II with another hold-down toggle clamp. I drilled the hole for the screw for the factory clamp for a 6-32 bolt, mounted the hold-down clamp, and then drilled holes for the other three bolts. Spacers are needed under the rear of the clamp due to the short fence. This has worked very well [15, 16].

Going beyond the Chopper II

Several decades ago, I received an unsolicited, large 24" x 24" chopper table which featured a way to cut both square and

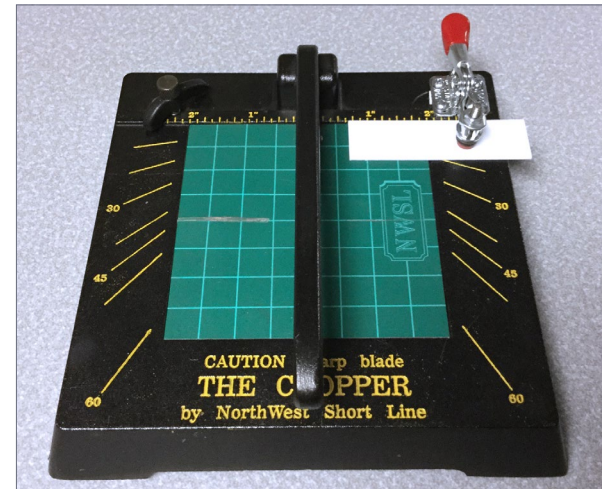


13. A close-up of the hold-down toggle clamp in the clamped position.

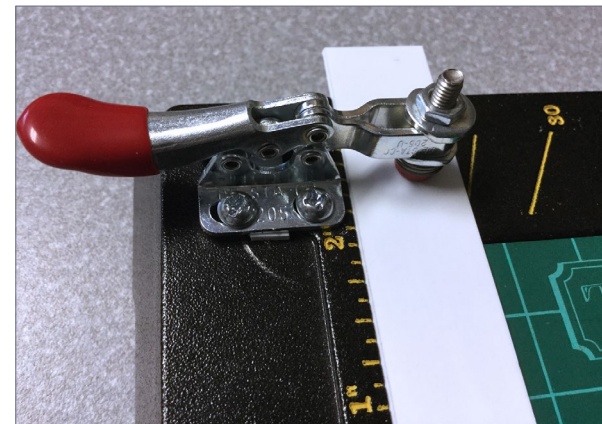


14. Here the hold-down toggle clamp is in the released position.

angled pieces. While innovative, it was much too large to fit into the space that I had in my workshop at the time and I set it aside. But a couple of years ago, I realized that the unique fence and stop on this tool could become the main element of a "new and larger" tool [17].



15. A hold-down toggle clamp retro-fitted to my Chopper II.

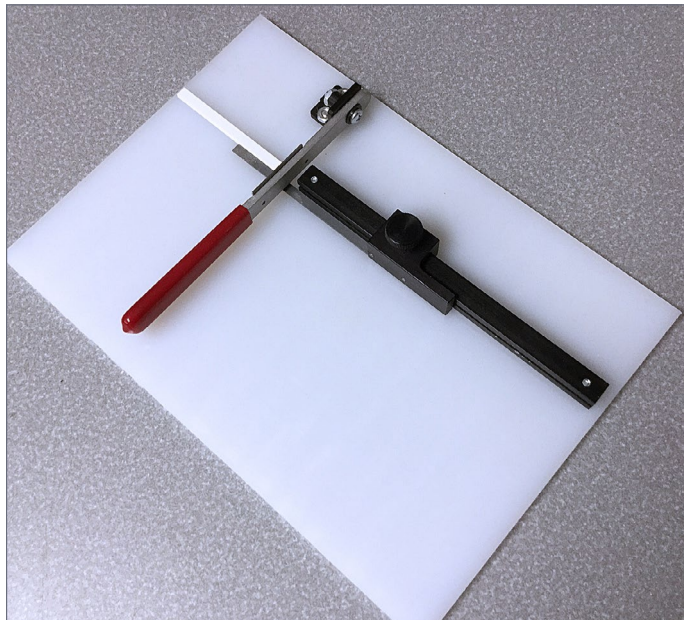


16. A close-up of the hold-down toggle clamp.

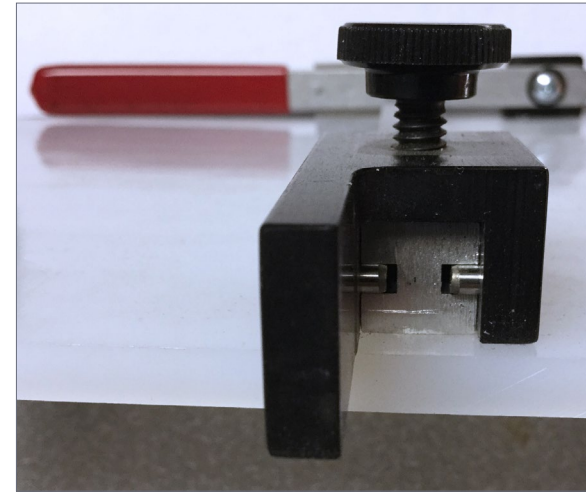
This fence is a piece of $\frac{1}{2}$ " x $\frac{1}{2}$ " aluminum H channel. The sliding "stop" features a pair of pins which engage the slots of the H channel [18]. The result moves very smoothly and provides an easy way to position the stop for cuts and to make very small adjustments [19].

I used a 12" x 12" piece of $\frac{1}{4}$ " thick UHMW (Ultra High Molecular Weight Polyethylene) from Amazon for the base of my new tool. This material is resistance to damage from the cutting blade and should last a very long time. The blade assembly is another NWSL handle assembly. It was attached to the base using the provided bolts and nuts.

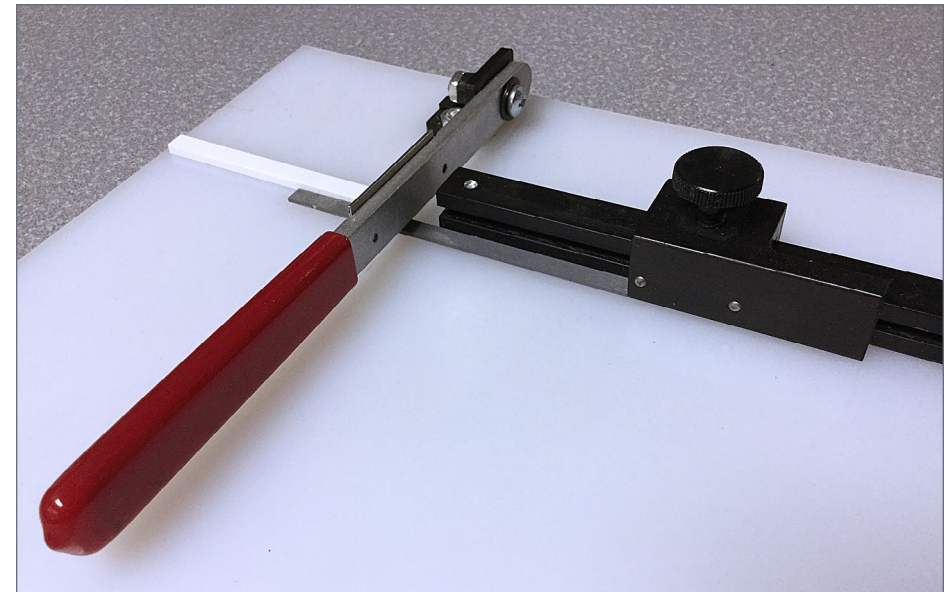
The H channel was attached to the base using 6-32 flat head bolts inserted from below. Holes were drilled through both ends of the H channel and tapped for these bolts.



17. My "going beyond" tool.



18. This close-up shows the sliding stop pushed beyond the right end of the tool. The two pins on the black sliding stop engage the aluminum H channel which is partially visible below the lock bolt. Turning that lock bolt will lock the sliding stop in place.



19. A closer view shows the fence and the sliding stop. You can see a piece of painted stripwood under the razor blade and up against the stop.

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A piece of Evergreen .125" x .250" styrene strip was used for the fence to the left of the razor blade. Rather than glue it to the UHMW base, I used the same industrial-strength 3/4" wide double-sided tape I mentioned in my article on El Portal in the February 2018 MRH. It is made by Bron Tapes and called Killer Red. It is available from eBay by searching for "Bron Killer Red Tape".

This tool is a pleasure to use since it is so easy to set the position of the stop. I will often use my digital calipers to measure the actual length of a piece I need to cut, and then set the stop on the tool with my calipers by measuring from the face of the razor blade.

But even with these modifications, I still use my original Choppers to make angled cuts and with special jigs for certain projects. ✓

NOTE: North West Short Line has announced that, after 60 years in business, they will cease operations effective August 30th, 2019. The company will continue to take orders for in-stock products until July 1st, 2019. If you want to purchase any NWSL handle assemblies, you will need to do that before July 1.

Disclaimer: I love good tools and don't hesitate to invest in them.



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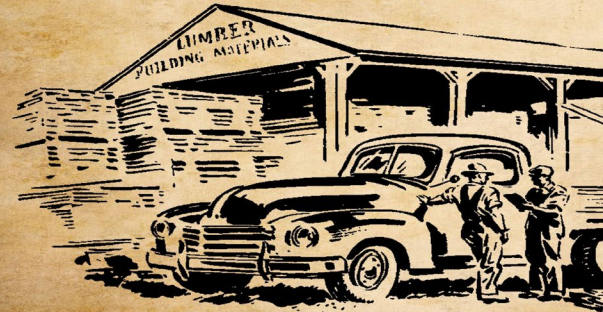
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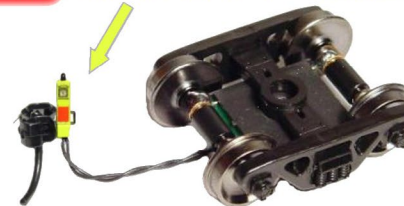
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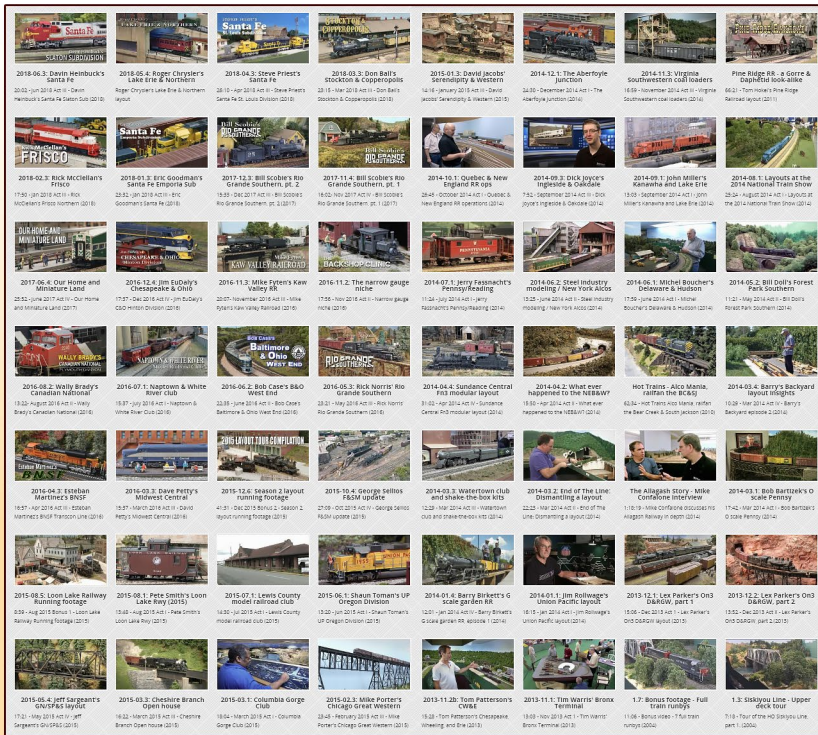
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Tarped loads for gondolas

This month in *Savvy Modeler Online*, we have this superb 13-minute how-to on making some simple but realistic-looking tarped gondola loads by YouTube modeler **DansRailroad2011**. This is just one of the many videos Dan has done – and if you're worried there's no young guys in the hobby, think again! ■



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INDUSTRY NEWS

Craig Walker and John Sheridan join Rapido

Craig Walker and John Sheridan, two thoroughly experienced members of the model railroad industry, have joined the staff of **Rapido Trains**. The announcement was made by Jason Shron, founder and president of the Canadian-based company. Craig Walker's background includes more than 20 years in the model railroad industry, including both marketing and product development at Athearn and Microscale. Craig will focus on increasing Rapido's penetration in the American market. John Sheridan has been consulting in the model railroad industry for many years and is responsible for the design of several models currently on the market under a variety of brand names including Rapido. Now that he is a full time employee at Rapido, John will concentrate on product design and development ...

▶ THE LATEST MODEL RAILROAD PRODUCTS, NEWS & EVENTS

Aztec Closing

John Claudino, founder of **Aztec**, has announced his retirement and the closing of his track cleaning car business. John launched Aztec (which stands for A to Z technology) as a precision machine shop in California's Silicon Valley. In 1987 Aztec began producing N scale freight cars in unique paint schemes. The original Track Star track cleaning car, which uses a large free rolling abrasive wheel set an angle to the track, was introduced in 1991. The mildly abrasive roller scrubs the rail heads clean as the train is moving. The company moved to Carson City, Nevada in 1996 ...

Stephen Priest

Stephen Priest, who resigned his position as editor of *Railroad Model Craftsman* in December to become marketing manager of ScaleTrains.com, has decided the move was not to his liking. In early April ScaleTrains.com announced that Priest had changed his mind and would be returning to his home in Missouri. Meanwhile, Otto Vondrak, who had been associate editor of *Railfan & Railroad Magazine*, has replaced Priest as editor of *Railroad Model Craftsman* ...

NEW CLUB CARS



The **Southern Pacific Historical and Technical Society** is selling an HO scale ready-to-run model that replicates the 1957 version of Southern Pacific's

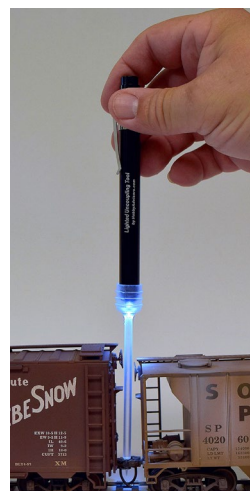
Pullman Standard PS-2 twin-bay covered hopper. The model, produced for SPHTS by Kadee, represents the March 1957 as-delivered version of the class H-70-16 prototype which featured red lettering. The real cars saw service throughout the SP system until the end, and some still exist today in Union Pacific Maintenance of Way service. To order go to sphts.myshopify.com/collections/models/products/1957-h-70-16-rtr-hopper-cars.



The South Shore Model Railroad Club of Hingham, MA, is selling an HO scale gondola

decorated for ASWX-American Steel & Wire. The model replicates a Bethlehem 52-foot 6-inch 70-ton riveted prototype. Five road numbers are available for the HO scale ready-to-run model that was produced for SSMR by Tangent Scale Models. For more information visit www.ssmrc.org/clubcars.htm.

NEW PRODUCTS FOR ALL SCALES

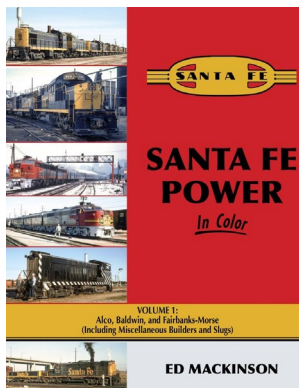
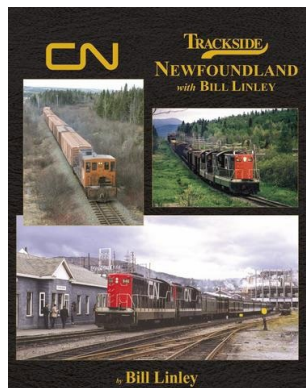


HobbyAdvisors is selling a lighted uncoupling tool suitable for use with N, HO, S, and O scale equipment. The device consists of a molded translucent coupler pick that transmits light directly onto the coupler. With the pick in position, a slight twist will uncouple most popular knuckle couplers. The handle has a push-push switch, battery compartment,

pocket clip, and screw-on translucent pick attachment. Power is supplied by two AAA batteries (not included). To purchase, search eBay for HobbyAdvisors.



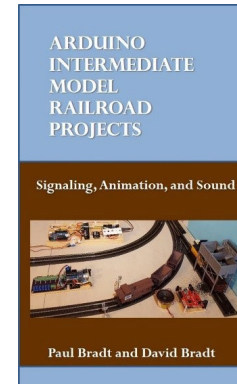
Labelle-Lubricants Division of Con-Cor International, has reformulated (and repackaged) Labelle 430-107 hobby lubricant. Although the primary application of Labelle 107 synthetic lubricant is for the model train market, some of the shafts of newer drones and other radio-control hobby products run at very high temperature. To meet that need, Labelle 107 has been reformulated for temperatures ranging from -45F to +500F. The viscosity remains unchanged. Labelle 107 is available at Ace Hardware and most hobby dealers. For additional information visit con-cor.com.



New titles from **Morning Sun Books** include *CN Tracksides in Newfoundland* by life-long Canadian railway photographer Bill Linley, who captures the history and variety

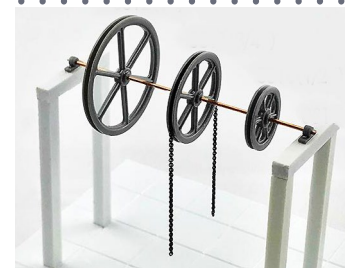
of the main line, branches, locomotives, and rolling stock. A comprehensive diesel roster and pictures of the railway's ferries and coastal boats are included. Also new from Morning Sun is *Santa*

Fe Power in Color Volume 1, edited by Ed Mackinson. This volume covers Santa Fe's diverse and fascinating diesel power including Alco, Baldwin, & Fairbanks Morse. For more information contact a dealer or visit morningsunbooks.com.



P&D Analytics has announced the availability of *Arduino Intermediate Model Railroad Projects*. Providing detailed information on several model railroad projects that include the Arduino, projects include Automatic Block Signaling, animation, servo turnout control, and adding sound to railroad activities. Primary authors are Paul and David Bradt, with contributions and examples provided by Dennis Drury, Steve Spence, and Tom Ward. The book is available in softcover and Kindle from www.amazon.com/Arduino-Intermediate-Model-Railroad-Projects/dp/1794564144.

In response to a high rate of repair work on decoders due to improper soldering techniques, **SoundTraxx** has posted a free how-to video titled *Soldering to PNP Decoders*. Damage to the circuit board can be caused by using the wrong solder, the wrong flux, or a soldering iron that is too powerful. The video can be accessed at view.bbsv1.net/bbext/?p=land&id=866AED7F535129B7E0530100007F6794&vid=1936fdb5-94bf-4df9-ba4d-38979da4c39a.



Tichy Train Group is selling spoked sheaves in .5, .75, and 1-inch diameter. The sheaves come with pillow blocks which are also available separately. The sheaves are typical of those used to handle cable or chain in mines, on

cranes, barges, lifts, pile drivers, and other industrial equipment. The sheaves and pillow blocks are molded in gray styrene and are cored for .032 wire. For additional information contact a dealer or visit tichytrainsgroup.com.

LARGE SCALE PRODUCT NEWS



Ozark Miniatures is selling a 1:20.3 scale kit for a Denver, South Park & Pacific waycar. The wood body kit includes truck components, wheelsets, link & pin couplers, and decals. For details visit ozarkminiatures.com.

O SCALE PRODUCT NEWS



Aspen Modeling Company offers a selection of O scale figures including this cowboy pulling on his boots. The website includes a tutorial on painting the figures.

For additional information visit theaspenmodelingcompany.com.



Atlas O has released an ACF 60-foot auto parts boxcar.

Features on the O scale Master series model include

sliding doors and separately applied ladders, door handles, end safety platforms, and 70-ton diecast sprung roller-bearing trucks. Road names are Baltimore & Ohio, Rock Island, Grand Trunk Western, Union Pacific, Canadian National, Conrail, Norfolk &

Western, White River Foodservice, Detroit & Toledo Shoreline, and Western Maryland. An undecorated model is also available.



Also new is a Trainman series triple-bay PS-2 covered hopper inspired by a prototype introduced by Pullman Standard in 1952. The

O scale model features roller bearing trucks with rotating bearing caps, separately applied ladders, and brake line detail. In addition to Illinois Central Gulf shown, available road names are Erie Lackawanna, Burlington Northern, Chessie System (C&O), and Jack Frost. An undecorated version is also available. All Atlas O models are available for either 3-rail or 2-rail operation. For additional information contact a dealer or visit atlaso.com.

HO SCALE PRODUCT NEWS



Accurail has released several new kits for HO scale freight cars including this Chicago Great

Western PS 4750 cu. ft. triple-bay covered hopper. The model is based on a prototype built by Pullman Standard in 1966.



Also new from Accurail is a kit for this Canadian Pacific Railway 50-foot welded steel boxcar with a combi-

nation of plug and sliding doors.



The prototype of this 36-foot Fowler wood boxcar decorated for Toledo, St. Louis & Western 'Clover

Leaf Route' was built in December 1914. Accurail's HO scale kit includes period trucks and a horizontal brake wheel that mounts on a vertical shaft.



Accurail's HO scale version of this 40-foot Michigan Central single-sheathed wood boxcar follows a

prototype built in February 1919. The car has wood doors and ends.



The prototype of Accurail's HO scale kit for this 40-foot Swift Live Stock Express stock car was

originally placed in service in 1928.



Completing Accurail's list of new HO kits is this 36-foot double-sheathed wood boxcar decorated

for Cleveland, Cincinnati, Chicago & St Louis "Big Four". The HO scale kit replicates the wood doors, wood ends, and fishbelly steel underframe of the 1915 prototype. All Accurail HO scale kits come with appropriate trucks and AccuMate knuckle couplers. For additional information contact a dealer or visit accurail.com.



Development work on the HO scale version of EMD's SD90MAC-H Phase II locomotive is underway at **Athearn** with delivery expected in March 2020. This will be the first

model released in Athearn's recently announced Genesis 2.0 series

of products that feature several road-specific details. The initial release will include an EMD demonstrator unit of the SD90MAC-H Phase II locomotive. Genesis 2.0 features on the demo include three fans on the radiator housing, a window in the nose door, pilot-mounted ditch lights, and a unique demo fuel tank.



A Canadian Pacific version of the SD90MAC-H Phase II will have cab side rain gutters rather than sun shades, raised walkway grates for snow service, CP-specific roof antennas,

a window in the nose door, and CP designated locations for the MU receptacles.



Features unique to the Union Pacific version will include an antenna dome on cab roof, no window in the nose door, and extended sun shades on the cab windows.



A SD90MAC-H Phase II operating in Australia is included in Athearn's initial release. In addition to being repainted for FMG-Fortescue Metals Group,

modifications to the former Union Pacific locomotive to meet Australian standards include the addition of a safety rail in the middle of handrails, FMG electrical junction boxes on the pilot, and special dual train line air hoses.

All road names of the SD90MAC-H Phase II will have rubber MU hoses, train line air hose, see-through cab windows, detailed cab

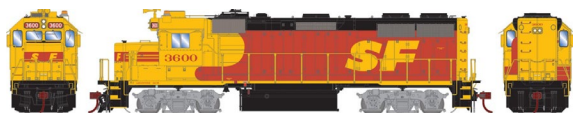
interior, Celcon handrails, windshield wipers, lift rings, wire grab irons, fuel tank fillers, fuel gauges, breather pipes, sander lines, and LED lighting. Additional Genesis 2.0 features include etched see-through walkway steps, illuminated number boards, and illuminated ground lights. DCC sound models will come with sugar cube speakers and a full-feature Tsunami2 sound decoder with EMD 265H prime mover sounds by SoundTraxx.



Genesis models coming from Athearn next March include a group of EMD GP39-2 diesel units. Road names will be MKT, Burlington Northern, Soo Line, D&H Guilford, CSX, and Santa Fe in two schemes.



The Burlington Northern version represents Phase IIb GP39-2 units with a ratchet hand brake in the 88-inch nose, 3600 gallon fuel tank, and Blomberg-M trucks with leaf springs.



The ATSF versions represent Phase 1 GP39-2 production. They will be available decorated in the Kodachrome scheme as well as in Santa Fe's standard blue and yellow livery. Road specific details include switcher steps, a low plow at the front, an illuminated Stratolite beacon, a 2900-gallon fuel tank, and Blomberg-M trucks.

Delaware & Hudson versions are former RDG Phase 1 GP39-2 units. Spotting features include a large Sinclair antenna, cab rain gutters, a 2600-gallon fuel tank, and Blomberg-B trucks. A patched

Genesis models coming from Athearn next March include a

The Burlington Northern version represents Phase IIb

The ATSF versions represent Phase 1 GP39-2 production. They will be available decorated in the Kodachrome scheme as well as in



CSX model represents a former Guilford D&H ex-RDG unit with the same road specific details as the D&H version. Genesis GP39-2 locomotives will be available for DC operation with DCC-ready plug-and-play technology for installation of an aftermarket DCC decoder. GP39-2s with factory installed DCC feature SoundTraxx Tsunami2 sound.



Ready-to-Roll models coming from Athearn next March include a 40-foot boxcar modernized with

shortened ladders, and running boards removed. Road names will be Chicago, Burlington & Quincy; Minneapolis, Northfield & Southern; Delaware & Hudson, Santa Fe, Ontario Northland, Seaboard Coast Line, and US Air Force.



Athearn's March 2020 production schedule includes the release of Ortner five-bay rapid

discharge hopper cars. Cars in this run will include removable loads, wire grab irons, and appropriate trucks with machined metal wheelsets. In addition to the Santa Fe unit shown, road names will be Swindell-Dressler Energy, Union Pacific,



R. Bale

ORTNER CARS

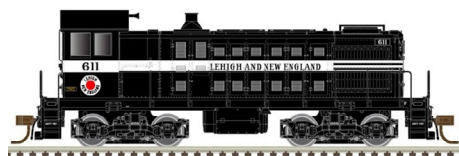
The unit train concept was pioneered by Ortner Freight Car Co. in 1960 as an effort to streamline bulk cargo unloading. Robert Ortner, developer of the rapid-discharge door system, targeted unloading a train of rapid discharge cars in 30 minutes to an hour. Previously this same task would take four hours or longer. Unit trains shuttle back and forth between mines and power plants eliminating dwell time in yards. The rapid discharge concept has become common practice for modern railroads.

Burlington Northern Santa Fe, Southern Railway, and CSOPU-Colorado Spring Public Utilities.



Carrier names available for new 20-foot containers coming from Athearn next March include Florens, Blue Sky Intermodal, Matson, Hapag-Lloyd, CAI, COSCO, and SITC. The contain-

ers have corrugated sides and roof. They will be available in three-packs with different numbers. For additional information contact a dealer or visit athearn.com.



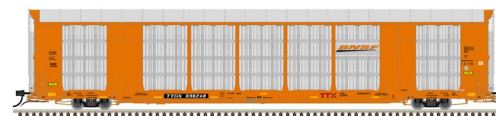
Atlas is quoting a 2019 fourth quarter release for an improved version of its HO scale Alco S-2 diesel switcher. Upgrades include accurate body panel

details for the S-2, optional horizontal or vertical radiator shutters, and redesigned truck frames with separately applied detail. The chassis has also been redesigned to accommodate optional DCC with sound. Features include directional LED lighting, and separately-applied grab irons, coupler cut levers, air hoses, and piping.



Road names will be Canadian National, Chicago Great Western, Frisco (ex-NEO), Erie, Lehigh & New England, Maine Central, and Southern Pacific.

Atlas Silver series DC units come with an NMRA-compliant socket for installation of an aftermarket DCC decoder. Atlas Gold series DCC locomotives come with a factory installed LokSound Select Dual-Mode decoder.

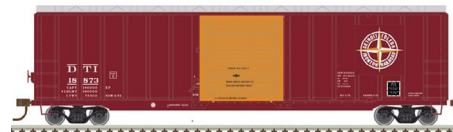


Atlas has scheduled the release of its newly-tooled HO scale Gunderson 89-foot Multi-Max auto

carrier for the fourth quarter of this year. The revolutionary feature of the Multi-Max is the ability to change from two-level to three-level loading and back without adding or removing a deck.



Road names on this Atlas release will be BNSF, CN-GTW, CP-Soo, and Kansas City Southern.



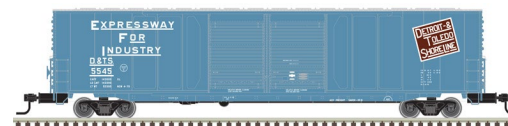
Atlas's fourth quarter delivery schedule includes a 50-foot Berwick boxcar shown here decorated for Detroit, Toledo

& Ironton.



Additional road names for the HO scale Atlas Master series model will be Grand Trunk Western, Ferrocarriles Nacionales de Mexico,

Nevada Northern, Chicago & North Western, GATX-Warwick Railroad, and NOKL-Northwestern Oklahoma Railroad.



Built by American Car & Foundry in the late 1960s and early 1970s, the ACF 60-foot auto parts boxcar

was designed to service automobile assembly plants and component suppliers across the nation. The cars were equipped with either single or double doors.

Atlas's HO scale ready-to-run version will be available for Detroit & Toledo Shoreline, Canadian National,



Conrail, SSW-Cotton Belt, Norfolk Western, CPAA-Canadian Pacific, Chesapeake & Ohio, and Western Maryland. An

undecorated model is included in the release. For additional information on all Atlas products contact a dealer or visit atlasrr.com.



Bowser has announced road names for a new production run of 40-foot boxcars scheduled for release next January. Three road

numbers each will be available for NJI&I-Wabash (Flour loading), Atlantic & Danville, CP Rail (green scheme), Genesee & Wyoming, Lehigh Valley (Flour loading), Linde Liquefied Gases, Louisville & Nashville-DF2 Dixie Line, Maine Central, Mississippi Central-The Natchez Route, Missouri Pacific-Eagle Merchandise Service, Ontario Northland, Seaboard Air Line (beer car with heart logo), NY&W-Susquehanna, Canada Southern, and Wellsville, Addison & Galetton.



Cars with double doors will be available decorated for Canadian National (noodle scheme) and Great Northern.

The ready to run HO scale models will feature metal wheelsets and knuckle couplers. For more information contact a dealer or visit bowser-trains.com.

Broadway Limited Imports is selling several versions of a Reading T1 4-8-4 steam locomotive. In addition to the standard in-service livery shown above, the HO scale ready-to-run model



is available decorated for Chessie Steam Special No. 2101, Iron Horse Rambles excursion locomotives No. 2100 and No. 2124, and in the American Freedom Train scheme (middle photo).



The model is also available as Delaware & Hudson 4-8-4 Centennial Locomotive No. 302 with smoke deflectors.



Construction of the BLI locomotive and tender consists of a plastic shell mounted on a diecast metal chassis. Features include variable smoke synchronized with

chuff exhaust sound, golden white LED head and rear light, flickering firebox glow, and factory installed engineer and fireman figures. The locomotive features BLI's Paragon3 with Rolling Thunder sound and DC/DCC control system. A Rolling Thunder transmitter is on board the model; the receiver is sold separately. For additional information contact a dealer or visit broadway-limited.com.



New 1:87th scale vehicles available from **Classic Metal Works** include this 1954 Ford Hi-Rail railroad service truck. It is available decorated for Erie-Lackawanna, Southern Railway, and Denver & Rio Grande.



Also new is this 1941-46 Chevrolet tow truck decorated for Sunoco, Standard Oil, and Phillips 66.



In addition to Pioneer Heating, this 1960 Ford tank truck is available from Classic Metal Works lettered for Dixie Gas, and Ciardelli Heating Co. For additional information contact a dealer or visit classic-metalworks.com.



Fos Scale Models has released an HO scale craftsman kit that builds into an impressive three-story, L-shaped apartment building. The street level facades model a range of storefronts including a dry cleaner, driving school, textiles dealer, and a furniture auction. Arched entrances at the center of each façade incorpo-

rate steps leading to the apartments on the upper levels. At the rear of the structure, the L-shaped plan offers a multitude of detailing opportunities.



The kit comes with numerous details including a multiple electric meter casting, TV antennas, sewer grates, fire call box, laser-printed clothes for the clothes line, fire escapes, a rooftop billboard, and several signs of various types and sizes. Structural components include laser-cut walls and sidewalks, plastic windows and doors, detailed instructions, and assem-

bly templates. The completed structure has a footprint of 8 x 8 inches plus one inch for the sidewalks. For additional information visit fosscalemodels.com.



Frenchman River Model Works has a 1:87 scale kit for a 68-foot Steam Freighter. Called Clyde Puffers, small coastal freighters of this type were built from the 1850s through 1920 to carry freight into and around the

coastal waterways of Scotland and other North Atlantic ports. Many were still in use into the 1950s. The name Puffer comes for the distinct puffing noise produced by its steam engine. Basic structure components cast in resin include a one-piece wheelhouse, one-piece superstructure, and a one-piece hull with riveted steel plate details. Additional detail parts are laser-cut or cast in lead-free pewter. The completed model is 9.25 inches long. Additional kits available from Frenchman River include HO and O scale railroad tugboats. For more information visit frenchmanriver.com.



Highliners has a limited quantity of HO scale kits that can be assembled into any EMD FP7 Phase I or Phase II (including the Canadian variants)

units as well as U.S. and Mexican FP9s. The kit includes all the parts in the standard Highliners A unit kit, minus the standard-length A unit shell. Included instead is an Athearn one-piece FP body shell with pre-cored hand rail & grab iron holes and additional parts trees from Athearn and Highliners. As noted on the web page, some additional parts are required to create a Canadian FP9.



Highliners continues to offer HO scale state-of-the-art kits for EMD F series A and B units. For additional information visit highlinersonline.com.



Interaction Enterprises has added four Model-T trucks to its lineup of HO scale vehicle kits. The new models are based on Ford prototypes from the 1911-1912 era. The models include a depot hack, a panel van, a closed cab truck (above), and a flatbed truck (below). The kits are composed of laser board, basswood, and 3D printed parts.



Kits for a 6-1/2 ton 1905 electric moving van and a 1973 motorhome continue to be available. For additional information visit interaction-hobbies.com.

A review of **InterMountain Railway's** production schedule reveals that several popular models are on hold pending receipt of sufficient reservations to warrant production. The list of critical HO scale items needing more reservations include Santa Fe refrigerator cars, 10,000-gallon tank cars, ACF 8,000-gallon Type 27 riveted tank cars, USRA gondolas, 40-foot wood refrigerator cars, and X-29 boxcars. HO scale models that have surpassed minimum reservation levels and are currently in production include Evans 100-ton coil cars, ACF twin-bay covered hoppers, PFE wood refrigerator cars, and ACF 4650 triple-bay covered hopper cars. To learn more

about the status of certain InterMountain models contact a dealer or visit intermountain-railway.com.



Kadee has scheduled the release of a Norfolk & Western 40-foot PS-1 boxcar next month. The HO scale ready-to-run model closely follows prototype car No. 53124 built by Pullman Standard in 1953. Both the model and the full-size boxcar were fitted with 8-foot Youngstown sliding doors.



Kadee's June production schedule includes an HO scale version of Conrail's No. 878390 PS-2 twin-bay covered hopper. The prototype was built in 1956 and repainted with light gray alkali-resistant paint in July, 1977. 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.



KatoUSA has added more Chicago Metra locomotives to its lineup of HO scale EMD F40PH locomotives. The current release includes three versions of the Chicago Metra locomotive decorated for Fox River Grove (above), Ravina, and Village of Schaumburg. The ready-to-run models are available for DC operation and with a choice of factory-installed DCC or with ESU LokSound DCC.



HO scale Pullman Bi-Level commuter cars decorated for Metra and for Chicago & North Western have been reissued by Kato. The Bi-Level gallery cars feature interior detail

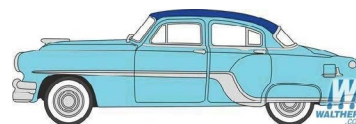
and green-tinted windows. The Cab-Coach cars are equipped with golden white LED directional headlights and taillights which can be switched on and off for mid-train operation. Kato Kinematic knuckle couplers that expand and contract as the cars move around curves are included. They can be installed with a Phillips screwdriver. An interior lighting kit is sold separately. For more information contact a dealer or visit katousa.com.



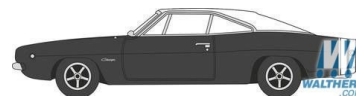
Mine Mount Models has announced Plazer's Plumbing Supply in HO scale. Measuring 11.75 x 7.25 inches, the multi-building kit employs Mt. Albert Scale Lumber, Tichy windows and doors, and BEST Trains metal cast-

ings. The kit includes laser-engraved sidewalks and random stone, concrete, and brick textures. Newly designed pipe racking, shake shingles, and standing seam "metal" roofing is also included. For more information visit minemountmodels.com.

New HO scale automobiles coming later this year from **Oxford Diecast** include a 1954 Pontiac Chieftain four-door



sedan with Deluxe side trim, white wall tires, and painted with San Marino Blue over Mayfair Blue.



This white on black 1968 Dodge Charger R/T features alloy wheels and Bumblebee stripes across the trunk.

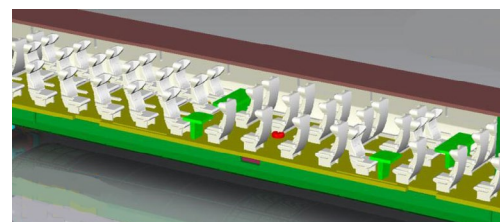


Oxford's version of this 1957 Dodge D100 Sweepstakes Pickup is finished in two-tone green. For additional information contact a dealer or visit walthers.com.



Rapido Trains plans to make another production run of HO scale VIA Bombardier LRC cars. In addition to significant upgrades in the five-year old tooling, this produc-

tion run will include a new Business Class car (above) with correct window arrangements and 2+1 seating to match cars rebuilt in 2013.



All of the LRC models will have full interior details, track-powered interior lighting and marker lights, etched-metal end gates, and roller bearing wheel-sets. Decorating schemes

on this run will include original (1981-1998), Canada scheme (1998-present), and Green rebuilds (2010-present). VIA40 cars and Canada 150 cars with three different city name groups are

under consideration pending receipt of sufficient advance reservations prior to the deadline of June 24, 2019.



Photo courtesy Richard Yaremko

Reservations are also being taken for an ACF PD3500 FlexiFlo covered hopper. Rapido is basing the prototypically accurate HO scale model on a pressure-differential design

American Car & Foundry introduced in the mid-1960s. To avoid any warping or shrinking in the final model, Rapido has designed the tooling to produce the car body in sub-assemblies rather than a one-piece body. Where appropriate to the road name being modeled, the ready-to-run car will come with newly designed 125-ton Barber S-2 trucks.



In addition to MDTX, road names will include SHPX-FMC Chemicals, NYC, PC (billboard repaint), PC (ex-NYC patch), CR (two schemes: FlexiFlo and billboard repaints), NAHX Lafarge, SYSX-US Systems, and PC/CR. An undecorated kit will be available with details to assemble all versions of the car.

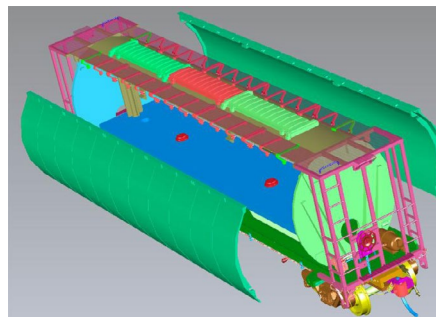


Rapido has scheduled another run of HO scale Northern Pacific 10000-series double-sheathed wood boxcars. This will be a limited production run with quantities based on pre-orders received by August 12, 2019.

Rapido is also booking reservations for a second production run of a 100-ton 3800 cu. ft. quadruple-bay cylindrical hopper. To control dimensional stability and eliminate warping issues,



the original one-piece body is being retooled as a multiple-piece component.



Features on the HO scale ready-to-run model will include round or trough hatches, Dofasco S-2 100-ton trucks, etched walkway and brake platform; and full undercarriage and end cage detail. The model will adhere to Marine Industries or National Steel Car

prototype details depending on the road name being modeled which will include NCHX, UNPX-Alcan Chemical Products, UNPX-Indusmin, CP Rail, and Canadian National.



Dealers recently received delivery of a new version of Rapido's HO scale 52-foot, 6-inch mill gondola. Modifications from the original release include either Z or hat-channel side bracing as

used by the railroad being modeled. Other details include wire grab irons, wire retainer valve handles, full underbody detail, positionable end doors, and appropriate trucks with metal wheelsets.



Road names include two versions of Ontario Northland, Algoma Central, Canadian Pacific (three schemes including MOW), British Columbia Railway, Canadian National (four schemes including MOW), Union Carbide, and Toronto, Hamilton & Buffalo.



Depending on the road name being modeled, some of the gondolas will be fitted with Rapido's 70-ton trucks that have roller bearings retrofitted into the journal boxes.

The trucks, which have metal wheelsets, are also sold separately. For additional information contact a dealer or visit rapidotrains.com.



ScaleTrains.com is booking advance reservations for a second production run of Thrall carbon black covered hopper cars. The Rivet Counter HO scale model will

be available this fall in three versions of the prototype, including 1970 and 1980 cars of 5750 cu. ft. capacity and 4727 cu. ft. cars manufactured in the 1990s. The original 1970 version of the prototype will be available decorated for Cabot, Columbian Chemical, Witco/Continex, and Sid Richardson. Models representing Thrall's 1980 production include Cabot, Sid Richardson, and FURX.



Road names for the 1990 4727 cu. ft. cars will be Columbian Chemicals Company, Sid Richardson,

CTNX-Continental Carbon, and TCMX-Transportation Company of America. For more information visit a dealer or scaletrains.com.



R. Bale

CARBON BLACK CARS

During the 1970s, Thrall Manufacturing Co. introduced a new 51-foot, 70-ton triple-bay hopper car specifically designed to handle carbon black. Unlike traditional covered hopper designs, where the end slope sheets are plainly visible, these cars featured an enclosed end that housed special air bags. When inflated the bags pushed the fine-grained carbon black toward the outlet gates. Additional spotting features included 16-inch tight-sealing round roof hatches. Most cars had 22 hatches but some had as many as 28. Other features included sampling spigots on the car sides and butterfly-type outlet gates.



Tangent Scale Models

is selling several versions of an HO scale Bethlehem 100-ton 3600 cu. ft. quad-bay open hopper car. The

models are based on a car built in the 1970s for Union Pacific. Models currently available include UP's original H-100-19 as delivered in 1979 (above) and five variations on the Union Pacific's black and yellow scheme from the post-1989 period.



Also available is a DT&I clone that is close in appearance to the original UP quads. For additional information visit www.tangentscalemodels.com.





Walthers has scheduled a new production run of an HO scale EMD SD50 diesel for release in late

December. The Mainline series model will feature an all-new drive mechanism including newly tooled power trucks and HT-C side frames.



The body shell is being updated with open gratings on the steps and molded drill starter points

for grab irons (sold separately in EMD SD50-60 Diesel Detail Kit #910-256).



Road names will be Chessie System (B&O), CSX, Denver & Rio Grande Western, Kansas City

Southern, Southern Pacific, and Union Pacific. An undecorated unit is also in the release. Walthers Mainline series SD50 will be available for standard DC operation as well as equipped with ESU sound and DCC decoder.



A new production run of Walthers Mainline series FGE 50-foot insulated boxcars is scheduled for release this month.



Road names will be Burlington Northern, Bangor & Aroostook, BC Rail, Canadian National, Canadian Pacific,

Chicago & North Western. The ready-to-run model will have appropriate trucks with 33-inch machined metal wheelsets.



Available now from Walthers SceneMaster is a new United Parcel Service® Delivery Van. Fully painted, the van is based on smaller delivery vehicles used by UPS. The model is fully assembled except for the side

mirrors, which are installed by the modeler.



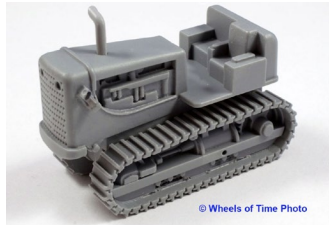
Walthers plans to release an HO scale kit for this Cornerstone series Modern Suburban Station in June. Details include a ticket vending machine, station signs, platform access ramp, gas meter, electrical panel, safety

and security posts, a rooftop air conditioner, and several printed signs. The assembled model has a footprint of 10.44 x 6.5 inches. For additional information on Walthers products contact a dealer or visit walthers.com.



Westerfield Models has upgraded several of its HO scale resin kits. The popular #2900 series of USRA 40-foot steel boxcars now feature a

one-piece body. Upgrading of the decal art has been completed on Westerfield's #4500 series of GRa gondolas, and #5900 series A-50-6, and B-50-20 50-foot SS steel auto boxcars. For additional information visit westerfieldmodels.com.



Wheels of Time has two HO scale kits based on an Allis-Chalmers model HD-21 tractor produced by A-C from 1954 to 1969. The kits are for an HD-21 Crawler (above), and HD-21 Dozer with blade (below).

Components in the kit include a one-piece body, and left and right treads cast in resin; and a 3D printed exhaust. The Dozer kit also has a two-piece blade assembly and 3D-printed hydraulic cylinders.



The models are also available fully assembled and decorated. For more information visit wheelsotime.com.

N SCALE PRODUCT NEWS



Athearn has announced plans to introduce N scale models of the distinctive GATX TankTrain cars. Athearn's N scale version represent the 23,000-gallon GATX TankTrain cars from the 486 number series built in 1977, and the 282 series built in 1982. The models replicate the differences between the two prototype series including variations on the tank saddles, walkways, manways, and brake rigging. Additional features on the all-new model include correct transfer plumbing on the A and B ends, full underbody plumbing and rigging,

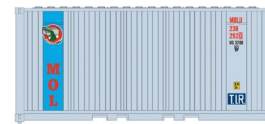
and soft vinyl transfer hoses that bend as the car negotiates curves. The models will be available in three-packs decorated in both the early (above) and late (below) paint schemes. Delivery is planned for March 2020.



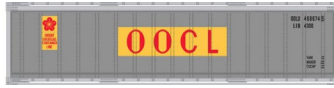
R. Bale

THE TANKTRAIN

The GATX TankTrain made its debut in the 1970s. The TankTrain concept solved the problem of long load/unload times for unit train shipments of liquid commodities. A standard unit train of tank cars can take significant time to load or unload, with the need for workers to attach the necessary hoses and other fittings to each individual car, coupled with the necessary time to load or unload the commodity from each car. TankTrain cars are interconnected with a large-diameter, flexible hose between each car, which allows the commodity to be siphoned off at a single point at the end of a set of cars while being "pushed" at the opposite end with inert nitrogen gas. Using this method, TankTrains can be loaded or unloaded at a rate of approximately 3,000 gallons per minute, allowing a train of 90 cars to be loaded or unloaded in under five hours. One of the most successful applications of the TankTrain concept was Southern Pacific's crude oil operation from Bakersfield, California, to a Shell Refinery in Carson, California.



Athearn's N scale production schedule for next March includes both 20-foot and 40-foot containers. In addition to Mitsui OSK Lines (pictured) the corrugated 20-footer will be available decorated for American President Line, Australia-New Zealand, K-Line, Linea Mexicana, SSI Container Corp, Waters AG, and Hanjin.



Athearn's 40-foot N scale smooth-side container will be available for American President Line, K-Line, Mitsui OSK Lines, Neptune Orient Lines, Nippon Yusen Kaisha, and Orient Overseas Container Line. Both of Athearn's new N scale containers will be sold in three-packs with different numbers. For additional information contact a dealer or visit athearn.com.



Atlas plans to complete a new production run of its N scale Alco RS-2 diesel locomotive during the fourth

quarter of this year. The model will be available decorated for New York Central, Chicago Great Western, Delaware & Hudson, Frisco, Lehigh & New England, and Spokane, Portland & Seattle. An undecorated version will also be available. The Master series model will be available in both DC and DCC versions.



Based on a Milwaukee Road prototype, Atlas has announced a 45-foot logging flat car in N scale. The

Master series model features side stakes in groups of two at each end and inward slots on the cars so that scraps and bark falling off the load can drop through without damaging the car. Road names announced include Milwaukee, St. Maries River, Burlington Northern, Great Northern, Northern Pacific, and British Columbia. Included are free-rolling trucks, a detailed brakewheel, and knuckle couplers.



Additional new N scale models coming from Atlas during the last quarter of 2019 include this 60-foot

auto parts boxcar. The Master series model is based on a prototype built by American Car & Foundry in the late 1960s and early 1970s. Atlas's N scale version features positionable doors, 70-ton roller-bearing trucks, and AccuMate operating knuckle couplers. Road names will be Canadian National, Conrail, SSW-Cotton Belt, Norfolk & Western, White River Foodservice, CPAA Canadian Pacific, Chesapeake & Ohio, Western Maryland, and Detroit & Toledo Shoreline. For additional information contact a dealer or visit atlasrr.com.



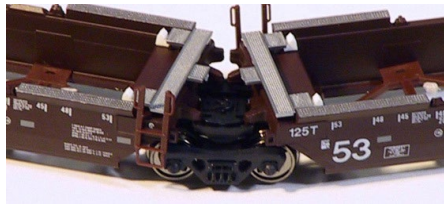
Several N scale projects are on hold at **InterMountain Railway** pending receipt of sufficient reservations to justify production. Desirable N scale

models currently in need of additional reservations include ACF 8,000- gallon Type 27 riveted tank cars (above), Bathtub coal gondolas, 4785 cu. ft. PS2-CD covered hopper cars, R-70-20 refrigerator cars, and GP10 Paducah locomotives. Contact a dealer regarding reservations or visit intermountain-railway.com.



KatoUSA has released three-car sets of N scale Gunderson MAXI-IV well-cars decorated for BNSF, AOK, and TTX. Each set of well cars comes with six

removable 53-foot containers that have a magnet and a metal plate to hold it to the well-car bottom or to the top of the lower container. Kato's use of steel-compound plastic in producing the well-cars is said to assure stable operation with or without a load of containers.



The cars are equipped with Kato's Kinematic trucks that remain closely coupled on straight track and flex for smooth operation on curved track. For additional information contact a dealer or

visit katousa.com. A video showing the proper linkage and mounting method for the trucks on these new N scale MAXI-I and MAXI-IV double-stack well-cars can be viewed at www.youtube.com/watch?v=7ZjkhO1ndpI.



Kato has introduced N scale suburban platform sets to the American market. Although the packaging is currently Japanese, assembly instructions are in English. Also new is

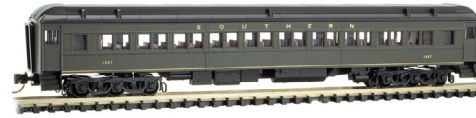
a lighting system that can be added to both the one-sided platform (above) and the island style that serves tracks on both sides of the platform. Kato has posted a video that offers step-by-step instructions on the platforms and lighting system. To view the video visit www.youtube.com/watch?v=6nY7I7BnAnU.

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Micro-Trains has released several new N scale ready-to-run models including this

80-foot heavyweight diner decorated for Union Pacific. The diner is painted in UP's standard postwar two-tone grey scheme.



A 78-foot heavyweight paired-window coach decorated for the Southern Railway has also been released by Micro-Trains.

The N scale model is based on a 1920s car rebuilt in 1948 with air conditioning and reclining seats. The model wears classic Pullman green paint with gold lettering.



New freight equipment from Micro-Trains includes 70-foot Gunderson Husky-Stack

well-cars decorated for Santa Fe. The car can handle containers up to 48-feet long in the lower well position.



Micro-Trains N scale version of this IC 50-foot steel box car has an 8-foot plug door. The model represents a prototype

built in 1967 that has been updated to remove the running board and lower the ladders. The model features Bettendorf-type trucks and body mounted couplers.



Completing our listing of new Micro-Trains cars is a USRA 40-foot Northern Pacific single-sheathed wood boxcar. For additional information

contact a dealer or visit micro-trains.com.

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Tangent Scale Models is selling several versions of an N scale Bethlehem 100-ton 3600 cu. ft. quad-bay open hopper cars. The models are based on a

car built in the 1970s for Union Pacific. Models currently available include UP's original H-100-19 as delivered in 1979 (HO model shown above) and five variations on the Union Pacific's black and yellow scheme from the post-1989 period.



Also available is a DT&I clone that is close in appearance to the original UP quads. For additional information visit tangentscale-models.com.



New N scale **Walther's SceneMaster** items coming this summer including two types of HVAC units. The heating, ventilation, air conditioning units come in

an eight-pack (four of each type) and can be used for either roof or ground-mounted installations..



Additional new N scale SceneMaster detail items include these modern trash cans. The trash cans are unpainted and come in a package of 24. For additional information contact a dealer or visit walthers.com.



Wheels of Time has scheduled a second run of its N scale Pacific Car & Foundry 50-foot 70-ton exterior post insulated boxcars. They are expected this

summer. Road specific details will include Keystone cushioning details and either Youngstown or Landis plug doors depending on the practice of the road being modeled.



Additional features include a detailed undercarriage, body-mounted knuckle couplers, proper ride height, and appropriate trucks with

metal wheels. Multiple car numbers will be available for Conrail, CSX, Union Pacific, Texas & Pacific, and Denver & Rio Grande Western. For more information visit wheelsotime.com.

NEW DECALS, SIGNS AND FINISHING PRODUCTS



ICG Decals has introduced a new water-slide decal set that provides correct white lettering for Illinois Central 53- and 60-foot GSC flatcars painted brown or black from 1957 forward.

Lettering set ICG-91 contains sufficient material to decorate three flat cars.



Note that ICG Decals has a new website at icgdecals.com. Email correspondence should be directed

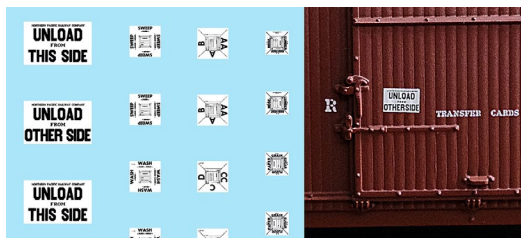
to Dan Kohlberg at dan@icgdecals.com.



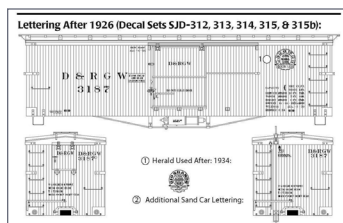
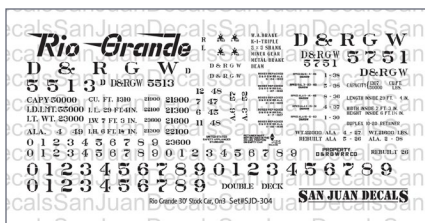
Images Not To Scale

The Northern Pacific Railroad Historical Association has developed chalk mark decals for Rapido's HO scale NP 10000 series boxcars. Each decal sheet includes material for lettering one NP car, plus a selection of unique stencils, common placards/forms, reweigh/lube stencils, and paint patches.

These are high quality water-slide decals printed in Italy by Cartograph. Although intended for NP, many of the chalk marks and labels are suitable for most steam-era railroads.

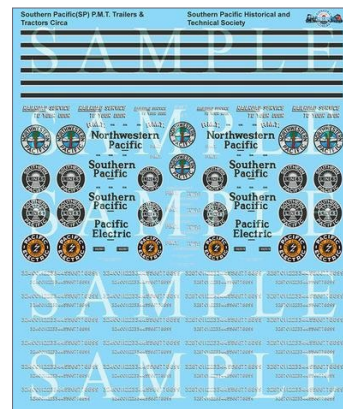


The NPRHA store also sells the Rapido model. For additional information visit store.nprha.org/modeling/cars.



San Juan Model Company has HO scale water slide decals for D&RGW narrow gauge steam locomotives (left) and D&RGW

3000 series boxcars (right). Additional decals are available for most D&RGW narrow gauge freight cars. For more information visit sanjuanmodelco.com.



The Southern Pacific Historical & Technical Society has HO scale decals for Pacific Motor Trucking tractors and trailers painted in the SP Daylight scheme. The lettering set has both the early and later version of the Southern Pacific medallion, as well as the Pacific Electric, and Northwestern Pacific heralds that were used in PMT service before 1955. For information visit sphts.myshopify.com/collections/models/products/pacific-motor-trucking-decals.



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! BRIEFLY NOTED AT PRESS TIME ...

Atlas will release a new N scale 50-foot wood single-sheathed WWI-era automobile boxcar during the 4th quarter of 2019. Also due from Atlas late this year are N and HO scale versions of GE U23B diesels ...

KatoUSA has announced plans to issue a run of its HO scale Gunderson MAXI-IV Double-Stack well-cars with new numbers late this summer. Paint schemes will include TTX (both new and traditional logos), BNSF (early and Swoosh schemes) and Pacer Stacktrain ...

Walthers next Proto series HO scale name train will be the Twin Cities Hiawatha. All of the signature cars of the memorable train will be offered in orange and maroon, as well as the later yellow and gray paint scheme. Both liveries will be available in a deluxe limited edition of the cars with LED interior lighting and Preiser figures. Walthers will debut a new Proto FP7 diesel appropriately painted and detailed to lead the famous Twin Cities Hiawathas. The project includes a deluxe edition of The Cannonball, the Milwaukee-Watertown commuter train as it appeared from 1956 to 1972 ...

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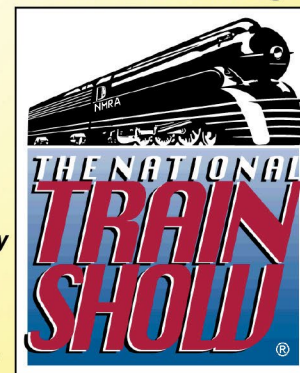
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SELECTED EVENTS



Model Railroad Hobbyist | May 2019 | #111

MAY 2019

(Many events charge a fee. Check individual info website for details.)

CANADA, BRITISH COLUMBIA, BURNABY, May 3-5, Railway Modellers Meet of British Columbia, at Simon Fraser University, Burnaby Campus, West Mall Centre. Info at railway-modellersmeetofbc.ca.

CANADA, BRITISH COLUMBIA, CRANBROOK, May 29-June 2, NMRA Pacific Northwest Region Convention, at Western Cranbrook Hotel, 1019 Cranbrook Street N. Info at www.kootenayexpress2019.ca.

CANADA, QUEBEC, DORVAL (metro Montreal), May 25-26, Montreal Model Train Exposition, at Dorval Arena, 1450 Dawson Avenue. Info at montrealmodeltrainexposition.com.

CALIFORNIA, McCLELLAN PARK (metro Sacramento), May 2-5, NMRA Pacific Coast Region Convention, at McClellan Conference Center, 5411 Luce Avenue. HQ at Lions Gate Hotel, 3410 Westover Street. Info at pcrnmra.org/conv2019.

CALIFORNIA, SAN PEDRO, May 18-19, Belmont Shore Model Railroad Club Open House, 3601 South Gaffey Street, Bldg 824. Info at belmontshorerr.com.

CALIFORNIA, SANTA CLARA, May 23-25, O Scale West, S West, and Narrow Gauge West combined meet, hosted by O Scale West, at Hyatt Regency Hotel. Info at oscalewest.com.

SELECTED EVENTS | 2

CONNECTICUT, FARMINGTON, May 31-June 1, New England-Northeast Railroad Prototype Modelers Meet, at Farmington Marriott, 15 Farm Springs Road. Info at nerpm.org.

MASSACHUSETTS, WAKEFIELD, May 18, Model Railroad Flea Market, sponsored by North Shore Model Railroad Club, at Lakeside Inn, 595 North Avenue. Info at nsmrc.org.

NEW ZEALAND, MOSGIEL, May 11-12, Dunedin Model Train Show, Taieri Bowling Club, 12 Wickliffe Street. Info at www.dunedinmodeltrainshow.nz.

NORTH CAROLINA, DENVER, May 31-June 2, Glenfest 2019 Modular Layout Display sponsored by the Sipping and Switching Society of North Carolina, at Salem United Methodist Church. Request info from Glen Frix at gafrix@charter.net or visit www.facebook.com/events/603669826749316.

NORTH CAROLINA, SPENCER, May 18-19 National Train Day Celebration at Historic Spencer Shops. Info at www.nctrans.org/Events/NTD.aspx.

OHIO, HILLIARD, May 18-19 (setup on 17th), 11th Annual Central Ohio NTrak N scale Weekend Train Show, at Franklin County Fairgrounds, 4100 Columbia Street. Info at www.centralohiontrak.org/p/central-ohio-ntrak-n-scale-weekend.html.

PENNSYLVANIA, LANCASTER (Strasburg), May 15-18, Pennsylvania Railroad Technical & Historical Society 2019 Annual Meeting, Wyndham Lancaster Resort & Convention Center, 2300 Lincoln Highway East, Route 30. Info at www.prrths.com/conventions/PRR_Annual.html.

TENNESSEE, JOHNSON CITY, May 31-June 1, Scale Model Train Show & Sale, sponsored by Mountain Empire Model Railroaders, at George L. Carter Railroad Museum, East Tennessee State University. Info at memrr.org.

SELECTED EVENTS | 3

TEXAS, TAYLOR (Metro Austin), May 4-5, Austin Area Train Show, at Williamson County Expo Center, 5350 Bill Pickett Trail. Info austinrailway.org/trainshow.html.

UTAH, PROMONTORY, May 10-11, 150th Anniversary Celebration of the Golden Spike. Info at www.nps.gov/gosp/planyourvisit/2019-150th-anniversary-of-the-completion-of-the-transcontinental-railroad.htm.

WISCONSIN, LA CROSSE, May 17-19, NMRA Thousand Lakes and Midwest Regions joint convention at Days Inn, 101 Sky Harbor Drive. Info at www.thousandlakesregion.org/2019-tlr-mwr-con.

VIRGINIA, FISHERSVILLE, May 5, 33rd Annual Shenandoah Valley Model Train & Railroading Show, Sponsored by Augusta Country Railroad Club. Augusta Expo 277 Expo Road (Interstate 64, Exit 91). Info at www.acmrrc.org/annual-model-train-show.

June 2019, by location

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 or visit www.facebook.com/pg/toowoombamodelrailwayclub/events/?ref=page_internal.

CALIFORNIA, CROCKETT, June 8-9, Carquinez Model Railroad Society Open House, at 645 Loring Avenue. Request info from Dave Tateosian at davetateosian@sbcglobal.net or visit cmrstrainclub.org.

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.

SELECTED EVENTS | 4

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.

TEXAS, FRISCO, June 27-30, Texas Special NMRA Lone Star Region Convention, at Drury Inn & Suites, 2880 Dallas Parkway. Info at 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.

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.

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.

CALIFORNIA, SACRAMENTO, September 4-7, 39th National Narrow Gauge Convention, At the DoubleTree by Hilton, 2001 Point West Way. Info at www.nngc2019.org.

ILLINOIS, COLLINSVILLE (metro St Louis), July 26-27, St. Louis RPM Meet, at Gateway Convention Centre. Info at www.icgdecals.com/stlrpm.

MARYLAND, LINTHICUM HEIGHTS (Metro Baltimore), September 19-22, Mid Atlantic RPM Meet, at DoubleTree by Hilton, BWI Airport, 890 Elkridge Landing Road. Info at marpm.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.

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.

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.

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.

UTAH, SALT LAKE CITY, July 7-13, NMRA National Convention and National Train Show. HQ at Little America Hotel. Info at 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.

Beyond 2019, by date

MISSOURI, ST. LOUIS, July 12-18, 2020, NMRA National Convention and National Train Show. HQ at Hilton St. Louis at the Ballpark. Info at gateway2020.org.

CALIFORNIA, SANTA CLARA, 2021, NMRA National Convention and National Train Show.

ENGLAND, BIRMINGHAM, 2022, NMRA National Convention and National Train Show. Info at www.nmra2022uk.org. ■



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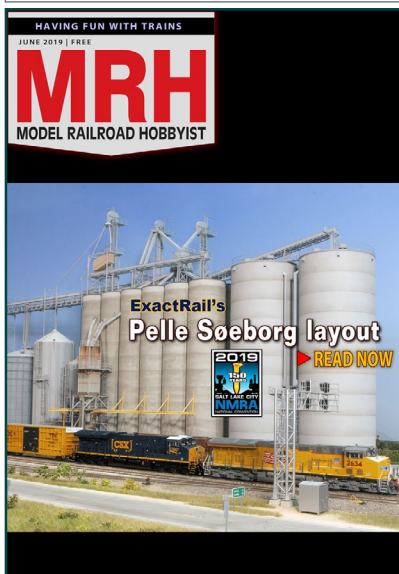
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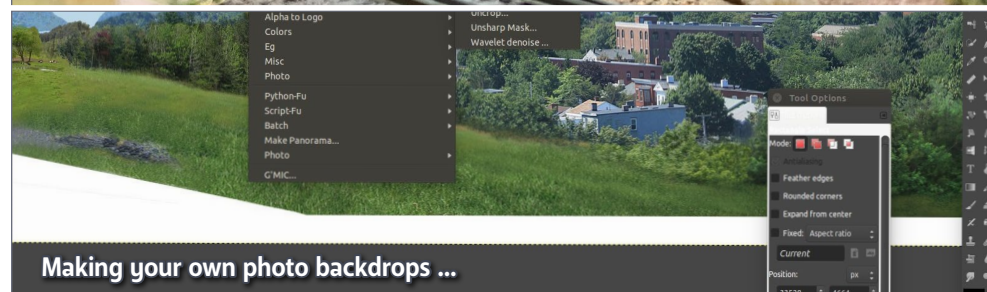
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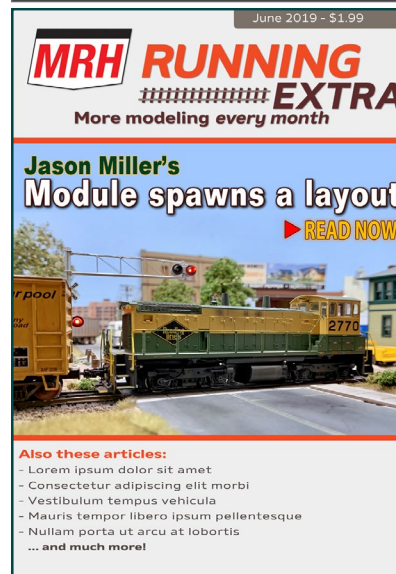
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