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Jim Six upgrades a Broadway Limited K3 Pacific

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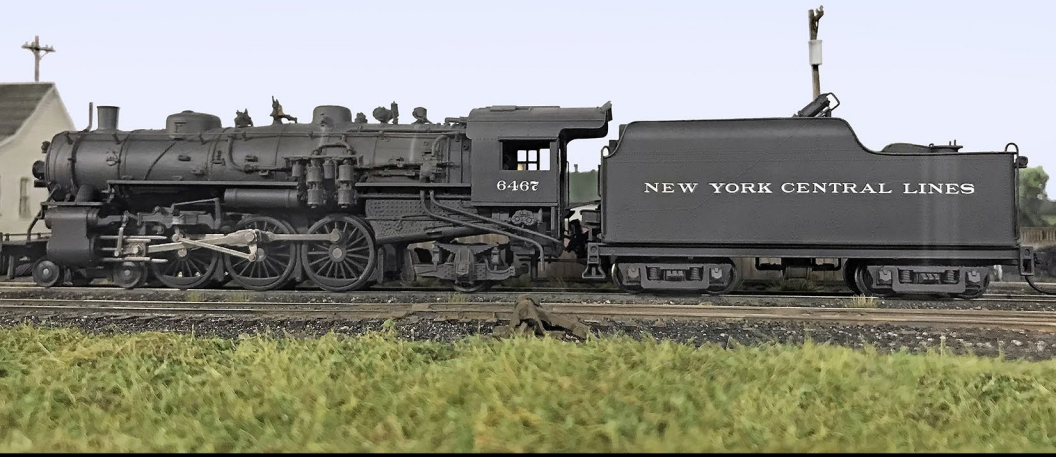

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MRH
MODEL RAILROAD HOBBYIST

Model Railroad Hobbyist January 2019 | #107
(Updated 12/30/18)

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ISSN 2152-7423

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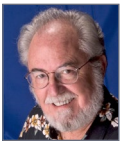
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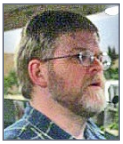
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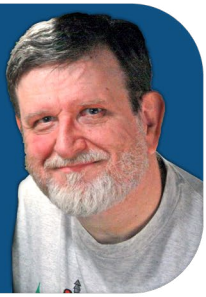


Model Railroad Hobbyist | January 2019 | #107

Joe Fugate: Changes for January 2019 and beyond ... plus replacements for floquil/polyscale

Rate this article

Now that Running Extra and the new MRH adjusted to match ad revenue have been going for a couple months, it's time to make some improvements for 2019.

Because the page count of MRH is more limited thanks to declining ad placements, as of this issue we're publishing more shorter articles to get the variety of the free MRH back up within the page count we have to work with.

We're also changing the order of things in the magazine to make it clear there's still a lot of great content in these pages past the cover story. As part of this change, we're making the Electrical Impulses column (now being written by many different normal contributing authors) back into a normal article but calling it a recurring series.

As a result of all these changes of late, we're now publishing *more articles* than ever. That means your chances of getting published in either MRH or *Running Extra* are greater than they've ever been!

I'm also making some changes regarding editorial content. For the magazines, I'm moving to more how-to insights in my editorials, giving you real hands-on goodies you can use. We've also eliminated "Reverse Running" and added "Ah-Hah Moments," a short but awesome bit of meaty modeling how-to insight.

We're also changing how the table of contents works in MRH. The grayed-out list of stories for *Running Extra* (RE) in MRH created a lot of confusion. People somehow thought the MRH magazine PDF ought to be "smart" and ungray the RE TOC once they bought RE.

So to clear up the confusion, we've turned the *Running Extra* table of contents page in MRH into an advertisement that you click on to make a purchase. Hopefully, it becomes clear a PDF ad doesn't "know" anything. Once you buy RE, go to the link we email you and you will be able to access those articles!

Every issue of the magazine has white space in the articles, so we're also placing ads for the RE articles throughout MRH. If you see something interesting, you can click on the ad and buy *Running Extra* to download and access all the extra articles.

Post-Floquil paint replacements

Jim Six recently mentioned needing to find good replacement paints for his dwindling Floquil and PollyScale paint stash. We've addressed this before, but this sounds like a good topic to revisit.

A few years back, I was feeling the pain of my own dwindling stash of Floquil and PollyScale paints, so I set out to do the research and find good replacements.

First, I contacted Testors (the ones who bought the Floquil / PollyScale paint line back circa 2000) and discussed my thoughts with them. They were very enthusiastic about doing something to solve this need, so they eagerly sent me a full set of Model Master paints to use to do color matching with the old Floquil / PollyScale paint line.

Another thing I wanted to do was to look at the current state of more environmentally friendly acrylic paints.

If you look at what has happened with acrylic paints in industry, all major painting now uses acrylics. When more durable paint is needed, the auto makers, airplane makers, ship manufacturers, and railroad manufacturers all use acrylic polyurethane enamel paint these days.

In other words, acrylic paints have come a long ways since the early days. There's no argument that water-based paints are simpler to use and a lot safer.

So the handwriting is on the wall – everyone is moving to acrylic paint and away from solvent-based paints. As I have gotten older, I've also had a few health issues crop up from using solvent paints, so I've become a lot more cautious about solvent paints.

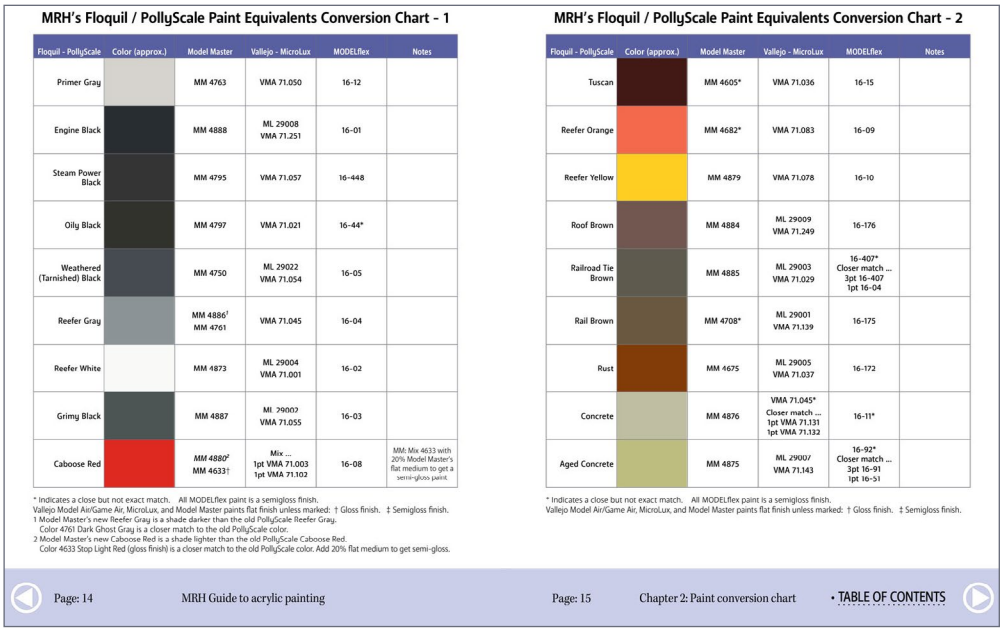
You can use solvent-based paints, certainly, and there are some good ones on the market such as Scalecoat, Tru-Color, and Testor's Model Master solvent paints. However, ***big caveat*** – make very sure you use a respirator mask and skin protection to keep the solvents from getting aborbed into your system! Your liver will definitely thank you.

As for the modern acrylic model paints, there are three great brands

available: Badger Modelflex, Testors Model Master acrylics, and Vallejo Model Air / Game Air.

I have found if you use the high performance thinner formula I recommend (see the book), these acrylics act almost like solvent-based paints and you'll never want to go back to solvent paints again.

I cover all the details of these paints, along with provide mixing formulas [1] to duplicate the Floquil and PollyScale common colors in the free-to-download MRH Acrylic Painting guide you can get here: mrhmag.com/subscribers-only/painting/acrylics ...



MRH's Floquil / PollyScale Paint Equivalents Conversion Chart - 1

Floquil - PollyScale	Color (approx.)	Model Master	Vallejo - MicroLux	MODELflex	Notes
Primer Gray		MM 4763	VMA 71.050	16-12	
Engine Black		MM 4888	ML 29008 VMA 71.251	16-01	
Steam Power Black		MM 4795	VMA 71.057	16-448	
Oily Black		MM 4797	VMA 71.021	16-44*	
Weathered (Tarnished) Black		MM 4750	ML 29022 VMA 71.054	16-05	
Reefer Gray		MM 4886† MM 4761	VMA 71.045	16-04	
Reefer White		MM 4873	ML 29004 VMA 71.001	16-02	
Grimy Black		MM 4887	ML 29002 VMA 71.055	16-03	
Caboose Red		MM 4880² MM 4633†	Mix ... 1pt VMA 71.003 1pt VMA 71.102	16-08	MM: Mix 4633 with 20% Model Master's flat medium to get a semi-gloss paint

* Indicates a close but not exact match. All MODELflex paint is a semigloss finish.
Vallejo Model Air/Game Air, MicroLux, and Model Master paints flat finish unless marked: † Gloss finish. ‡ Semigloss finish.
1 Model Master's new Reefer Gray is a shade darker than the old PollyScale Reefer Gray.
Color 4761 Dark Ghost Gray is a closer match to the old PollyScale color.
2 Model Master's new Caboose Red is a shade lighter than the old PollyScale Caboose Red.
Color 4633 Stop Light Red (gloss finish) is a closer match to the old PollyScale color. Add 20% flat medium to get semi-gloss.

MRH's Floquil / PollyScale Paint Equivalents Conversion Chart - 2

Floquil - PollyScale	Color (approx.)	Model Master	Vallejo - MicroLux	MODELflex	Notes
Tuscan		MM 4605*	VMA 71.036	16-15	
Reefer Orange		MM 4682*	VMA 71.083	16-09	
Reefer Yellow		MM 4879	VMA 71.078	16-10	
Roof Brown		MM 4884	ML 29009 VMA 71.249	16-176	
Railroad Tie Brown		MM 4885	ML 29003 VMA 71.029	16-407* Closer match ... 3pt 16-407 1pt 16-04	
Rail Brown		MM 4708*	ML 29001 VMA 71.139	16-175	
Rust		MM 4675	ML 29005 VMA 71.037	16-172	
Concrete		MM 4876	VMA 71.045* Closer match ... 1pt VMA 71.131 1pt VMA 71.132	16-11*	
Aged Concrete		MM 4875	ML 29007 VMA 71.143	16-92* Closer match ... 3pt 16-91 1pt 16-51	

* Indicates a close but not exact match. All MODELflex paint is a semigloss finish.
Vallejo Model Air/Game Air, MicroLux, and Model Master paints flat finish unless marked: † Gloss finish. ‡ Semigloss finish.

1. MRH's Acrylic Painting guide (eBook is free to registered MRH readers) has formulas for duplicating the common Floquil and PollyScale paint colors with Testors Model Master, Vallejo, and Badger Modelflex paints. The book also has some economical thinner formulas, including my favorite, the high-performance acrylic thinner formula that makes acrylics act more like solvent paints.

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- dual-mode NMRA-compliant decoder
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One question I get asked is how well these paints, especially the Vallejo Model Air / Game Air or Badger Modelflex paints, work for brush painting?

Model Air and Game Air work fine most of the time, but the Badger Modelflex can be a bit thin sometimes for brush painting. In the book, I recommend getting some acrylic paste medium and mixing a little of that with these paints to give them some more body for brush painting if needed.

This is just one of many such tips in this book. The point is *get the book!*

You will find it's loaded with helpful insights that enable you to get the very best results from these safer acrylic paints.

MRH CONTEST: "California Basement" Challenge

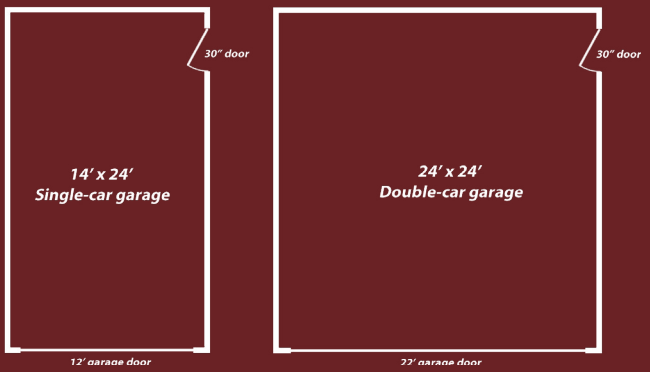
$1000 GRAND PRIZE • $500 FIRST PRIZE
$250 - Honorable mentions (two chosen)

Goal: Design a layout for a one- or two-car garage (your choice). **ENTRY DEADLINE: FEB 28, 2019**

Two room-size choices:

Single car garage (14'x24')

Double car garage (24'x24')



Note: This is a wide open home layout design contest using any design approach. This is not a modular-only contest like past contests.

CONTEST RULES

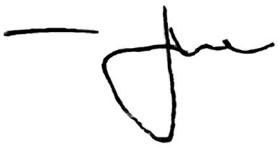
- Scale: Z-G, standard or narrow gauge.
- Draw up a final track plan and write up the design to be published. Extra points awarded for a high quality track plan, text, illustrations, photos, and captions.
- Describe the layout theme, rationale, and era (if any).
- Outline the basic construction methods you would take if you were to build this design. Extra points awarded for innovative thinking.
- The car does not need to go into the garage. You can use the entire space. However, the garage door does need to remain functional, it cannot be sealed shut, so describe what you will do to deal with that need.
- Beyond that, pretty much anything goes. Have fun and let's come up with some interesting track plans for a garage.
- All submissions must be publishable. If the submission is not formatted to be ready for publication, it will be disqualified. Take the time to be complete, provide captions, and to describe things completely in your text. See the MRH submission guidelines for more information.
- The best submissions will be published and contributors paid for the article.

SUBMIT ENTRY (Choose "Contest entry")

I can tell you I'm really sold on using these paints and I love them more than I ever did using the Floquil and PollyScale paints.

One great discovery, thanks to Vallejo, is using drop bottles to dispense the paint. I've become such a fan of drop bottles that I buy plastic dropper bottles off Amazon (amzn.com/B00ORIYDCC) and repackage my bottle paints into these bottles.

The paint lasts longer and it's extemely easy to dispense the paint without making a mess via drop bottles. So check out the book if you haven't already! ☑



Last issue's ratings

The three top-rated articles in the December 2018 issue of *Model Railroad Hobbyist* are:

4.4 What's Neat: Soundtraxx steam install, ...
4.3 Electrical Impulses: Signaling my layout, part 3
4.3 MRH Q-A-T: Tank cars/covered hoppers & small layouts, ...

Issue overall: **4.4**

Please rate the articles! Click the reader comments button on each article and select the star rating you think each article deserves. We depend on these ratings to help us determine which articles to publish, so your rating matters! ■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YES, IT'S A MODEL
Photo by Jürg Rüedi

★★★★★
RATE THIS ARTICLE

MRH Marketplace

Jim Six upgrades a Broadway Limited USRA 4-6-2, with assistance from Ray Breyer …

Modeling a
New York Central Class K3q Pacific

1. Upgraded Broadway Limited NYC 4-6-2, engineer's side.

I have wanted to model a NYC 4-6-2 Pacific for some time. Now that Broadway Limited has released the USRA Pacific, we have a loco that makes a good foundation for this project.

Yes, I could have found an older brass model but am not ready to start rebuilding brass steam locomotives. As you can see, I did a lot of re-detailing of the model.

Why an NYC Pacific?

I've been asked why I chose a 4-6-2 Pacific. After all, the New York Central was famous for its fleet of passenger steam locomotives, particularly its hugely popular 4-6-4 J-class Hudson locomotive. Let's take a brief look at NYC passenger power.

Worth noting, the railroad operated 4-6-0 ten wheelers right up into the 1950s. They operated on branch lines in Michigan and in Ontario, Canada. Those 4-6-0 Ten-Wheelers were nice "little" locomotives but couldn't pull much of a train.

Next came the 4-6-2 Pacific locomotives. The NYC had many in the K-class and there were plenty of these Pacific locomotives on the roster. Most of the New York Central Lines had K-3 Pacific locomotives. They are a pretty useful locomotive to know about if you're a NYC modeler.

B&A, CASO, CCC&StL, LS&MS, NYC&HR, NYC, P&E all had them. The only major subsidiaries that never had them were the

2. Upgraded Broadway Limited NYC 4-6-2, fireman's side.

P&LE (they had K-4 and K-6 engines) and the LE&W (they never had any Pacific locomotives). The LE&W became part of the Nickel Plate Road in 1917.

The NYC K-class was only available in HO as brass or as the old Bowser kit locomotive.

Next came the famous NYC 4-6-4 Hudson. Several HO scale models are available, but I have none and won't be adding any because the Hudson was not put in service until 1927.

In 1927, they were few and were confined to mainlines. They certainly did not make it to Sturgis. Then there was the majestic Niagara 4-8-4, but it first appeared in the mid-1940s, way too late for my 1927 setting, and they were not operated on branch lines.

So, where does this leave me? The answer for me is to add a 4-6-2 class K3 Pacific to my locomotive roster by re-detailing a USRA light Pacific. The most common 4-6-2 on the New York Central in the middle 1920s was class K3.

The K3 class Pacific locomotives were very similar to the USRA locomotive, most importantly the boiler size and shape. I know that most modelers will be pleased with the Broadway USRA Pacific factory painted for the NYC.

The New York Central had plenty of USRA locomotives, including 194 H6 class 2-8-2 Mikados and ten Z1 class 2-10-2 Texas drag locomotives, but they had no USRA 4-6-2 Pacific locomotives.

Then again, most modelers are not sufficiently familiar with the NYC K3 locomotives to know the differences. As you will see, I did not have to do a ton of work to make a credible NYC K3q class model.

My New York Central locomotive roster includes two Trix 2-8-2s, one Broadway Limited 4-6-2, two Bachmann 4-6-0s, and a lone Proto 2000 2-10-2 for handling the coal trains to and from the power plant. I do have a Bachmann 2-8-0 that I plan to make into an NYC 2-8-0, but I am not there yet.

I also have one Overland brass NYC class H5 2-8-2. I got it from a friend in Texas who improved some details and made sure that it runs well. All my steam locomotives run very well and have bullet-proof reliability. I have added details and weathering to some.

All will eventually visit my workbench for similar treatment. In short, I have developed a "sub-hobby" of re-detailing HO steam locomotives to better represent specific New York Central prototypes.

The model featured here is a Broadway Limited USRA light Pacific that I "tweaked" to specifically represent NYC K3 6467. Without an available NYC Pacific I opted to start with the new Broadway Limited USRA 4-6-2 model and change some detail to better match a specific NYC K3q class locomotive.

While not a perfect match, I think it is pretty good.

Judge for yourself. The prototype for this locomotive was a Big Four (CCC&StL) 4-6-2 passenger locomotive. By 1927, the Big Four had become a component of the greater *New York Central Lines.* The Big Four locomotives, in fact, looked like many other NYC locomotives.

The one real difference was that the railroad name on the sides of the tender stated *NEW YORK CENTRAL LINES* whereas NYC locomotive tenders simply said *NEW YORK CENTRAL.* Small sub-lettering high on the tender sides read *CCC&StL.*

The same was true for the Michigan Central, Toledo and Ohio Central, Pittsburgh and Lake Erie, and the Peoria and Eastern railroads.

If you are considering modeling a New York Central K3 locomotive, be aware that several brass NYC Pacific locomotives have been produced over the past 50 years. They can be found on eBay and other places. I had one, and in a moment of pique let it go.

I had become frustrated with the cost of making brass models run well, adding DCC/sound, then painting them. Doing so is an expensive proposition not to be taken lightly. At the time, the cost was simply too high for me.

I planned to do some simple detail changes that I (and most modelers) would find not too difficult to do.

Why I love modeling steam in 1927

Do you enjoy American history? Do you like learning and knowing about times gone by? Do you like steam locomotives, wooden freight cars, and cabooses? If you do, then modeling an early setting can help you enjoy and appreciate all these things. This is a perfect time for HO scale modelers with so many great steam locomotives and early rolling stock that are available today.

Me? I love history and early railroading. I love them a lot, so much so that after much deliberation I gave up modeling the "diesel era" and backdated to modeling 1927. This obviously means that I need steam locomotives.

Having steam locomotives in HO scale is not much of an issue if you are modeling the New York Central, Pennsylvania, or maybe the Union Pacific (if you like Big Boys and Challengers). If you want to model the Southern Pacific or the Norfolk and Western,

while there are a few big steam locomotives available, things aren't quite as simple.

Even the Union Pacific will require brass models if you want smaller locomotives. If you want to model most other railroads, you will be crossing over into "dark territory." Few other steam locomotives are available other than one or two for any railroad.

Because of this, most model railroaders are left with few choices – switch your prototype of choice to the ATSF, PRR, NYC, SP or UP. Or, freelance a railroad as Bill Darnaby has done with his Maumee Route, or search the brass market for a limited selection representing other railroads and be prepared to pay the price – or move your modeled setting to the diesel era.

I haven't mentioned scratch building steam locomotives because precious few of us have the skills and tools to do so. With all these negatives, why then have I decided to model 1927 where only steam locomotives will work? Because I want the challenge, and because I love steam power and wooden freight cars. Simple enough.

I'm fortunate in that I grew up with the New York Central. I also spent time in and around Pittsburgh where I came to know the Pennsylvania. So, why not model what I am semi-familiar with and have great memories of?

There are plenty of steam locomotive models available representing the Pennsylvania. There are some available of NYC prototypes. These two one-time giants of railroading are well represented by what manufacturers have offered in recent years.

A dozen or so years ago, model manufacturers started producing high quality steam locomotives. They have treated Pennsy modelers exceptionally well. Problem is, most of what has been offered are

Why I love modeling steam in 1927
Continued ...

large mainline locomotives and not smaller locomotives that "normal" model railroaders can use.

I am excluding the "old time" locomotives that are based on prototypes that pre-date 1900. We "normal" modelers need 4-6-0, 4-6-2, 2-8-0, and 2-8-2 locomotives that can operate on smaller home layouts and in settings that represent 1900 to the Second World War.

Since I model a small town in southwest Michigan where the Pennsy and the New York Central operated, I have been forced to re-detail existing models to represent my NYC prototypes. The Pennsy is no problem. Just buy Broadway Limited PRR models!

Back in the time that I am modeling – 1927 – the New York Central operated a few local freight trains and passenger trains through Sturgis, Michigan, the setting of my layout. There were several local industries to be switched along with a depot for the passengers. The Pennsy also had a depot and serviced local industries.

Because of this I want to represent both freight and passenger service on my 1927 layout. As such, I need both freight and passenger power representing both railroads. For the Central this means one or two 4-6-2 Pacific locomotives. I am also looking into updating a Bachmann 4-6-0 as a NYC locomotive for light passenger service. ■

About the Broadway Limited 4-6-2 Pacific

I have been asked a couple of times why I bother to do a project like this? Fair question.

I am tempted to answer "because I can!", but I won't. The simple reason is that wanting a specific prototype locomotive in my modeling scale has long been part of our hobby.

More importantly, I thoroughly enjoy projects like this. It is a lot of fun even when there are moments of frustration in the process. The amount of work to transform the Broadway Limited model into the NYC K3Q featured here is reasonable.

So is the cost. The resulting model is very rewarding for me. What other reason or reasons do I need?

That said, the Broadway Limited USRA 4-6-2 Pacific is a good model. It runs very well across its speed range. I love how smoothly it starts and stops – something that many older HO steam locomotive cannot do well. Detail is crisp. Paint is excellent.

3. Broadway Limited undecorated USRA 4-6-2 Pacific, right out of the box.

The only detail difference that that steam buffs may notice between the BLI model and a typical USRA 4-6-2 prototype is that the counter weight on the center driver is too small when compared to the prototype. It should be larger than on the other drivers. On the model, the counter weight is the same size on all drivers. This was probably done so that the manufacturer could use the same driver on all three axles as a cost savings.

I have been thinking about this and will probably cut a thin piece of sheet styrene to the proper shape for the counterweight, then overlay it onto the driver covering the cast-in counterweight. I will have to keep it thin enough to not interfere with the drive rods, crank, or other moving parts.

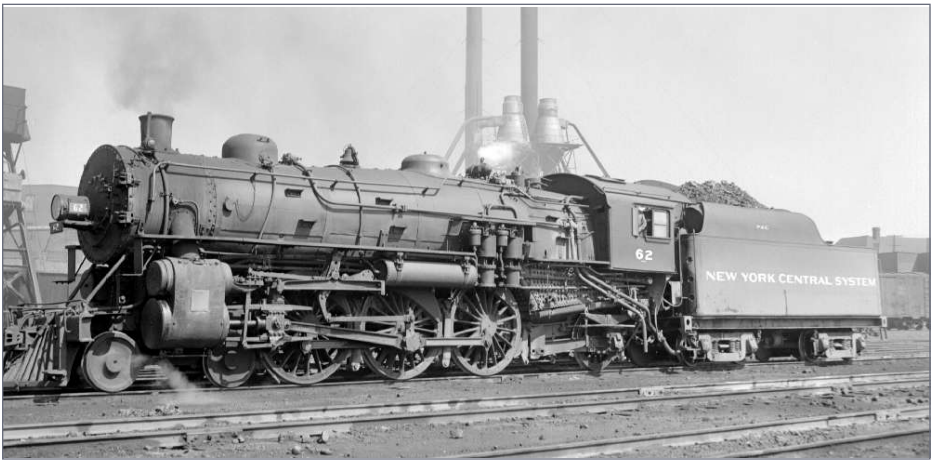
As you can see, this BLI steam locomotive [3] is a sharply detailed and painted model. After test running I found that it is an excellent running model at all speeds. It starts and stops very smoothly. This is a very nice looking model that runs very well. I cannot say enough positives about it.

For me, the only negative it that while New York Central had 180 USRA Mikados, they did not have any USRA 4-6-2 Pacific locomotives. Sigh ...

However, the "Central" did roster a serious number of class K3 Pacific locomotives similar enough to the USRA Pacific that after discussing this with friend Ray Breyer, I decided to re-detail a Broadway Limited model to better represent a NYC class K3q locomotive.

A closer look at modeling a K3

Many NYC K3 locomotives have a tender that appears to be a match for a USRA tender like on the Broadway Limited model.



4. Photo of the specific prototype that I'm modeling.

However, I chose to replace the tender body with a brass NYC tender body that was produced many years ago by Oriental. This tender is "signature" NYC. Other differences include the cab on some but not all, and the various appliances hanging on the locomotives.

Above is the specific locomotive that I modeled [4]. When built, this locomotive was CCC&StL (Big Four) 6467. At the time of the 1936 reorganization of the New York Central from "Lines" to "System" it became NYC 4867. In 1946 it was transferred to subsidiary Peoria & Eastern and renumbered to P&E 62. It was scrapped in 1950.

The cab on CCC&StL 6467 is slightly different than the USRA cab on the BLI model, but not by much. This prototype has two single phase air pumps instead of the compound air pump of the BLI model. This air pump difference is easily corrected to match this NYC prototype.

The model's bell had to be relocated to the position shown atop the boiler. Some walkway relocation was needed, and plumbing either moved or added. A few other brass appliances were added to the model.

Ray Breyer supplied me with an Oriental brass tender that matches many New York Central steam locomotives, including many K3 class locomotives. I did not have to swap tenders.

Instead, all that was called for was to replace the Broadway Limited tender body shell with that of the Oriental model. This allows me to retain the Broadway Limited tender chassis with all electronics, speakers, etc. This was a huge saving of work and time.

I replaced the freight trucks that the Broadway Limited model has with express trucks from a Bachmann steam locomotive (that Ray also supplied).

Now is a good time to point out that no two steam locomotives are identical. In fact, the longer they are in service, the greater the differences. In [5] is another former CCC&StL K3 Pacific. I

5. Another former CCC&StL K3 Pacific similar to #62 [4] that I almost chose for my prototype instead.

6. Yet another variation of the New York Central K3 Pacific.

almost chose this prototype as my modeling subject. I did not have a Commonwealth trailing truck on hand or I would have.

Should I do a second NYC Pacific it will be this specific prototype. This would be an easy conversion of the Broadway Limited model – maybe less work than CCC&StL 6467 that I modeled. The air pump is a cross-compound pump like the one on the Broadway model.

In [6] we see another variation of the New York Central K3 Pacific. This locomotive had a tender that is a close match for the USRA prototype, but the cab is different. It is the older NYC standard cab with two windows on each side.

This cab would have to be scratchbuilt or kitbashed in some way. I chose not to do either. I may draw a 3D model and print this cab in the future. Another difference is the air tank, which is much longer.

NYC 4556 [7] shows the engineer's side of a NYC 4-6-2. You can see the USRA-like tender, the early two-window cab, and the large air tank.

Note the huge counterweight on the center driver. If not for the cab and large air tank, converting the BLI model to this prototype would have been a simple matter. I need to get busy 3D modeling that cab!

Developing a plan of attack

The first thing to do in a project like this is to acquire as many prototype photos as you can get, then study them until you become familiar with the locomotives' differences and commonalities.

Following this analysis, you need to pick a specific locomotive to model. For me this was not an easy thing to do. I liked them all! I have built diesel models for more than forty years but precious few steam locomotives.

7. Engineer's side view of New York Central 4-6-2 Pacific #4556.

Needless to say, I was not a steam locomotive expert and still am not. I didn't know much about steam locomotives other than that I really liked them.

Studying the many prototype photos drove home the point that no two steam locomotives were identical. Worse yet, the older they got the more differences there were, caused by the individual shops that did things "their way".

Details got moved around, swapped with different parts, even tenders were swapped. This was a little troubling for me because I have long been at ease with diesels which are essentially all the same (for any given model).

Being friends with Ray Breyer was a huge help for me with this project. Ray supplied many of the prototype photos and directions for finding others. He answered all my questions and even supplied me with several of the detail parts that were used on my model.

Best of all, he provided the brass NYC tender that matched the prototype I was modeling. Talk about a good buddy! Thanks Ray!

After going back-and-forth with Ray for a few weeks, I finally settled on CCC&StL 6467 as the subject of this project. This prototype would require some changes to the Broadway Limited model but nothing that I couldn't do. Let's walk through the steps that I took to transform the model from a USRA light Pacific into CCC&StL class K3-q Pacific #6467.

The transformation processes

Here is a brief outline of the changes that I made to the Broadway Limited model.

1. Relocate the bell to the NYC position atop the boiler.

2. Replace the compound air pump with two single-phase air pumps.
3. Relocate sections of the walkway.
4. Add a pair of wind deflectors to the back of the cab roof.
5. Swap tender bodies.
6. Add several Cal-Scale (Bowser) brass detail parts
7. Add copper wire as plumbing
8. Touch up the paint.
9. Decal the model.
10. Apply weathering.

These ten items, along with a few minor additions, were all that was done to the model.

Before starting modeling work I set my goals and objectives for the project. One *huge* prerequisite for me: I will *not* disassemble the Broadway Limited model. I do not take apart steam locomotive models. No way, brothers!

I have no issue with taking apart a diesel model, but I will not disassemble a steam locomotive. Ain't gonna happen. So, all work on the model had to be superficial and could be performed on the assembled model.

I did remove the tender body but did not take apart anything on the actual locomotive.

I did not want to swap the BLI tender for the brass one because the electronics were already installed in the Broadway Limited tender. As already pointed out, I simply removed the Broadway Limited tender body and replaced it with the Oriental Limited tender body matching my prototype [8].

8. NYC tender that I chose to model.

The new tender body was a perfect fit. Talk about being lucky! Sometimes blind luck is more powerful than the most careful planning. Being honest, had the tender body swap not been so easy I would have retained the USRA tender and returned the brass tender to Ray.

I was on a tight timeline for this project and could not overspend time on any aspect of it. In fact, I finished the model only three days before my deadline set by publisher Joe Fugate! [Phew! – ed.]

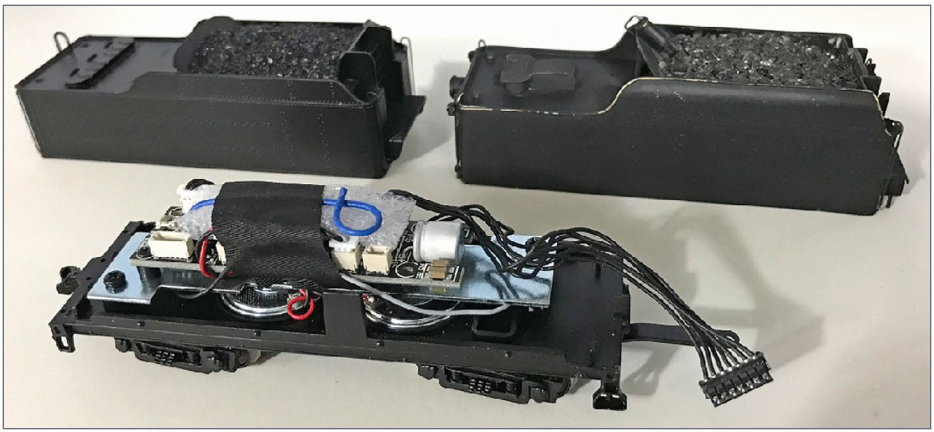
The first thing I did was to separate the tender from the locomotive. This required pulling the drawbar from the pin on the tender, then unplugging the connecting DCC cable from the the back of the locomotive's cab.

Once the tender was free from the locomotive, the body was removed from the tender chassis. I looked for screws but found none. The tender body is a press fit to the chassis, so I pried if off.

I had already removed the brass tender from the brass tender chassis so it was ready to be test fit. Before doing so I compared the two tender bodies. That is when I found that the inside length of the two bodies were a perfect match.

In [9] you can see the Broadway Limited tender chassis and the two different tender bodies in the background. The body in the upper left is the original Broadway Limited USRA tender body, On the right is the Oriental Limited brass tender body that Ray Breyer provided.

I did have to make a minor modification to the brass tender body: the area below the fireman's platform had to be cut out to allow the electrical wire harness to pass through.



9. Broadway Limited tender chassis with electronics and twin speakers. In the back are the two different tender bodies – see the text for details.

I cut two vertical slots with a cutting disk in my old Dremel Moto Tool, then with pliers grabbed the section to be removed and

10. I needed to cut a slot in the replacement tender body to allow all the wires to pass through.

11. Another view showing the tender loco wire harness.

twisted it back and forth until it broke off. Next, the edges where the section of brass was removed were lightly filed to remove burrs and any rough edges [10, 11].

The brass tender Ray provided is not a USRA tender – it has curved side sheets at the top of the coal bunker. This is very New York Central, though many other railroads' tenders also had this feature.

The New York Central prototype K3 Pacific locomotives had Commonwealth express trucks under the tender. I used Bachmann tender trucks of this type. The swap was a straightforward one-for-one swap-out.

Just be sure to note which side of the trucks have the insulated wheels and be sure to install the Bachmann trucks accordingly. See the modified tender before repainting here [11]. This tender just screams New York Central!

Photos 12 and 13 show a comparison of tenders posed with the unmodified locomotive. Keep in mind that many New York Central K3 Pacific locomotives had a tender very much like the USRA tender so if you cannot come up with the brass NYC

12. Original tender that came with the BLI locomotive.

13. Alternate tender posed behind the unmodified BLI locomotive.

tender, then just keep the USRA tender. That will work and cost you less time, effort, and cash!

As for the locomotive, it presented more of a challenge than a simple tender body swap. Still, everything I did to the Broadway Limited model was reasonable and somewhat easy to do. Once I got past a few frustrations (more on that later) it was fun – certainly satisfying.

The biggest bullet to bite is probably removing items from this beautiful Broadway Limited model. I suspect that many don't want to remove added on detail or carve off molded on detail. Sometimes you have to just hold your breath and go for it.

Closeup detail reference photos

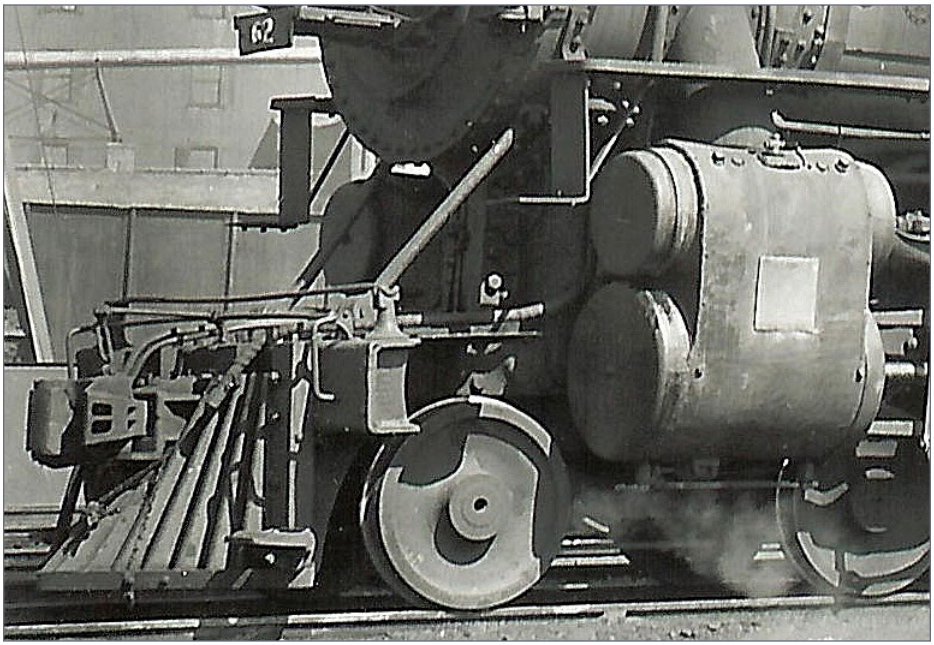
Let's look at several detail photos of the prototype to help guide the detailing of the model. Such photos are a guide, but not a mandate. How closely you match them on your project is up to you. Don't worry about what others may think or say. Just please yourself.

In my case, I certainly did not account for everything in these photos but addressed enough to convince most modelers that my model is a New York Central K3 locomotive.

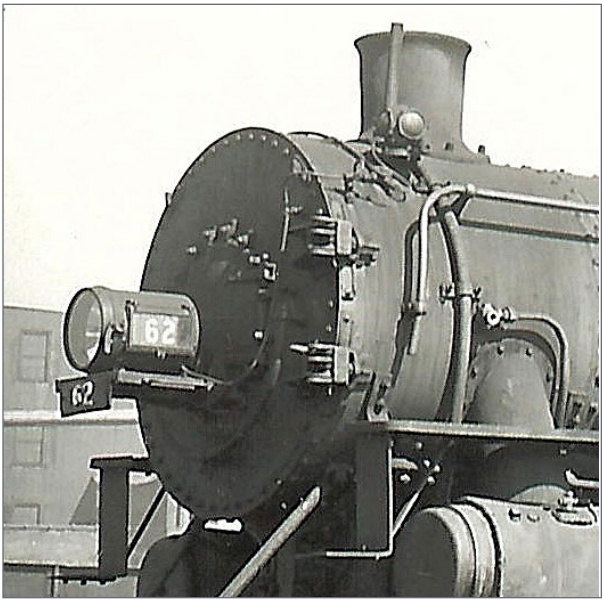
I am not interested in building display models and certainly not contest models. I only want a good model that runs well on my layout and looks like what it is supposed to look like.

Looking at the front of the loco, the model pilot beam is farther forward than suggested in this photo [14]. I planned to correct this but did not have enough time to do so and still meet my MRH deadline.

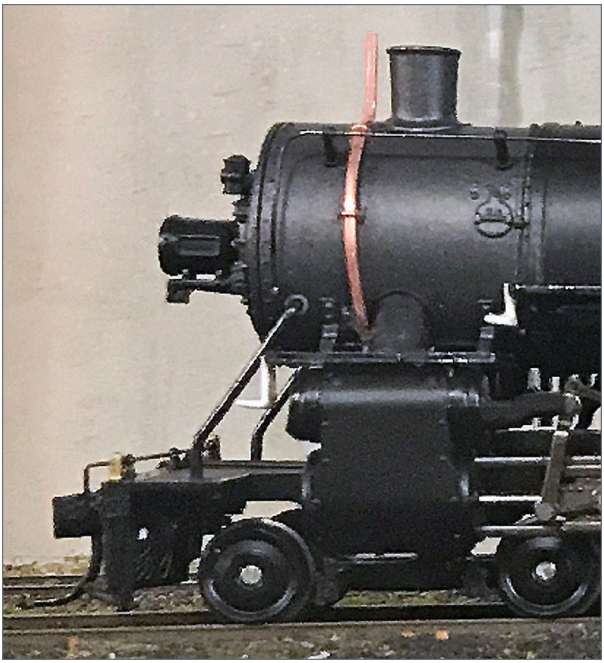
Also, there are no "stairs" from the walkway to the pilot deck. Instead, a single formed step hangs from the front of the walkway. I removed the stairs from the model and fabricated the single steps from Evergreen strip styrene.



14. Loco pilot and its proximity to the front wheel of the pony truck.



15. Smokebox area on the prototype.

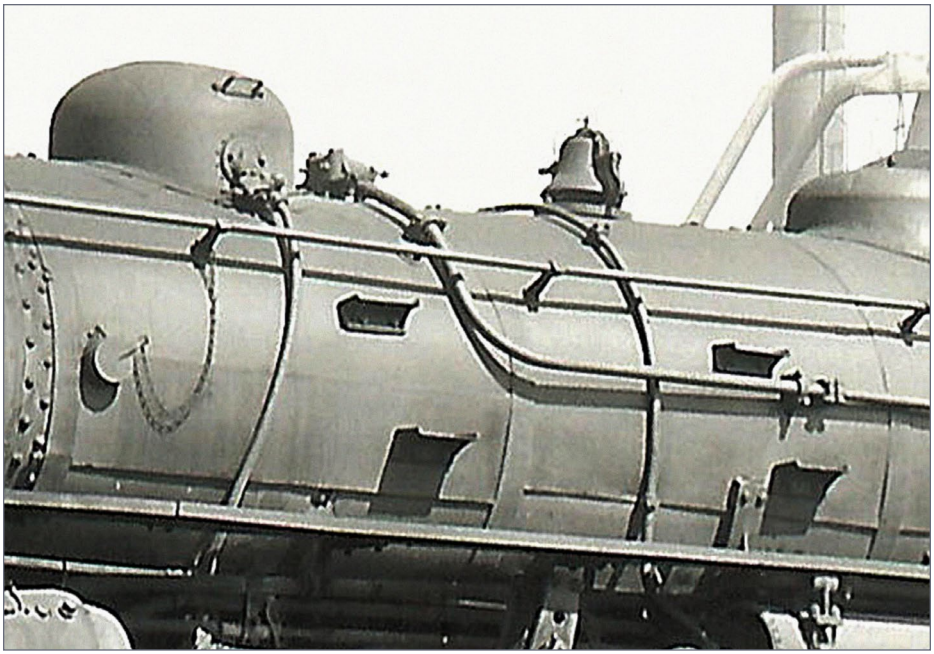


16. Smokebox area on the model.

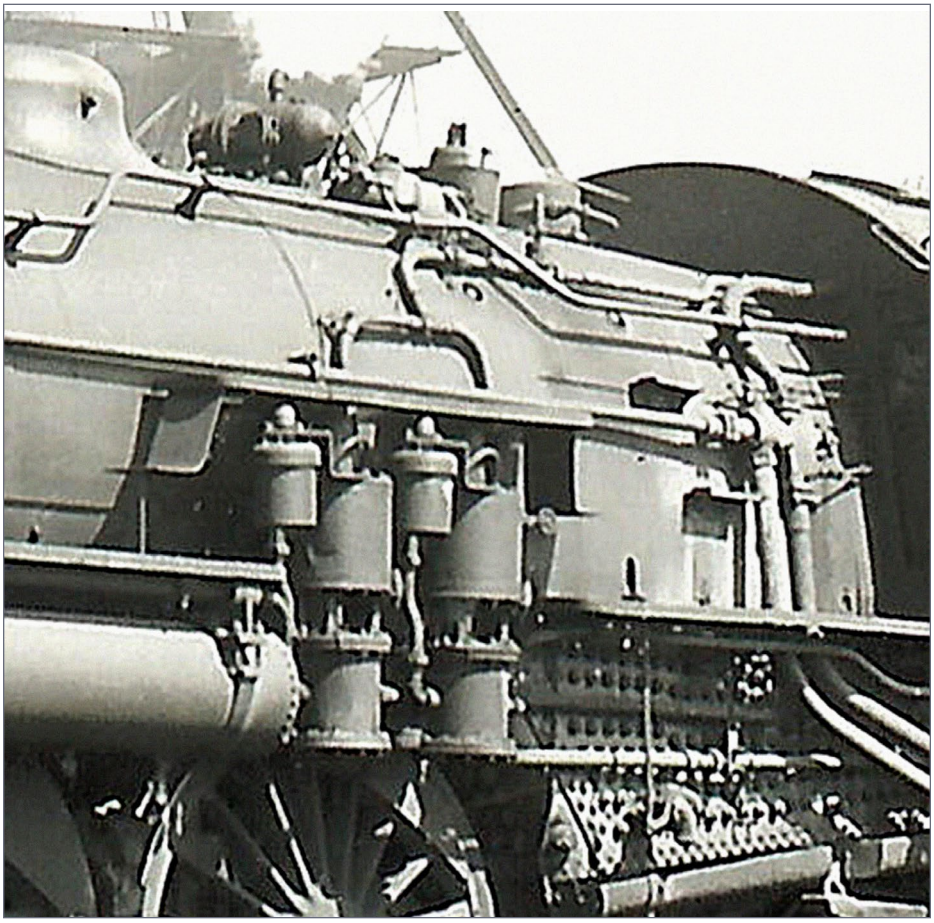
Referring to the area around the smokebox front [15, 16], it is plain – classic New York Central. The classification lights sit high on the sides of the smokebox just ahead of the stack. On the model they hang at about 2 o'clock and 10 o'clock on the smokebox face.

While I wanted to relocate them, I ran out of time and left them where Broadway Limited had placed them. Many NYC K3 locomotives had them there anyway. I may relocate them in the future.

You can also see a pipe that runs upward from below the walkway up to near the smoke stack before bending straight upward. I did add this pipe on my model using 18-gage copper wire



17. Boiler mid-section on the prototype loco.



18. Very busy firebox area just ahead of the cab.

stripped of its plastic sheathing. Copper wire works well for adding plumbing to a model steam locomotive.

The bell is approximately centered between the sand and steam domes [17]. Just behind the sand dome sits the top-mounted check valve. Note the four steps on the boiler side. I used Evergreen styrene C-channel to model these steps.

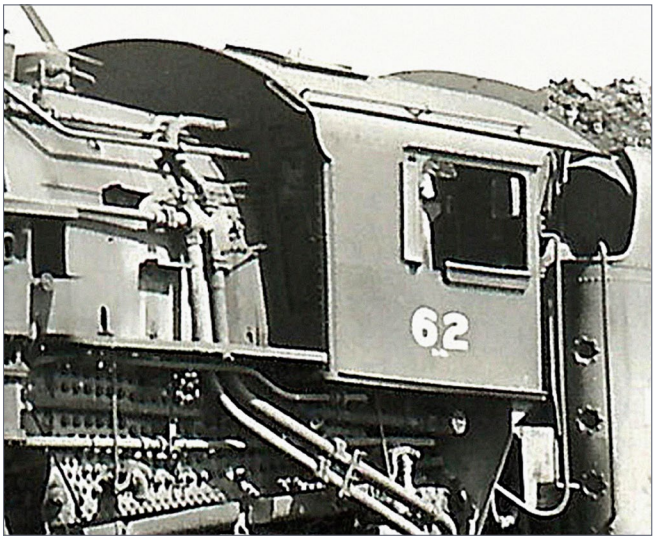
The firebox includes a number of details [18] including the generator, pop valves, whistle, and muffler. A non-lifting injector sits on the side just ahead of the cab. Each side of the locomotive firebox has one mounted on it.

The twin single-phase air pumps hang just above the rear driver. While many NYC K3 locomotives had this arrangement, most did not. They had the single cross-compound air pump that comes on the Broadway model.

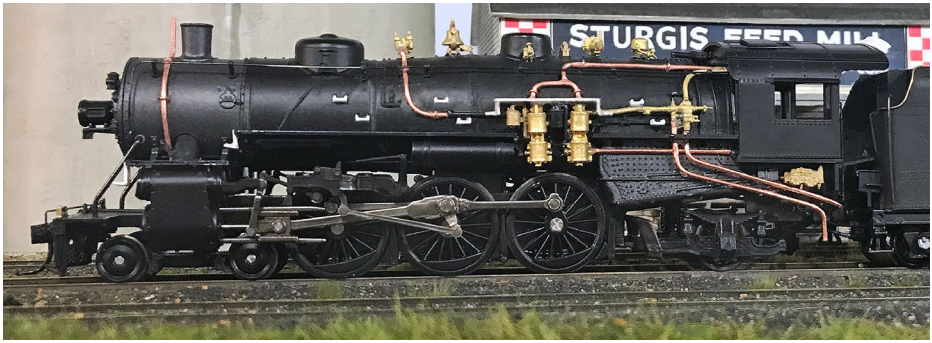
Note that the walkway runs above the pumps with a formed step at its front and back. I used 18-gage copper wire for the plumbing in this area as well.

We see the cab [19] has a welded structure – meaning there are no rivets.

The Broadway model has rivets on the cab sides. I carved and filed them off and smoothed the surfaces with 1000-grit wet/dry sandpaper. Note the wind deflector at the rear of the cab roof. Since the Broadway model does not have this I made mine of strip styrene and cemented it in place.



19. The prototype loco cab.



20. Modified fireman's side of my model.

Fireman's side detailing

Here you can see the modified fireman's side of the model before painting [20].

You can see the Cal-Scale (Bowser) brass detail parts along with the 18-gage copper wire and Evergreen styrene items that have been added. While studying this photo, I noticed that the steam whistle had not been added yet. That is when I discovered that I didn't have one!

I looked up the appropriate Cal-Scale whistle on line, called Jeff Hall at Hall's True Value Hardware in Goshen, IN., and ordered a couple. Three days later Jeff let me know they had arrived and I went to pick them up. Jeff certainly saved the day as I would not have completed the model in time had he not.

I made the six staggered white steps from Evergreen #263 styrene 0.100" C-channel. I cut them to a length that looked good and cemented them to the boiler sides.

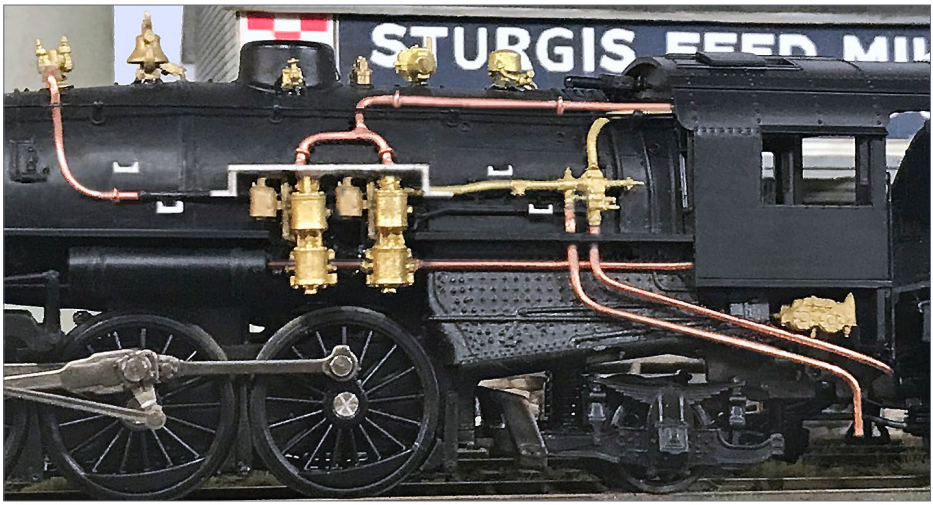
All the piping I added uses 18-gage copper wire from Menards. I formed each piece and cut it to represent pipes that I found in

the prototype photos. To secure them in place I formed U-shaped pipe clamps. Yes, pipe clamps!

Not all of this project was smooth sailing. I had cemented the pipes in place but friends Ray Breyer and Earl Murphy suggested that I secure them with formed wire pipe clamps. At first I resisted doing this because I had tried adding pipe clamps in earlier, similar projects and had failed miserably.

After thinking about it again, I decided to heed their suggestion and try again. At first I repeated my mistakes of that earlier project and became so frustrated that I was tempted to throw the model against the side of the concrete basement wall. Fortunately, I resisted the temptation and walked away.

The problem is that my eyes are not what they used to be and I can't see some of the smaller things that I used to be able to see. After several hours, I returned to the model and tried again, refining my procedure.



21. Closeup of the fireman's side of the boiler.

This time, I successfully installed the much-needed pipe clamps. Instead of using small brass rod, I used single 24-gage wire strands formed into a U-shape by bending them over the back side of an X-Acto knife blade. I then cut them to length with a small diagonal cutter.

I drilled a #76 hole on each side of the pipe at each clamp location, then dipped the ends of each "pipe clamp" in a puddle of CA cement before carefully pressing it over the pipe and into the holes. This worked well once I got the hang of it.

Looking at [21] you can see six of my pipe clamps along with other brass detail items. Each detail has a mounting shaft on the side that attaches to the model.

Nothing is going to fall off or break off this model. One last comment about the detail in this photo – I really like working with copper wire for pipes rather than brass rod. I can form it more easily into shape and it holds its shape as well or better than brass.

Photo [22] shows the fireman's side of the completed model. Paint, lettering, and light weathering will transform this model into a credible representation of CCC&StL 6467.

22. Fully upgraded model, fireman's side.

To my eyes the added detail looks really good after paint and weathering are added [23].

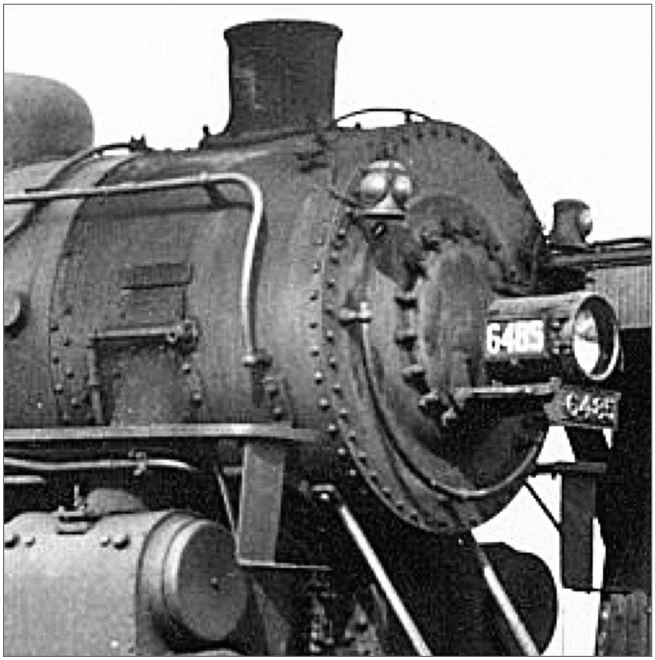
Engineer's side detailing

Starting with [24], let's look at the engineer's side of New York Central K3 locomotives. Keep in mind that no two locomotives are exactly alike. My model closely matches this view of K3 6485.

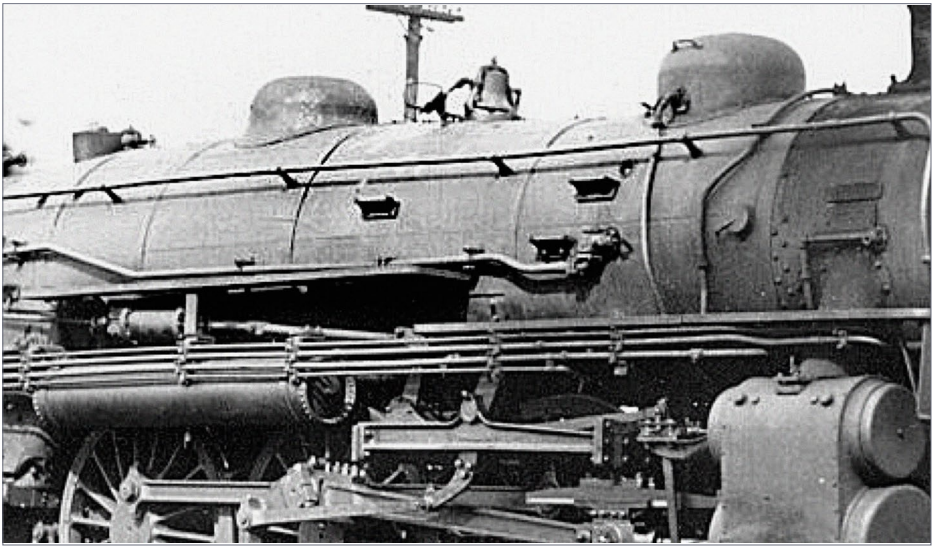
The class lights are in the same location as on my model. Note that the steps that hang from the walkways are not perfectly aligned. I find this interesting because when a model is not aligned perfectly people will snicker.

Details on the engineer's side of the locomotive [25] are different from the fireman's side. For one thing, this side has no air pumps. On this locomotive, the check valve is positioned on the boiler side instead of closer to the top. The access steps along this side hang in different locations as well.

23. Painted, lettered, and weathered model, fireman's side.



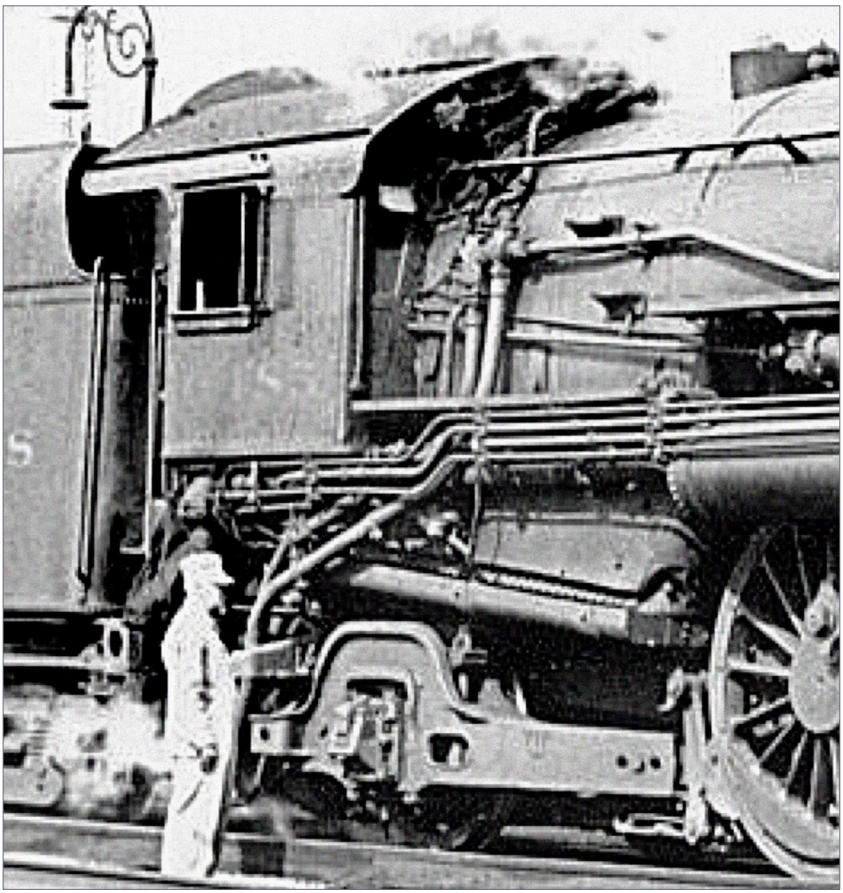
24. Front of the prototype loco, engineer's side.



25. Mid-boiler view of the engineer's side.

In [26] we see a non-lifting injector on the engineer's side of the locomotive. There is one on both sides.

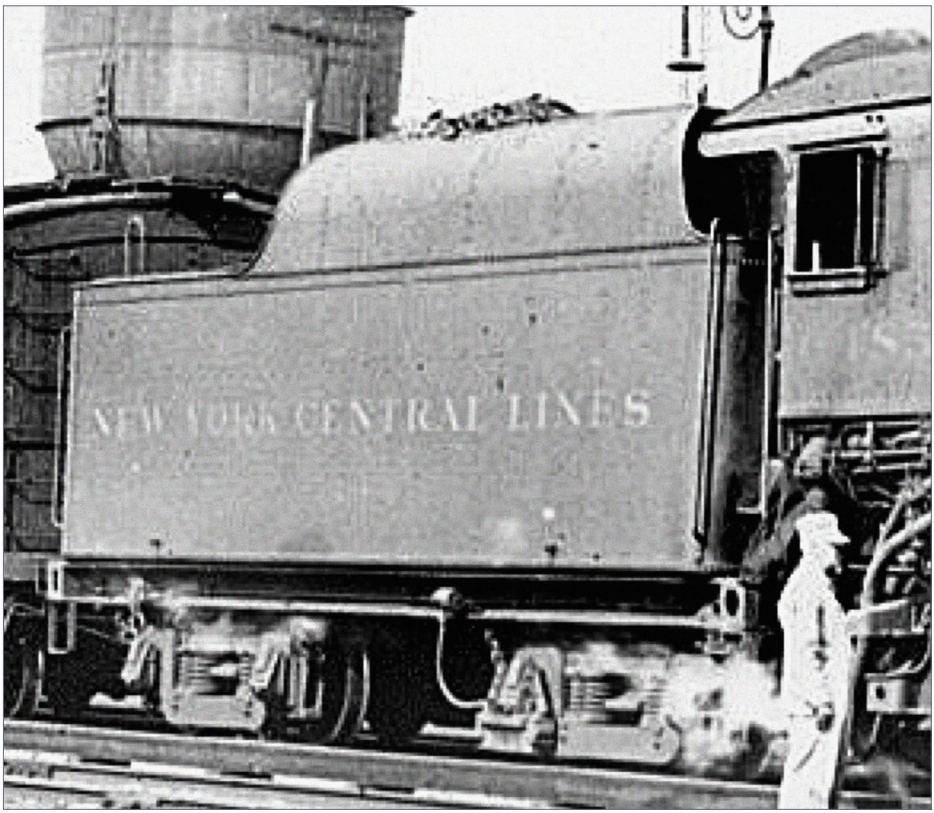
This particular K3 locomotive has a Commonwealth trailing truck. Many NYC K3 locomotives were fitted with this trailing truck. One of the things that always fascinates me about steam locomotives is the wealth of details and plumbing on the outside. They add up to a very busy-looking appearance.



26. Rear boiler view, just in front of the cab.

This tender shows the early New York Central lettering typeface [27]. It is also lettered as NEW YORK CENTRAL LINES. The 6485 is another Big Four class K3 locomotive. Note the automatic train stop (ATS) shoe on the rear axle of the forward truck under the tender. I could not come up with one in time to add it to this model but will do so sometime in the future.

The engineer's side of the fully detailed model is shown here [28]. While not as "busy" as the fireman's side, it still has a lot of detail – much of it is Broadway Limited factory applied.



27. Tender, engineer's side.

28. Engineer's side of the model, ready for paint and decals.

29. Painted, lettered and weathered locomotive, engineer's side.

Again, I added 18-gage copper wire and Bowser Cal-Scale brass detail parts along with some Evergreen plastic detail. The model is ready for paint and decals, then weathering.

Here is the engineer's side of the completed model with paint, decals, and weathering applied [29]. I wanted the finished engine to appear as the four-year-old locomotive that it was in 1927, and not heavily weathered to represent an end-of-life appearance.

In the late 1920s the K3 class was still the primary passenger locomotive of the New York Central and its subsidiaries. Looking at this photo, I believe that I will add an engineer and fireman inside the cab soon!

About painting and decaling

Viewing my completed models, a friend asked me what I used for paints. At first I was reluctant to answer. Why? I have not painted a model in more than fifteen years!

Yes, I have weathered factory painted models but have not painted one myself since moving to Indiana more than thirteen years ago! During those years my favorite paints were discontinued when Floquil closed shop. I didn't know what I would use!

I had stored my old paints in a sealed Tupperware container. I got it out and opened it up. All my paints that had been previously opened were hard as a rock. I pitched them all.

However, about a dozen bottles had never been opened and appeared to be like new, so I was fortunate. My old unopened Polly-S paints were perfect! So, I painted the model with a mix of Polly-S Engine Black and Polly-S Grimy Black.

Before painting, I rebuilt my old Paasche model-H airbrush with new parts – it had not been used since before the year 2000! The painting went flawlessly. I have enough Polly-S paints to paint another dozen or more steam locomotives.

After painting, I applied the Microscale decals – and that became my *second* big frustration with this modeling project – applying the decals. It was not a pleasant task at all.

I find Microscale decals to generally be the finest in the hobby. I have not applied a decal in maybe fifteen years and found that something has changed. I cannot see as well as I used to and had a terrible time seeing the white decals on the light blue decal paper!

Old age has not been kind to me. I had a very difficult time identifying the correct numbers and orienting them properly. Once they slid off the decal paper and onto the black model, they were easy to see and from that point on things went as expected.

The decals are white. Microscale put them on a very light blue decal paper. I could not see the small lettering and numbers! No matter how hard I tried I had difficulty seeing the cab numbers. My eyes aren't what they used to be, but the white decal on light blue paper did not help.

After several attempts, I was able to get the correct numbers and get them positioned on the cab side. The tender lettering went easier. They were larger!

This brings up an important question. What paints will I use in the future when my old Poly-S paints run out? What about other models that I do not have the correct Polly-S color for?

I hope that after reading this article and these words we strike up a discussion on the MRH forum about this subject. I am interested in knowing what paints others are using these days. *[Sounds like*

Bill of materials

- 1 Cary/Bowser Muffler, Air System #13-130
- 1 Cal Scale/Bowser 2-cylinder Stoker #190-224
- 1 Cal Scale/Bowser Pyle Dual Voltage Generator #190-234
- 1 Cal Scale/Bowser Whistle # 190-250
- 2 Cal Scale/Bowser 9 1/2" Single Phase Air Pumps #190-256
- 2 Cal Scale/Bowser Large Lifting injectors #190-288
- 1 Cal Scale/Bowser Bell, Rope Pulls #190-317
- 1' Hardware Store 18-ga Solid Copper Wire
- 6" Hardware Store 24-ga Stranded Copper Wire
- 1 Evergreen Strip, .015" x .125" #116
- 1 Evergreen Channel, .100" #256
- 1 Oriental Brass NYC tender (optional)
- 1 Broadway Ltd. USRA Light Pacific, Unlettered, Paragon3 Sound/DC/DCC, HO #4631

Note-1: Item-6 is really a non-lifting injector. Cal Scale named it "lifting injector" in error.

Note-2: The copper wire is construction grade and can be found at your local hardware store or any "big box" store such as Home Depot, Lowes, or Menards.

Here is a hyperlink to the Broadway Limited page where the USRA Pacific models are listed:

www.broadway-limited.com/paragon3usrapacific4-6-2.aspx ■

we need to point Jim at the MRH post-Floquil painting guide, no? – ed.]

Concluding thoughts

A question has come up: Why go through all this work to re-detail an already nice model? Why not just apply decals and weathering?

30. Finished upgraded locomotive, engineer's side.

My answer is because I enjoy projects like this and really appreciate finished models that represent specific prototypes.

A streak of the prototype modeler remains within me. If you like tweaking details, then steam locomotive modeling may be for you. Still, is this an exercise in futility, or is it worth the expense, effort, and time?

The answer lies within each of us. For me, you bet it is!

For many folks, the Broadway Limited factory painted New York Central model will be just fine. Certainly, it is a very good model.

31. Finished upgraded locomotive, fireman's side.

For others, my model would come up short of the standard of accuracy they have set for themselves. Just keep in mind that no two of these locomotives were alike, nor are any two of us alike. ☑

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 about a model railroading subject. ■

Programming decoders for scale speed

↑Using DCC speed curves based on scale speed can give an extra level of control and a roster of locos you can run together at will. *Photo by Joe Fugate of Dale Kreutzer's Sn3 layout*

Bill Adkins shows how to build a "scale" speed table for your locos ...

It is always a pleasure to operate on my friend, Dale Kreutzer's, Sn3 Rio Grande Southern, 2nd District layout. Dale's layout is well-designed, with outstanding scenery, and flawless operation. Dale plans his operating sessions well, ensuring among other things, they provide an excellent opportunity to learn.

At one operating session, I was a helper engineer running a 4-6-0 Ten-Wheeler. I assisted a train powered with a 2-8-0 Consolidation run by the head end engineer.

My throttle settings as I ran the helper especially caught my attention. My throttle settings remained almost entirely the same as the head end engineer. Even though we were operating locomotives of a different class with different wheel arrangements and at opposite ends of the train, this amazed me!

At the end of the session, I asked Dale how he accomplished this feat.

Dale explained he had programmed all his locomotives, regardless of class, to the same mid-range speed (speed step 14) on a 28-step speed curve. This made his entire roster closely speed-matched.

Read on to learn how you too can do this with your loco fleet.

Dale and I share the same modeling scale and gauge, and we prefer Tsunami 2 decoders. We also use the same NCE radio-controlled DCC system. You may use different decoders or DCC system, but hopefully you find some techniques useful.

Important note: In this article I assume you already have some familiarity with decoder programming and the use of DecoderPro. This article is not a tutorial on decoder programming nor on using DecoderPro for the first time.

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Components

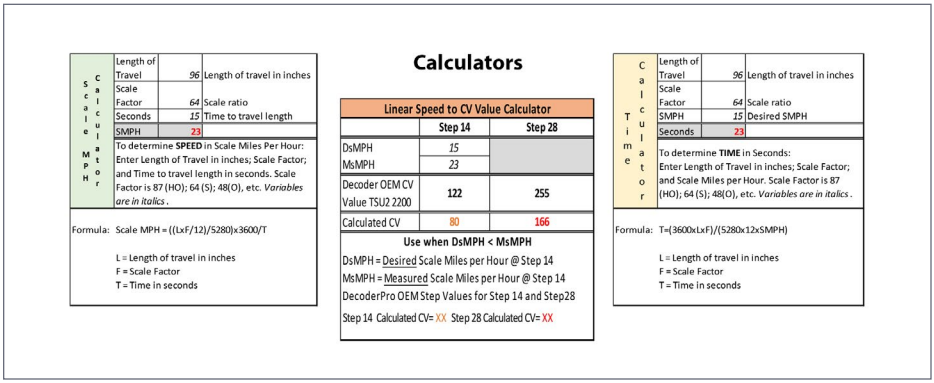
Here are the five components I use to do this fleet speed-matching.

Speed trap: I set up a track of a pre-measured distance for the locomotive to travel at a consistent speed while it is timed. This track needs to be level, straight, and ideally have no turnouts. While "longer is better," that somewhat depends on scale and preferences. I have a 96-inch section that is more than adequate for Sn3.

I marked off the beginning and end of this track section with a couple of map pins inserted into the ballast. Remember you will need extra track before and after this test area to allow the locomotive to reach speed before entering the measured section and to slow after exiting it.

Stopwatch: You need a digital or analog way to measure time in seconds. I installed a stopwatch on my cellphone from Keuwlsoft (keuwl.com/apps.html). Many others are available for download.

Calculators: I used an Excel spreadsheet to design three calculators with the following formulas:



Scale MPH Calculator

Length of Travel	96	Length of travel in inches
Scale Factor	64	Scale ratio
Seconds	15	Time to travel length
SMPH	23	

To determine **SPEED** in Scale Miles Per Hour: Enter Length of Travel in inches; Scale Factor; and Time to travel length in seconds. Scale Factor is 87 (HO); 64 (S); 48(O), etc. *Variables are in italics*.

Formula: Scale MPH = ((LxF/12)/5280)x3600/T

L = Length of travel in inches
F = Scale Factor
T = Time in seconds

Calculators

Linear Speed to CV Value Calculator

	Step 14	Step 28
DsMPH	15	
MsMPH	23	
Decoder OEM CV Value TSU2 2200	122	255
Calculated CV	80	166

Use when DsMPH < MsMPH

DsMPH = Desired Scale Miles per Hour @ Step 14
MsMPH = Measured Scale Miles per Hour @ Step 14
DecoderPro OEM Step Values for Step 14 and Step28
Step 14 Calculated CV= XX Step 28 Calculated CV= XX

Time Calculator

Length of Travel	96	Length of travel in inches
Scale Factor	64	Scale ratio
SMPH	15	Desired SMPH
Seconds	23	

To determine **TIME** in Seconds: Enter Length of Travel in inches; Scale Factor; and Scale Miles per Hour. Scale Factor is 87 (HO); 64 (S); 48(O), etc. *Variables are in italics*.

Formula: T=(3600xLxF)/(5280x12xSMPH)

L = Length of travel in inches
F = Scale Factor
T = Time in seconds

- **SCALE MPH:** Calculates scale MPH where scale MPH = ((L x F/12)/5280) x (3600/T).
- **LINEAR SPEED TO CV:** Calculates a desired CV value based on the ratio of desired scale speed vs. measured scale speed. Its usefulness is limited to a straight-line speed table, but it makes additional calculations easier. Useful when Desired Scale Miles Per Hour (DsMPH) is less than the *Measured* Scale Miles Per Hour (MsMPH). More on this later.
- **TIME:** Calculates time to run through the speed trap where Time = (3600xLxF)/(5280x12xSMPH). While I don't use this calculator directly in this article, it does come in handy for determining the time required to run the trap at a given speed.

Note: Explanation of formula terms are on each calculator's image.

READER BONUS DOWNLOADS: In the bonus downloads, I provide a copy of the spreadsheet I have built with these calculators: bonus downloads link

Other calculators, including those that measure Kilometers per Hour, are available on the internet.

DecoderPro: I have depended on DecoderPro for years, to the point that if I ever knew one CV from another, it has long since been forgotten. In this article I primarily use DecoderPro.

Decoder testing station: While certainly not required, I prefer to do basic programming of the decoder prior to installation using a decoder testing station. Several are commercially available, or you can do as I did and build your own.

Pre-installation programming

I like to do as much programming as possible prior to the installation of the decoder using DecoderPro. This most often includes these DecoderPro tabs: Roster Entry, Basic, Function Map, and Lights. I do some remapping of the functions in the Function Map so the ones my operators will use most get included in F0 thru F11. An example is seen in [2].

What I do not include in the pre-installation programming are the tabs: Motor, Basic Speed Control, Speed Table as well as the sound-related tabs.

Prior to removing the decoder from the testing station, I will <**Write All Sheets**> and <**Save to Roster**> in DecoderPro. I do the remainder of programming after I

1. Useful tools: cell phone with stopwatch application, Tsunami2 user's guide, and a decoder testing station.

have installed the decoder into the locomotive, including the creation of the roster-matched speed curve.

New terms

Before creating the roster-matched speed curve, here are three new terms I'm using:

1. **Index Speed Step:** This is a specific speed step around which I design the roster-matched speed curve. It can be any speed step you desire. See the sidebar for the explanation of why I chose speed step 14 as my Index Speed Step.

2. **DsMPH:** This is the Desired scale Miles Per Hour at the selected Index Speed Step.

3. **MsMPH:** This is the Measured scale Miles Per Hour recorded as the locomotive traverses the speed trap.

Locomotive Functions			
Bell	1	Whistle	2
Short Whistle	3	Cylinder Cocks	4
Cutoff +	5	Cutoff -	6
Brake	7	Brake Select	8
Blowdown	9	Head/Cablight	0
Shift Once			
Class Lights	1	Mute	0

2. Example of my throttle function map. I print this and attach it to the back of operators' throttles.

Creating the roster-matched speed curve

This is the procedure I use to create my roster-matched speed curve. I use a Log Curve Speed Table with a predetermined scale speed for my chosen Index Speed Step.

My goal is that at speed step 14 (my Index Speed Step), the locomotive runs at ~15 sMPH (DsMPH) in Sn3. With practice, the actual creation and programming of the speed curve takes less time than my description of the process.

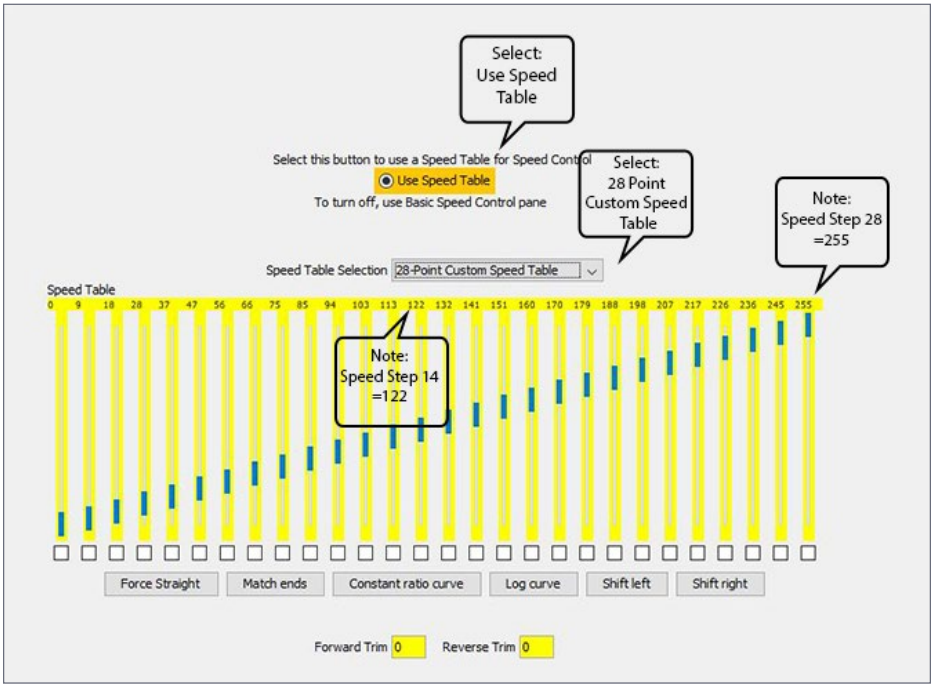
Step 1 – Setting start voltage: With the locomotive's decoder installed and the locomotive free of any mechanical or electrical issues, it is time to create the speed curve. Open DecoderPro to the working roster entry for your locomotive, then open the [Basic] tab and make sure the speed steps reads "28/128 speed step format."

Open the [Basic Speed Control] tab. Turn the throttle to speed step 1, if the locomotive does not start, increase the value of Vstart one unit at a time until the locomotive moves, <**Write Full Sheet**> then <**Save to Roster**> in DecoderPro.

Step 2 – Setting the speed table: Open the [Speed Table] tab, click the [Use Speed Table] button and select "28-Point Custom Speed Table" from the Speed Table Selection. At the top of the Speed Table graph note the value of speed step 14 and speed step 28. In this TSU2 example, speed step 14 = 122 and speed step 28 = 255.

Note: Speed step 14 is my Index Speed Step. However, speed step 28 will be used to adjust the shape of the speed curve [3].

Step 3—Throttle sequence: Move your locomotive to the run-up area at the start of your speed trap. Here are the steps I use:



3. Default speed table set up.

- Set the locomotive brake by pressing F11 (TSU2 default).
- Increase your throttle to speed step 14.
- Set throttle direction to forward.
- Release the brake by pressing F11 (TSU2 default). The locomotive should start and reach a stable speed before it passes through the speed trap.
- Apply the brake shortly after the locomotive leaves the speed trap.
- Reverse the throttle direction and run back through the trap at the same speed.

Practice this back-and-forth sequence several times before starting your actual time trials.

Because momentum rates, braking rates, or DDE load compensation have not changed from the default settings, the locomotive accelerates and decelerates rather quickly. This is fine for testing purposes but will be adjusted after the final speed curve is established.

Note how much track is required at each end of your trap to ensure the locomotive can reach a stable speed before entering the trap's measured distance. And you need enough track to stop the locomotive before it runs off the layout or into a wall!

Step 4 – Time trials: Perform the above sequence three different times, starting the stopwatch as the locomotive's front coupler reaches speed trap's starting marker, and stopping it as it reaches the ending marker.

Obviously, use the tender or rear coupler when running backward.

The times will likely be close but not necessarily identical. Add the three times together and then divide by three to compute the average SMPH.

A significant difference in the forward and backward average may be a clue to a mechanical problem to investigate and correct. Smaller differences can be compensated for by adjusting the forward and reverse trim decoder CVs.

- Hint: The Keuwlsoft Stopwatch app mentioned above has eight separate stopwatches. You can use a separate stopwatch for each run through the trap, eliminating the need to write down each result. Just average the three stopwatchs. This feature makes the Keuwisoft stopwatch very efficient.

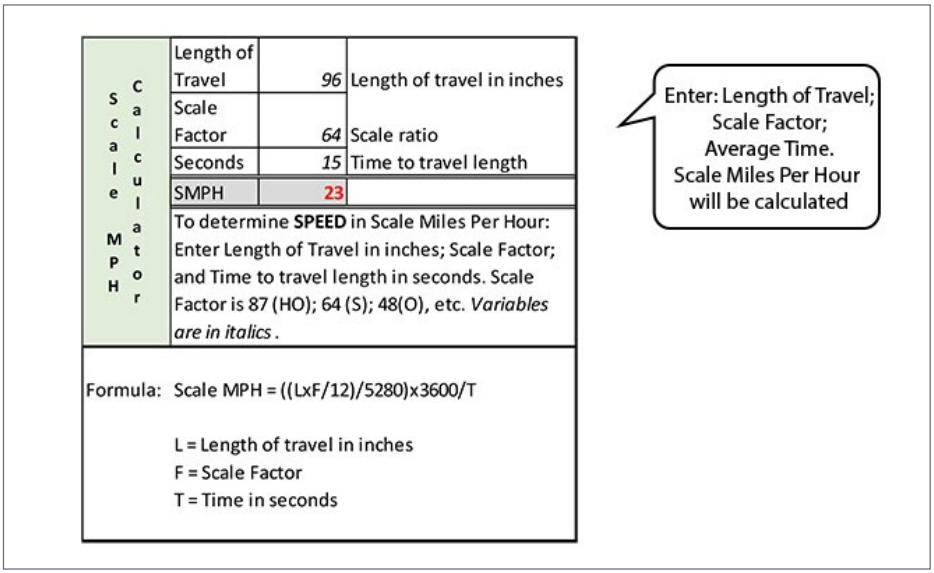
Step 5 – Measured scale speed calculation: When I did my time-trials, the results were relatively consistent and

averaged 15 seconds. Here then, is what I entered into the Scale MPH Calculator spreadsheet:

- Length of Travel: *96* inches
- Scale Ratio: 1:*64*
- Seconds: *15* seconds
- Results: *23* SMPH is the measured scale speed at speed step 14 from my tests [4].

My result is 23 sMPH at speed step 14. But the desired speed at my Index Speed Step of 14 is 15 SMPH. Time to introduce another calculator!

Step 6 – Scale-speed-to-CV calculator: Up to this point we have been using the DecoderPro default (that is, OEM) linear Speed Table. Here is how to set up this calculator to find the desired CV value for speed step 14.



4. Scale Mile Per Hour calculator.

- Desired Scale Mile per Hour (DsMPH) = 15 as our desired sMPH for speed step 14.
- Measured Scale Mile per Hour (MsMPH) = 23 as calculated from our tests at speed step 14.
- OEM CV values for Step14 and Step 28 [as seen in 3], which are **122** and **255.**
- Results: The calculated CV value for speed step 14 = 80, see [5].
- **Step 7 – Adjusted linear speed curve:** We can now adjust the linear speed curve to reflect a desired Scale Mile per Hour of 15 sMPH at speed step 14. However, to do this we need to enter the calculated Step 28 value of 166 into Step 28 of the linear speed table and click the [Match Ends] button.

Linear Speed to CV Value Calculator		
	Step 14	Step 28
DsMPH	*15*	
MsMPH	*23*	
Decoder OEM CV Value TSU2 2200	**122**	**255**
Calculated CV	80	166

Use when DsMPH < MsMPH

DsMPH = Desired Scale Miles per Hour @ Step 14

MsMPH = Measured Scale Miles per Hour @ Step 14

DecoderPro OEM Step Values for Step 14 and Step28

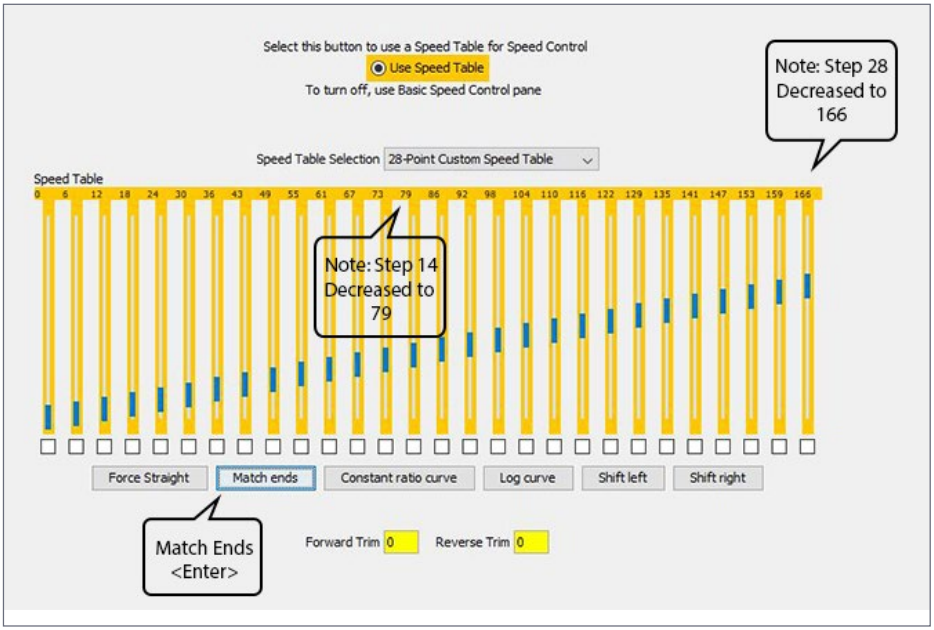
Step 14 Calculated CV= XX Step 28 Calculated CV= XX

5. Linear-speed-to-CV calculator.

A new linear speed curve results, where speed step 14 approximates the desired 15 sMPH. Once we set step 128 to 166, step 14's CV value of 79 comes in close enough to the calculated CV value of 80.

DecoderPro works off the values of speed step 0 and speed step 28 to create the linear speed curve, and speed step 14 maintains our desired value of ~80 as you can see in [6].

You're done if you prefer a linear speed curve: At speed step 14 the SMPH is ~15 and by extrapolation, at speed step 28 it is ~30 SMPH. But I'm not done!



6. Adjusted linear speed curve.


J. Fugate

Log speed curves: Another perspective

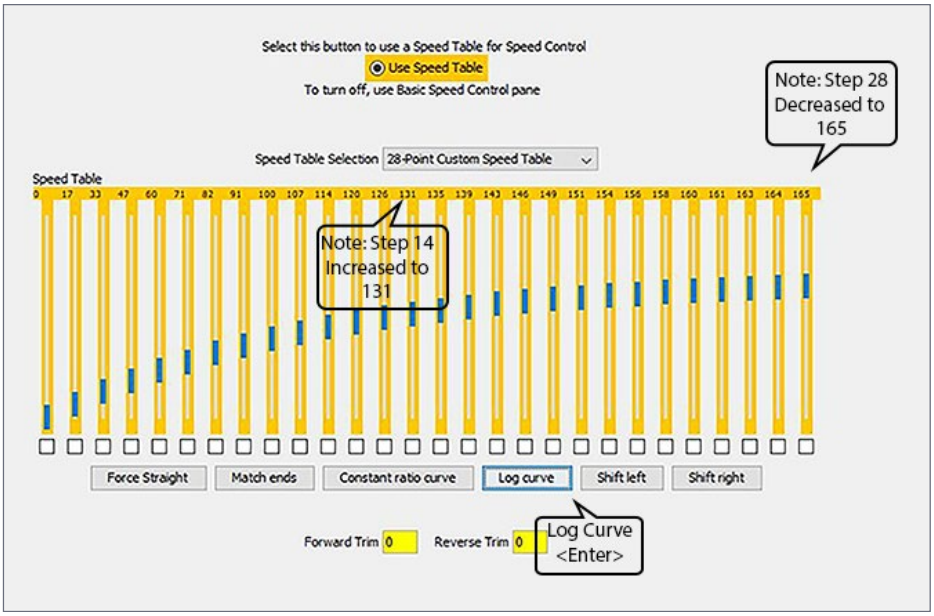
I started using DCC log speed curves at first, but found them to be problematic with my multi-unit diesel consists pulling longer trains of NMRA-weight+ cars (~25-30 cars). With my longer heavy trains, the locos would lug down on grades, and the log curve didn't give my operators enough top-end to the throttle, resulting in virtually no uphill speed control, and stalls. I've since gone to linear curves – they're simpler and they give my operators the top-end speed control they need.

I can see using log speed curves on a layout with moderate grades, short trains, and a single loco on the head end. But they didn't work for me on a large modern diesel layout.

- **Step 8 – Create initial log curve:** My preference is to use a DecoderPro log curve for locomotive operation. Simply click the [Log curve] button and a log curve will be created. Because DecoderPro works off the values of speed step 0 and speed step 28, the resulting values for speed step 14 and speed step 28 are altered.

In my example [7], speed step 14 increases to 131 while speed step 28 decreases slightly to 165. So we need to correct this initial log curve to a speed step 14 value of ~80.

Step 9 – Adjusting the log curve: Using some trial-and-error, it's possible to reset speed step 14 to our desired value of ~80 and, thus, ~15 SMPH.



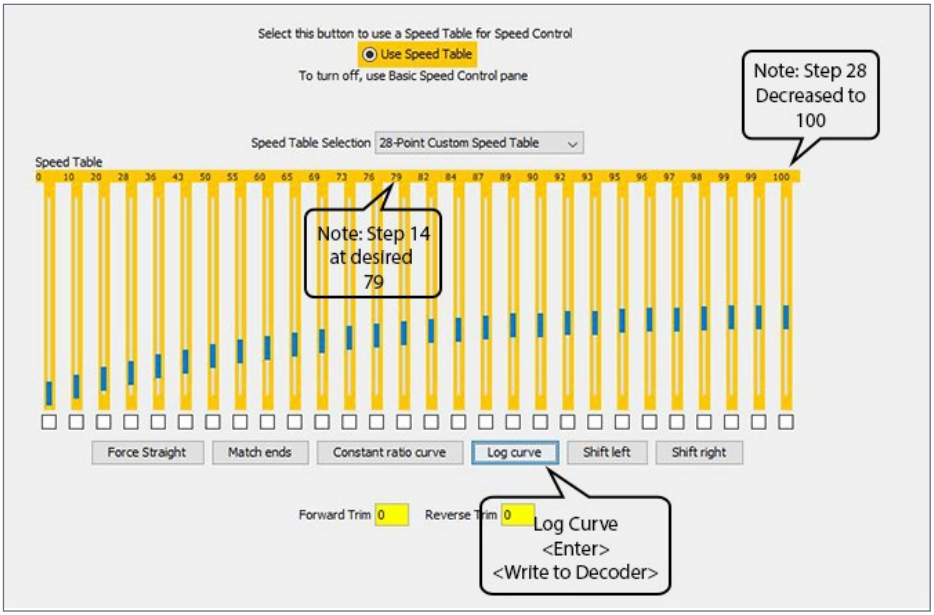
7. Initial Log Curve.

Click the speed step 28 slider and pull it down a small amount, then click the [Log curve] button, and DecoderPro creates a new log curve. View the value of speed step 14. If it is something other than ~80, move the step 28 slider either up or down, and again click the [Log curve] button.

For fine adjustments, you can also enter a value (perhaps +2 or -2) into speed step 28 at the top of its column. Again, click [Log curve] button and check the value of speed step 14.

This may appear to be a tedious process, but it goes rather quickly with some experience. Often only two or three adjustments are necessary to achieve the desired log curve [8].

Once you're happy with the speed curve, select <**Write Sheet**> then <**Save to Roster**>. Now it's time to test and confirm the settings.

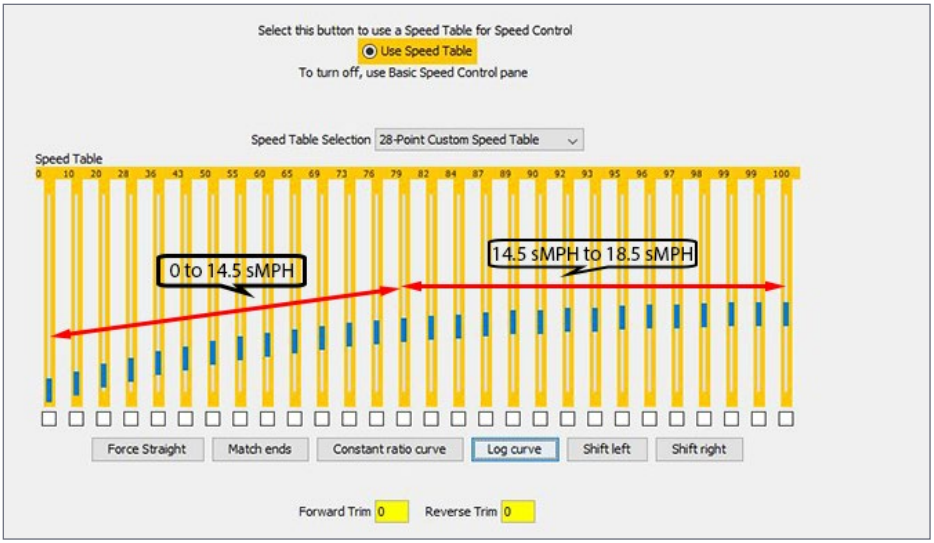


8. Log Curve 15 SMPH at speed step 14.

- **Step 10 – Verifying the speed curve:** With the speed curve written into the TSU2, return the locomotive to the speed trap and run it through its paces two or three times at speed step 14 and speed step 28. Calculate the SMPH for the two speed steps. If the resulting speeds meet your criteria, you're done [9].

At this point, I return to the *TSU2 Steam User's Guide* and complete the basic programming, the throttle settings, and the braking settings. Specifically, I set momentum rates, adjust DDE load compensation, set braking rates, and set motor trim.

When setting braking rates, I also like my friend Dale's approach. I use speed step 14 to determine both the Independent Brake and Train Brake distances to stop: 18"and 36" respectively. There is no



9. Final results.

particular reason for these distances other than they work well on my layout.

In this discussion, I haven't used the Time Calculator. It can be useful if you want to determine the time a locomotive needs to run for a given distance at a certain SMPH. In fact, try using it for an HO scale locomotive, traveling at 60 SMPH, for a distance of 24 inches. The answer may surprise you!

Conclusion

With today's modern sound decoders, we have much more programming to do until the final roster entry is done and written to the decoder. This is the fun part – adding the "personality" to the locomotive. But we are off to a good start! DecoderPro makes the process achievable, easier and, frankly, more fun.

I encourage you to experiment with the program. ☑

ACKNOWLEDGMENTS

Thanks to Dale Kreutzer for his encouragement and support. If you are planning to attend the 2019 Sn3 Symposium (www.sn3seattle.com), be sure to visit his layout.

Why speed step 14?

I choose to use Speed Step 14 as the index speed step for several reasons:

- When initially timing my locomotives at top speed as they come from the factory, I found they usually ran much too fast. Timing them at speed step 14 was slower and worked better.
- I do my programming with my NCE Procab, which displays your speed step setting. My operator's cabs, NCE Cab-06pr, do not display the speed steps,however. The potentiometer has an arc of ~270 degrees. I have adjusted the potentiometer knob such that it arcs -135 degrees to +135 degrees with 0 degrees being vertical and equal to speed step 14 out of 28-steps total. Now the head end and helper engineers can more easily use clock references . . . "8 o'clock, release brakes," "increase speed to 10 o'clock," rather than calling out speed steps.
- Ergonomics. I find that in most cases I can operate the throttle knob with my thumb, as well as reach most function keys. Rotating the throttle knob from -135 degrees to 0 degrees (vertical) is comfortable and easy to see. Speed step 14, the middle of the throttle knob, has a speed of 15 sMPH – a very comfortable operating speed.

Why 15 SMPH?

A speed of 15 scale MPH seems rather slow.

- It is! But my Sn3 layout is comparatively small, so operating at

a reduced speed makes the experience more enjoyable. Think of it as "selective speed compression." One big additional benefit: this make the layout feel larger by increasing the time between stops.

- My geared locomotives are programmed at 10 SMPH at Step 14. Now that's slow! But one can quaff a beer getting from one end of the layout to the other and still arrive on time! Also, quite enjoyable!

Why a log curve?

- Because I am primarily using the first half of the speed table (Step 0 to Step 14), the log curve allows the most speed change to occur within that range, 0 SMPH to 15 SMPH.
- But from step 14 to step 28, I only advance from ~15 SMPH to ~19 SMPH. Why is this an advantage? We all have operators who cannot resist operating at maximum throttle, a.k.a. "putting the pedal to the metal!" The log curve helps moderate this behavior.

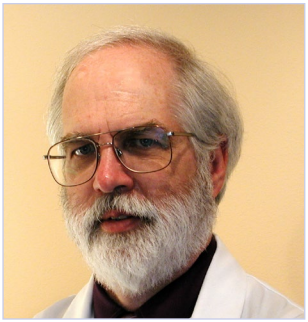
Is this prototypical?

- Prototype steam locomotive engineers tell me no two locomotives operate alike, even in the same class. On the other hand, this is quite practical for my narrow gauge railroad that rarely MUs locomotives but that does run more than one loco in the same train as helpers.

Is this true locomotive speed-matching?

- For my purposes, this approach works well. If one consists five diesel locomotives together, I suspect additional adjustments to some locos may be necessary. But my described technique may be a good place to start. I will defer to others with diesel speed-matching experience to comment on the MRH forum.

Bill Adkins



Bill's interest in trains began on his sixth Christmas when he received his first Lionel steam train set. Smoke pellets and a whistle in the tender – life was good!

Augmenting this, on weekends Bill's father would have the "need" to run errands which somehow often included a drive through the Union Pacific and Denver and Rio Grande yards. Sometimes on special occasions, this got extended to chasing trains from Ogden to Evanston. Bill says, "I have fond memories of Big Boys, Challengers and gas turbines."

In the early 1960s Bill discovered Colorado narrow gauge and became hooked. Bill has been a narrow gauge model railroader and railroad/western mining historian ever since.

Bill is currently retired, living in Central Oregon and working on various Sn3 projects when not distracted with travel, and historical railroad research – which Bill says happens often!

Bill further says, "Without a doubt, the best part of being a model railroader is the association with others of the same passion. Characters all!" Bill says he truly enjoys the creative, sharing, and the fun lot of ruffians he hangs around with!

And someday, Bill adds, "I just may finish a layout." ■

Improving Walthers 53' well cars

Model Railroad Hobbyist | January 2019 | #107

Guido Cherici enhances well cars for better operation on layouts with tight curves ...

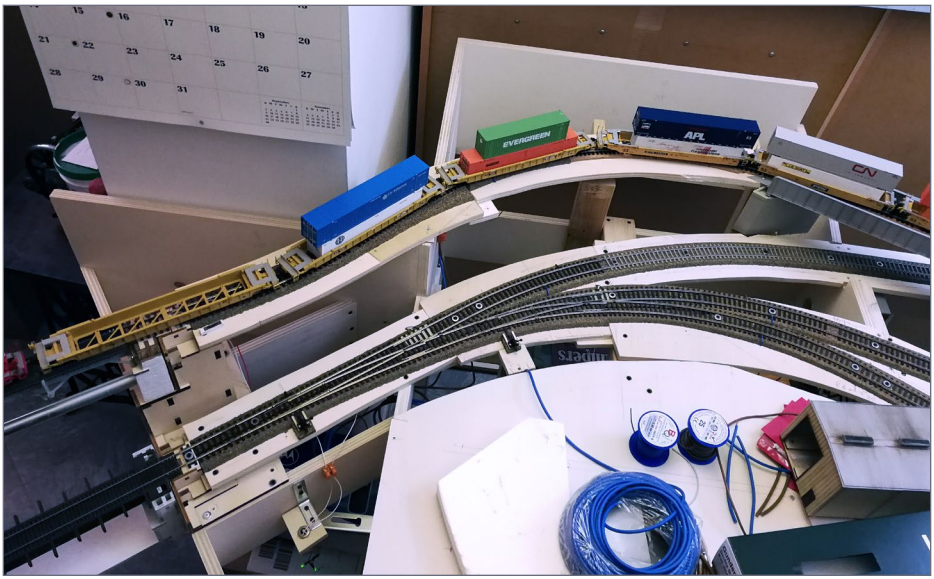
It all started when I decided to buy myself a birthday present. Double-stack cars and containers were just what my layout and I were missing. Along with a 3-set of Kato Gunderson Maxi-IV cars, I got three Walthers 53' NSC well cars.

These cars have a metal cast frame and they look pretty good. I prefer the external bracing to the smooth sides of the Gundersons [1].

1. The Walthers 53′ NSC well cars, loaded with containers.

My only problem is I live in Europe and even though I have a loving and understanding wife, my layout real estate is limited. This means I sure can have a layout, but tight curves are something I have to live with.

The first time I ran my new cars, my enthusiasm was met by a scary grinding noise as the train was running on the trickiest part of the layout, an S-curve approaching a bridge [2]. This curve has a constant radius of about 21-3/8" (542.8 mm), followed by another curve of the same radius, all on a 4% grade.



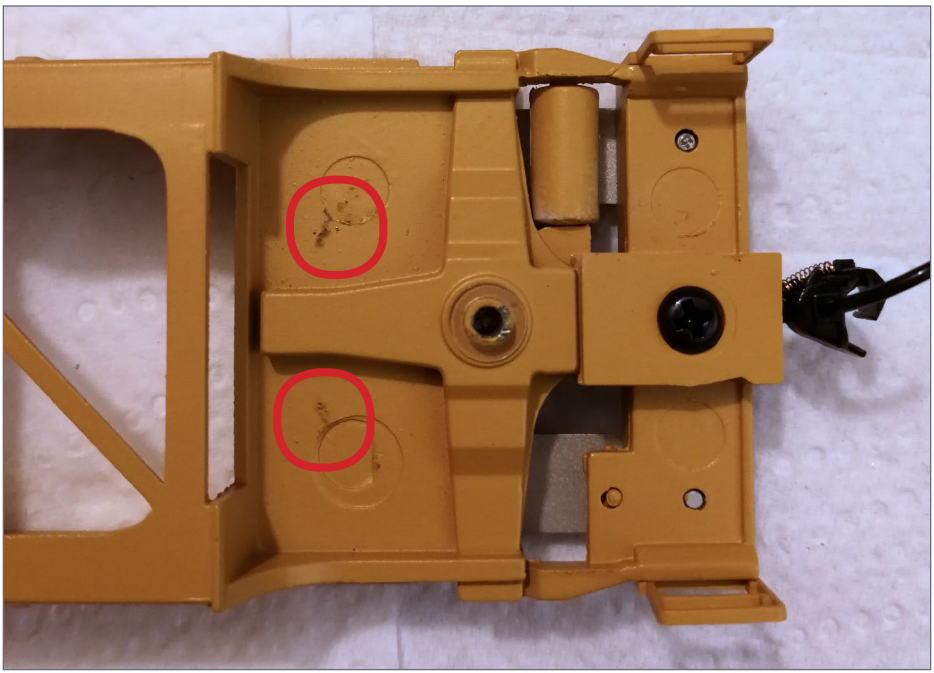
2. The well cars negotiating the tight S-curve.

I know, I could have opted for a simple switching layout, but I like challenges!

After some time spent in light despair, I got myself together and analyzed the situation. The Kato three-unit runs perfectly, so what's up with those Walthers cars?

I ran them empty, then loaded, up and down the grade, then I ran one of them by hand while pressing down on it.

There was that grinding noise, loud and clear. The wheels were definitely rubbing against the frame above them, and after removing the trucks I could clearly see the marks they left on the frame [3].



3. Here you can see the marks left by the wheels on the metal frame (marked by red circles).

4. The original washer on the left, the same with its enlarged hole on the right.

I suspect they were also touching the frame in the area opposite the coupler, but I had no definitive proof of that.

I took a small washer, approx. 9/32" (7 mm) diameter, 1/32" (0.8 mm) thick and I enlarged the hole to 9/64" (3.5 mm) so it could fit around the mounting hole [4]. This increased the height of the frame over the wheels.

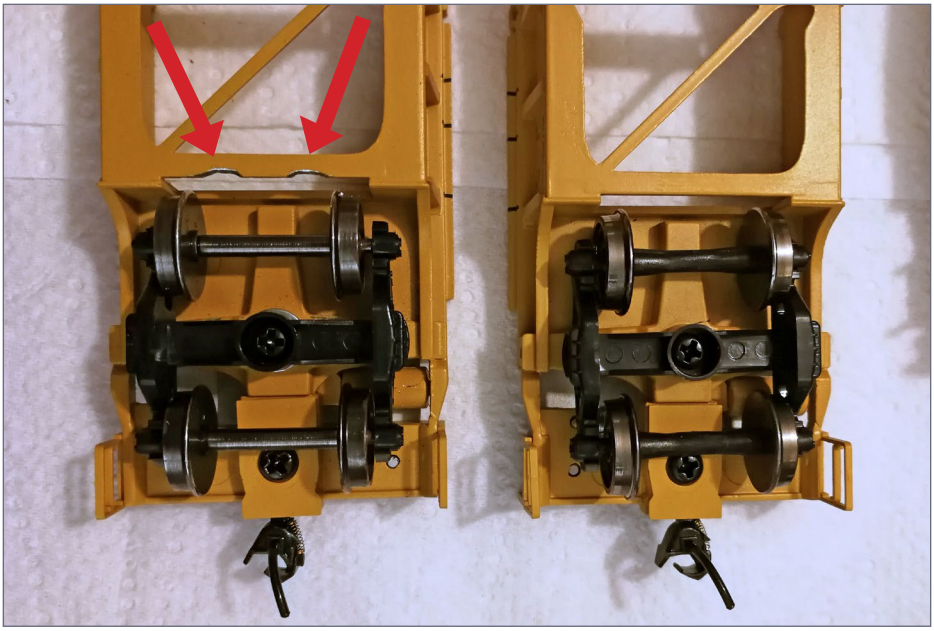
I removed the tiny clear plastic washer that Walthers places rather randomly under the trucks. One car had it under both trucks, the other two cars had it under just one truck.

After reinstalling the trucks I noticed that yes, the wheels were touching the sunken well frame opposite the coupler.

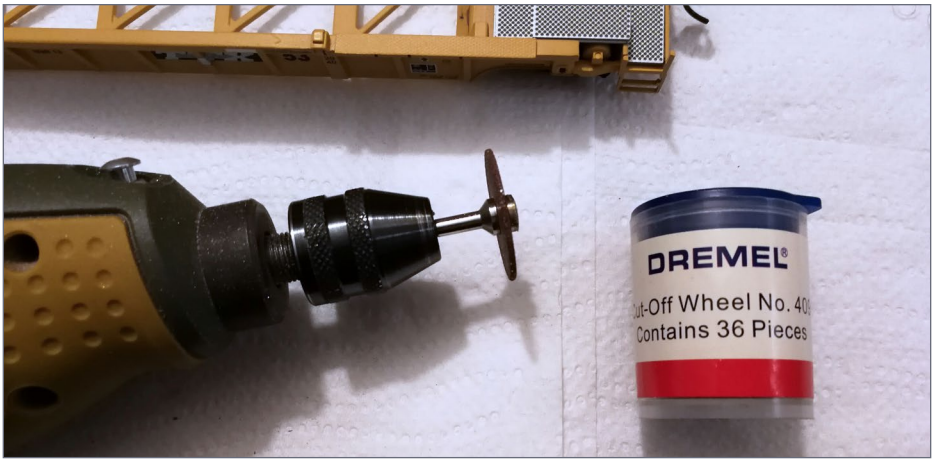
While swiveling the truck as far as it could go either direction, I marked these areas with a pencil. Then I created a notch using a cutting wheel and my small power drill [5, 6].

After double-checking that the newly created clearance for the wheels was sufficient, I reassembled the trucks.

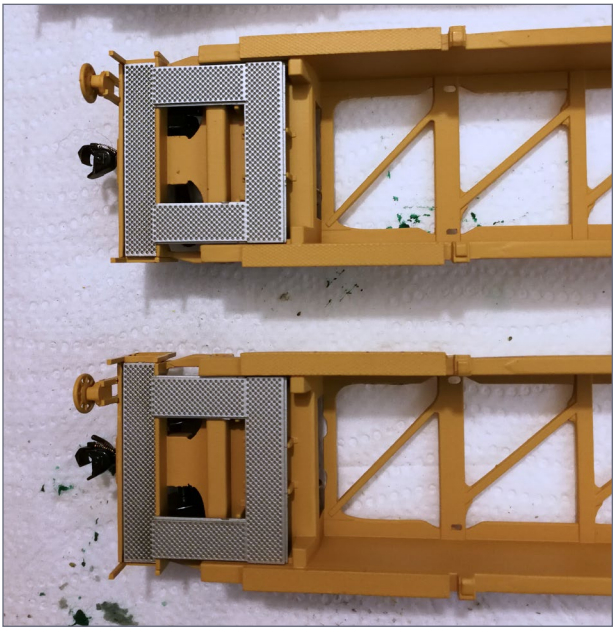
As a final step, I replaced the original wheels with Intermountain 36" metal wheels.



5. Before and after. You can see the notches I milled into the frame.



6. The cutting wheel I used.



7. On top you can see a well car in its original state, below you see it after the modifications. You can barely see the notches, and they won't be visible at all when the car is loaded.

Looking at the before and after photo [7] you can hardly notice the notches in the frame, but I think the improved performance is well worth the effort.

Before this operation, a car left at the top of the grade would just sit there.

After this simple tuneup, they roll down smooth and free. I caught one just in time before it rolled off the open bridge!

The notch I cut on one of the cars was not wide enough, and on the tightest curve the wheels slightly touched the frame. This time though, the noise was very much like the squeaking of the wheel flanges you sometimes hear on a real train around a tight curve. A very realistic sound, and it doesn't even need a sound decoder!

One last note: the original Walthers plastic washer, where present, is 1/64" (0.35 mm) thick; my new washer is 1/32" (0.8 mm) thick.

The cars sit 1/64" (0.45 mm) higher than before and so do the couplers. If you are using Kadee No. 5 or similar couplers, this should not be a problem since the coupler head is tall enough to absorb this slight difference.

Semi-scale or scale couplers might need some additional work to restore the proper coupler height. ☑

Guido Cherici

Guido Cherici is an Italian product designer and railroad modeler living near Turin, in the Italian northwest.

Guido's father is a railfan and railroad modeler himself operating a German-themed Marklin layout and president of a local railfan club, and Guido is on the board of Corretto Tracciato (www.corretto-tracciato.it), a Freemo RR club.

Guido was hooked on American trains in 1992 when he picked up an old copy of Railroad Model Craftsman highlighting the Santa Fe Superfleet, with Dash 9s and GP60Ms in the warbonnet paint scheme, an event which would have a deep impact on his life.

His newfound passion for the Santa Fe led to Guido being the webmaster for the Cajon Pass Group for a few years.

Through the hobby, Guido made friends in the US who helped him land an internship and then a full-time job with a Seattle-based design studio.

What started out as a hobby passion ultimately helped launch Guido into his professional career as a product designer!

Guido lives with his wife and 6-year-old boy who's allowed to play on and around the train layout, and to run his locomotive with his own DCC throttle, just as Guido's father let him play as a child. ■

WHAT'S NEAT column

Model Railroad Hobbyist | January 2019 | #107

Ken Patterson tours a Maine Central branch, paints rust on freight cars, and creates an autorack mural; also, a smoky fire scene, and the Rocky Mountains ...

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This month we look at Rich Gibson's Maine

Central Rockland branch layout in HO scale, and I show you how to use oil paint to put rust on your freight cars. Darrel Ellis from the Colorado Model Railroad Museum shares how he built a fire scene on the layout, Don Meeker shows his huge Rocky Mountain Line railroad in HO, and I demonstrate how to paint a beach scene on an autorack with an airbrush. ☑

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▶ PHOTOS AND VIDEO OF SUPERB MODELING

Rocky Mountain Line

1. Don Meeker's Rocky Mountain Line is big, with miles of mainline and long aisles following the track. The layout is built for operation, with 25 to 30 people needed to run the layout. The dispatcher controls all switches and train movement with a full signal system, making things easy for the train crews. The staging yard has two levels with 14 tracks each. The top level is the west end of the railroad and the bottom yard is the east end of the layout's run. It takes trains 40 minutes to travel the length of the main line, from the top yard to the bottom level.

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2. Another operational feature is the car ferry that moves around the layout to different dock loading slips.

3. There are 12 different bridges on the layout, including this tall viaduct at Beaver Gulch. The scenery is paper mesh covered with plaster.

The layout is lit with fluorescents, which do a great job of lighting a horseshoe curve on the east side of the Rockies. With a 96"+ radius curve built on a 2% grade, this scene is a beautiful place to watch trains as they roll around the large lake in the center of the scene. Don uses a Digitrax DCC throttle system to run the layout, with as many as 30 throttles in use at the same time.

4. Denver Union Station is built to look as real as it gets. It is scratchbuilt from drawings and photos and the walls are cast with molds and plaster. This is a very busy area requiring three operators to smoothly run the passenger trains and mail trains through the area. Don says he built the basement to fit the layout with plans drawn before the house was built. It took 14 years to build this layout and Don says the most joy comes from the friends he has met because of this great hobby.

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Forest fire scene

5. (Above) Darrell Ellis from the Colorado Model Railroad Museum shares how he built and animated this forest fire scene on the layout.

6, 7. (Right top and bottom) The LED lights flicker and fade, creating a very convincing glowing effect. The fire trucks' lights flash as the fire crews pull their hoses up the hill. Figuring how to create the smoke effect is described in this month's video. The problem was running the smoke up through two feet of pipe to the scenery. Oil heated smoke units did not create enough heat to draw the oil vapor up the 1½" PVC pipes.

The answer turned out to be fish tank air pumps that provide just the right amount of pressure to draw or push the smoke up the pipes, and through the tall trees.

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Oil paint weathering

8. This month I share how I weather freight cars with oil paint for my photos and running on my layout. It takes only a few minutes to create this believable effect.

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9. (Above) I start with burnt umber oil paint spread out on a marble tile and thinned with Turpenoid. Oil paint is first applied as a wash around and on top of the entire car. This is done with a 1-inch brush dampened with a little thinner. The brush is dipped into the spread-out paint on the tile and applied to the car in even strokes across the side of the car.

10. (Right top) Let it dry for a day before you apply the rust streaks. To form streaks, run the tip of a dental pick through the thinned paint on the tile. Then bounce the tool across the side of the freight car in a random fashion.

11. (Right bottom) Let the pick bounce off the side of the car. Each point of contact applies a small spot of paint/rust to the sides of the car. Then use a 1-inch artist brush and draw it straight down the side of the car through the dimpled paint.

The paint is pulled down, creating the rust leaching effect from rain. When this dries, airbrush dust and grime along the bottom edge of the freight car and the trucks, and the car is ready for revenue service on the layout.

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12. Here are two PFE reefers; there is a wash only on the bottom car, and the spotty rust effect is added to the top car. Both cars have a spray of dust along the bottom edges.

Maine Central Rockland branch

13. Rich Gibson talks about his passion for the hobby and shares his HO Maine Central Rockland Branch layout. He loves modeling the east coast of Maine. His family took summer vacations there when he was young. He models the 55-mile branch between Brunswick and Rockland. The layout is only two years old but he drew the track plan in the 1970s, when he started his planning.

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14. The layout era is 1952, when traffic was heavy on the railroad. The main lines, which are still in service today, offer fantastic scenery, bridges and lots of waterfront scenes. Beautiful scratch-built buildings created from photos and plans from the area enhance the layout. Rich says his passion for trains comes from his father, as he too had a layout in the basement.

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Graffiti mural on an auto rack

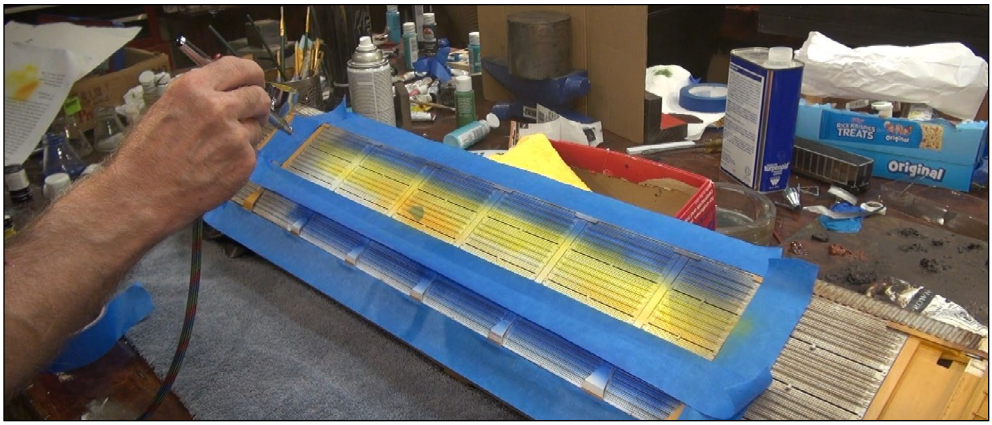
15. This month I show you how I painted the Maui sunset beach graffiti on the side of an autorack in G scale. The process is the same for HO models. The car is a Trains USA 1:29 scale model.

I started by painting a large area on the autorack flat white with regular shake-the-can spray paint. After this dried, I masked the outside borders of the model with 1" wide masking tape, protecting the flat car the rack is built on, and masking the roof. I ran a strip of tape across the center of the rack to form our waterline to the horizon.

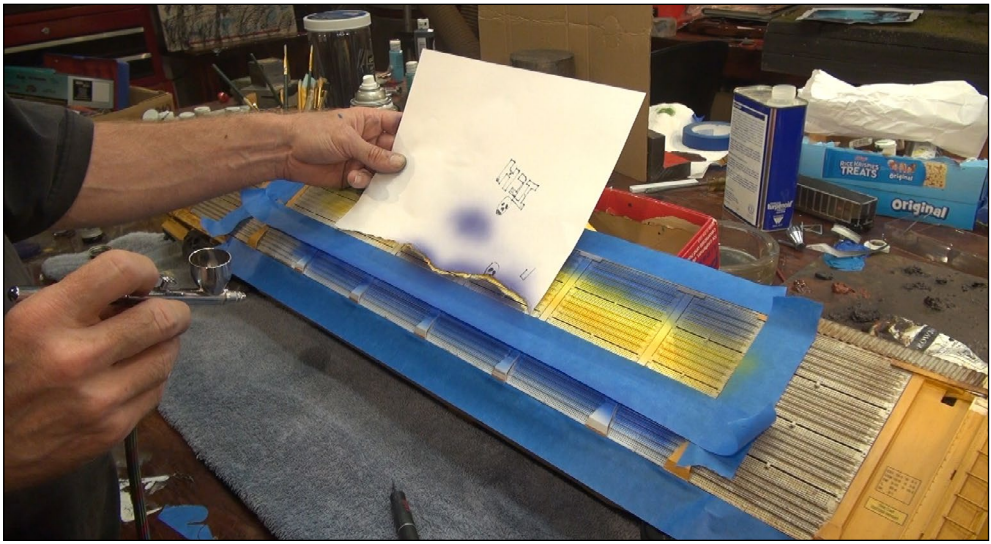
Using an airbrush, I painted the sky blue, using bright blue enamel paint thinned with lacquer thinner. All the paint colors used on this project are bright and brilliant colors made for radio-control cars.

I sprayed the water's color in the same manner, using about 10 pounds of air pressure. The double action airbrush gives me independent control of the air pressure and paint flow with just a simple finger movement. It was very handy to have on this project.

16. Pulling off the tape reveals our waterline, and the sun masked in place. I protected the water with a strip of tape as I proceeded to paint the sky closest to the horizon bright yellow. Notice that the sun is masked with a circle of tape, keeping this area white.



17. I mixed some drops of orange into the yellow in the top-mounted color cup. I sprayed this around the area where the tape was masking the sun. This will "warm up" the sky immediately around the sun.



18. To paint the distant Islands in the scene, I used a piece of paper torn into the shape of low volcanic mountains. Simply hold the paper against the rack sides and spray the paint onto the scene. I used purple for the islands, working my way across the waterline until things look as I remember them in Maui.

Again using blue paint, I airbrushed low-level lines of clouds, just randomly painting the blue lightly over the yellow area.

To paint the silhouette of a person along the beach watching the sunset, I Googled "sunset person silhouette" and found dozens of photos. I scaled one out in Photoshop to look right on the side of the model. I cut the person out of the photo with a sharp hobby knife, forming a mask to place into position on the model.

19. Using about seven pounds per square inch of air pressure, I sprayed black towards the center of this mask, making sure the edges of the paper were flat to give a crisp edge for our silhouette. Removing the paper mask revealed our perfect silhouette. I then proceeded to airbrush the entire bottom portion of the scene with black paint, using a straight piece of paper as a simple mask to protect the finished landscape. I pulled off the circle of masking tape representing the sun, revealing areas where the mountains needed to be touched up with a little more purple paint. With this done, I pulled off all the masking tape around the edges. The autorack had been weathered with a wash of oil paints before the mural was painted. Now you can see the progress up to this point, with the project taking about 20 minutes so far.

20. I added four palm trees to the scene, to frame out the sides of the scene and make the image really pop! I did this with the airbrush set to five pounds of pressure, painting free-hand without masking tape. Just guessing at their placement, I started with the tree's trunks curving up into the sky, then topping out with curving palm leaves drooping downward. The trees make the scene look finished.

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

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21. I rusted the rack a little with burnt umber oil paint speckled onto the sides of the model with a paint brush handle. The oils were then pulled down with a 1" artists brush to form rust streaks. With that, the model is ready for revenue service on your garden railroad, adding a splash of color to an already nice model. ☑

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MRH ... Questions, Answers, Tips

Model Railroad Hobbyist | January 2019 | #107

compiled by Joe Brugger

Rate this article

DC or DCC?

Q. I have DC and I'm thinking about switching to DCC. Is it as simple as buying new DCC-equipped engines and transformer or is there more to it? I have a combination Aurora T-Jet slot car track and HO train layout. The train layout is an outside loop with a couple of switches. I want to get rid of the table and build a layout along the walls of my 15 x 14 foot basement room. Can I use the same track I have now?

—Bike2live2003

A. Neil Erickson: Probably the easiest introduction to DCC is an NCE PowerCab (ncedcc.zendesk.com/hc/en-us/categories/200061479-DCC-Systems). It comes with everything you need to hook up and get started running DCC engines. DCC equipped engines can be purchased "off the shelf" or via an online dealer. Get an engine that has been tested and, if possible, run it yourself. In my opinion, sound is worth the extra $$ and brings running trains up to a whole new level.

There are other options, such as a Bachmann BlueRail-equipped engine (bluerailtrains.com/about-bluerail and e-zapptraincontrol.com), that would be a very economical way to run multiple engines with your existing transformer and a smartphone. No other equipment would be required. It is 1) not DCC, 2) sound comes from the phone, 3) it is not compatible with other systems but another choice for the cost of an engine.

Ed. note: Ring Engineering also offers a stand-alone control system. See www.ringengineering.com/DccHome.htm.

Montanan: I am a lone operator and my layout was built mainly for switching. On the rare occasions that I run more than one locomotive at a time, it is run in MU as a helper on grades. I belong to many model railroad forums and I have lost count of how many posts were about DCC problems.

1. A video quick start for the NCE PowerCab discussing wire connections and running your first locomotive.

I do have a few DCC locomotives that I run at my model railroad club, and have seen members having problems with their locomotives. I have no local support in case I have a problem, as there are no hobby shops at all near me.

I plan on keeping it simple and will stick with DC. It has worked perfectly for me over the past 30-some years. If it ain't broke, don't fix it.

Neil Erickson: MRC, Digitrax, Lenz, RailPro, CVP, ESU, and other systems will keep you doing research until you dive in. Perhaps there is a club nearby that uses one of these DCC systems and can show you how and why it was chosen.

The only issues may be what kind of switches you have.

DCC, and particularly sound-equipped engines, need all-wheel pick-up, clean track, and switches preferably with live frogs. If you have powered frogs then everything may be fine. Engines equipped with "stay-alive" capacitors will help. That may require someone to do the DCC decoder installation for you if you don't feel comfortable with that.

Rich: I have connectors on my railroad's fascia, one for 16V AC to run a DC controller, and one to the track. I bought the NCE Power Cab and can unplug the DC pack and plug in the Power Cab. I hand-laid stub turnouts since I model about 1900-era and have no issues with 0-4-0s. Note: Only one system can be active at one time.

Warflight: I have plastic frogs on my DCC layout. I run sound. No issues here. You don't NEED live frogs. Live frogs are cool but I would hardly say one needs them to run a good layout.

Kriegwulfe: DCC is an easy upgrade to well-performing track. The evils are things like reversing loops and such. I started with an NCE PowerCab and was up-and-running in 10 minutes. I did have a DCC-equipped locomotive to let that happen.

Usually locomotives come in three types: Non-DCC-ready (DC), DCC-ready (with a connector but no decoder), and DCC-equipped. HO has a pretty easy installation process, as most manufacturers build-in an 8-, 9-, or 21-pin universal connector. N scale is a bit less standardized.

A ton of threads have shed blood and destroyed friendships over the "best" DCC system. Just search the forums and or hit up a local club or model railroader close by, and ask questions.

Here is a good site to dig around in, but it can lead to information overload: www.dccwiki.com/Main_Page.

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2. Starting up a Digitrax Zephyr DCC system, for someone thinking of converting from DC operation to DCC.


J. Brugger

What goes here?:

Most people use the off-the shelf DCC systems mentioned above. If you are comfortable with programming and electronics you can add DCC control using Arduinos. There's a detailed discussion at dccwiki.com/DCC_Projects.

Boxcar roof weathering

Q. My next weathering project is a 50-foot ACF exterior-post boxcar from Nacionales de Mexico. I haven´t found a real picture of the roof. Can anybody help with similar photos to weather the roof properly? This the picture that I have. I'm looking for a look of 20 years old.

—Eduardo

3. NdeM 104471 shows faded paint and road grime on its sides. But what about the roof?

A. Scott Chatfield: The prototype car in the photo [3] was only a few years old in 1981, so its galvanized steel roof would have still been silvery-gray with very little rust. Twenty years later and you would see quite a bit of surface rust, and many car owners applied a gray sealant to the seams around each roof panel.

Jeff: I browse through railroad picture archives until I find a good roof shot, then look at the overall "album" it's in to find similar angle shots. The photographer is likely to have taken many more from the same vantage point and put them in the same album. For example:

rrpicturearchives.net/archiveThumbs.aspx?id=121805.

Nick Campbell: I'm sure you can find what you're looking for on this thread at tws-rustbucket.com/thread/6867/roofs-tops. You can find

4. **Joe Fugate:** To study car roof weathering patterns, use Google Maps satellite images like this one of the massive Union Pacific rail yards in North Platte, Neb.

more on The Rustbucket site at tws-rustbucket.com/thread/6867/roofs-tops in most threads by "analogbeatmaker." Most are from a quartering angle and show the roof as well as the side.

Graham L.: As far as the blue car above, "sticky" powders like Pan Pastels or Bragdon Weathering powders can be lightly brushed on to fade and dirty the paint. Rust spots can be applied to the sides, ends, and roof with suitably colored artists oil paints and "streaked" down with a flat brush.

Tips

Close-up vacuum cleaner

5. A two-prong USB adapter powers this palm-sized vacuum cleaner for layout work. *Two photos by Randolph Ghertler*

This small vacuum is very handy for work around the layout. I find it particularly useful when I am working on a small localized project. For big jobs I pull out the shop vac. I've been using the little one lately for post-ballasting cleanup and scenery work. It's also good to use at the workbench.

This was a gift from my very thoughtful girlfriend. She spotted it in an office supply store and recognized the potential for model railroading. It comes with a USB cord, and the wall plug adapter must be acquired separately. I believe it's intended to be powered from a computer and is probably meant for keyboard cleaning. I use a wall plug from a spare cell phone charger, which works quite well.

The vacuum is powerful enough to pick up ballast made from real stone. There is an easy-to-clean, easy-to-remove, collection cavity that makes it very easy to collect and reuse extra material. No need for a sock or other filter over the nozzle. If you want to collect and save material, be sure to clean the cavity before you start!

Since it was a gift, I don't know the price of the one pictured, but I did find many comparable models on Amazon for less than $10.

—Randolph Ghertler

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First LOOK column

Brightech LED magnifier lamp

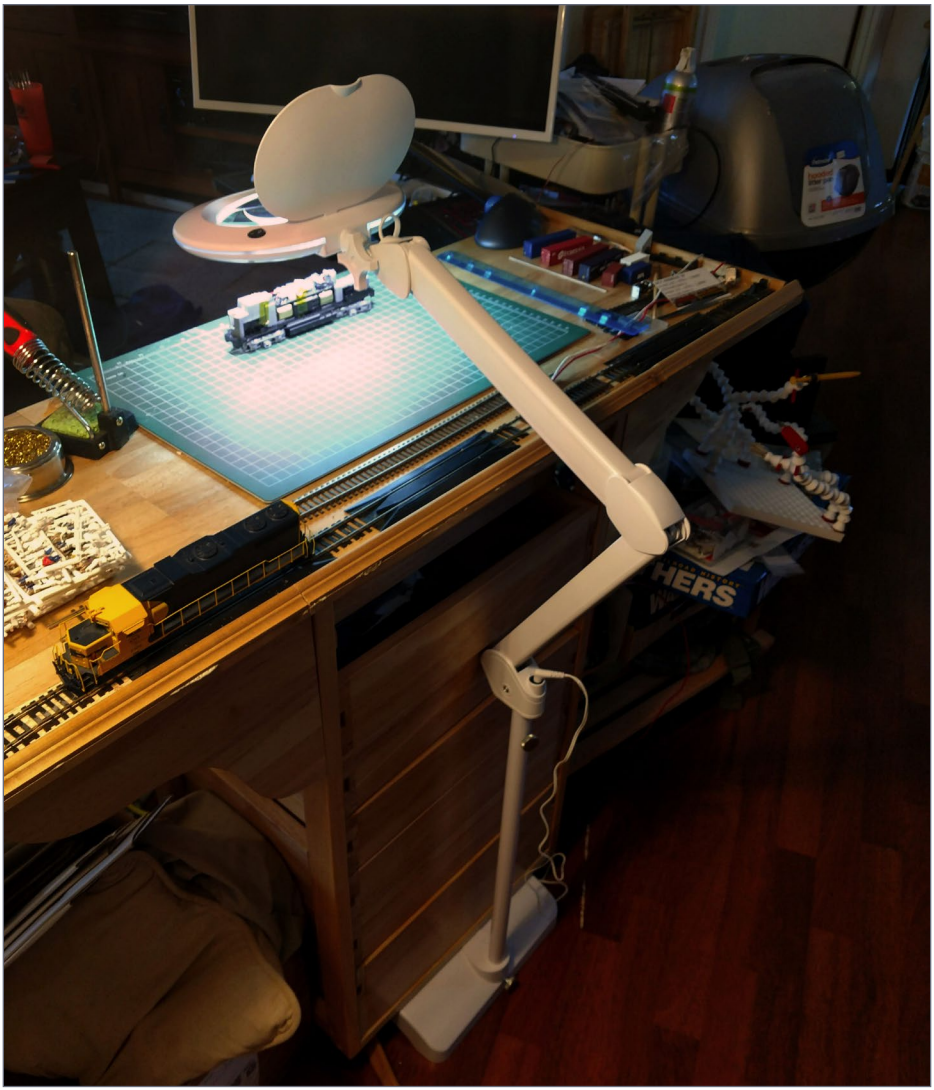
Model Railroad Hobbyist | January 2019 | #107

Jeff Shultz looks at an XL-sized floor- or desk-standing LED magnifier lamp ...

None of us is getting any younger. It's an unpleasant fact that as we age, our vision generally worsens. To assist us in seeing small objects such as our models and their details, two things make a huge difference – magnifying lenses and increased light levels.

The Brightech LightView PRO XL – 2 in 1 is a stand-mounted magnifying lens that includes 900 lumens of adjustable LED lighting. There are sixty 5000-degree Kelvin LEDs with six levels of illumination, adjustable by tapping a pair of arrows on top of the magnifier. The on-off switch also is on top of the unit. The rectangular 6-inch by 4.5-inch 5-diopter lens offers 2.25x magnification.

Brightech provided us with the magnifier lamp, and I requested a model that could be configured as floor-standing or tabletop. It comes in four pieces – the base, which is very heavy and has a flip-out metal stabilizer, the pole that is used when it is built as a floor-standing unit, the magnifier arm, and the power supply.



1. Assembled magnifier lamp set up over workbench.

From the time I opened the box, it took me less than five minutes to set up the magnifier as a floor-standing unit, and part of that was time spent determining where I was going to plug it, and clearing the socket for it.

The unit has three points of motion: an elbow at the base of the magnifier arm, an elbow at the midpoint, and a swivel/elbow between the arm and the magnifier itself. The connection between the pole and the magnifier arm allows about 45 degrees of side-to-side motion.

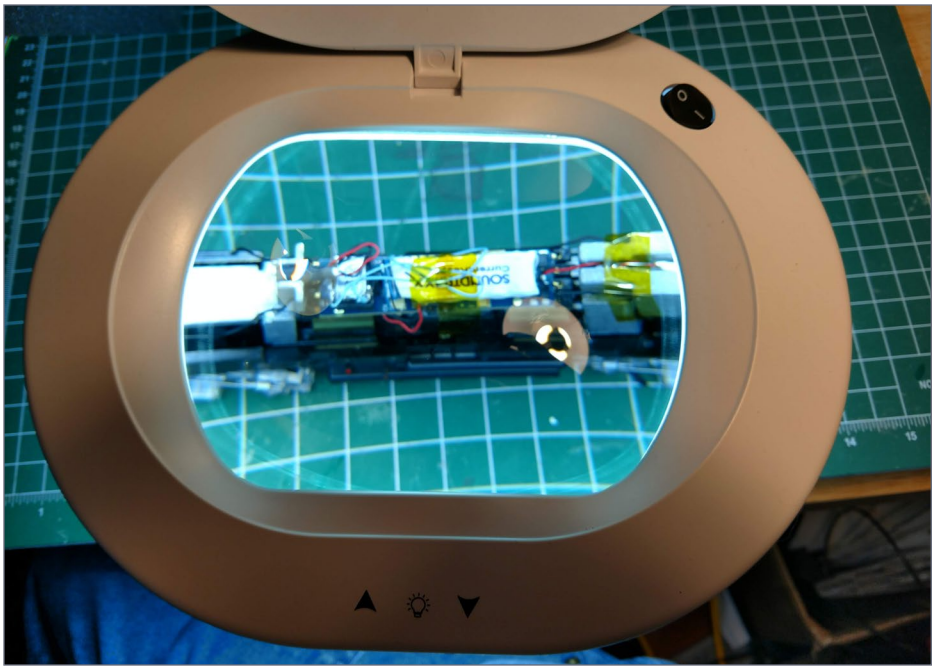
Fore-and-aft motion is limited by the position of the magnifier in relation to the work surface. It is easy to move the magnifier out of the way if it isn't needed.

2. Unassembled magnifier lamp as it comes out of the box.

The hinged dust shield flips up out of the way and stays there when you are using the magnifier.

I tested the magnifying viewer with a Jacksonville Terminal Company 20-foot container, and was able to clearly read all the print 4-5 inches away. Looking at the container end-on through the magnifier resembles looking down on a steep pyramid with a flat top. While noticeable, this distortion was not disturbing.

Under the LEDs, colors were unchanged from my normal work lighting, which is typically cold-white LED. Despite being only four or five inches from my work surface, there was little heat between the model and the magnifier lens.

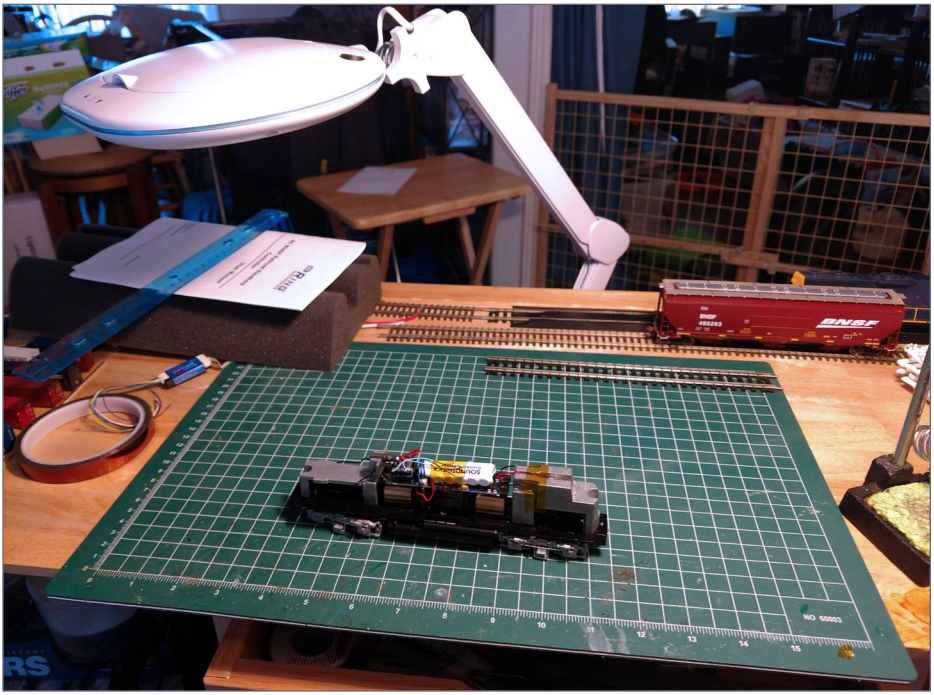


3. View through the magnifier with the lamp on.

For those modelers for whom wearing a "Magna-visor" type of magnifying device is uncomfortable, or who would benefit from additional light, the LightView PRO-XL 2 in 1 can stand either on the floor or on a desktop. It is also available in a clamp-on model, using a C-clamp mount.

Brightech produces several different magnifier lamps which can be found at: brightechshop.com/collections/magnifier-lamps/all-magnifier-lamps. ☑

4. Underside of the magnifier lamp at Jeff's work area.



5. Magnifier lamp moved out of the way, yet still within arm's reach.

GE B36-7

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JANUARY NEWS column

Model Railroad Hobbyist | January 2019 | #107

Richard Bale and **Jeff Shultz** report the latest hobby industry news

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Atlas

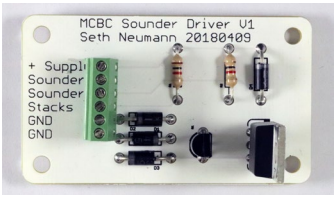
Atlas Model Railroad Company has a requirement for a full-time staff member to join its product development team in Hillside, NJ. The job description includes assisting the product development team with researching and planning production runs, researching, specifying, and reviewing new models for possible production; working with graphic artists to develop artwork for monthly releases, reviewing drawings, test shots, pre-production and production samples, as well as samples from incoming shipments, for quality control and adherence to requisite standards. Qualifications include knowledge of prototype and model railroads and working experience with Microsoft Excel, digital control systems, and/or CAD software. Some domestic and overseas travel may be required. Benefits include 401k, vacation/personal time and healthcare insurance. Salary will be commensurate with experience. Interested parties should submit a resume to jobs@atlasrr.com ...

THE LATEST MODEL RAILROAD PRODUCTS, NEWS & EVENTS

NEW CLUB CARS

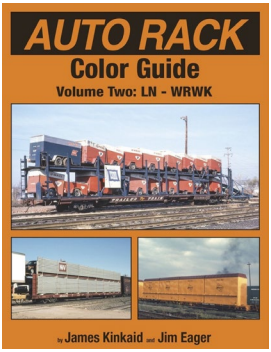
NMRA's SouthCentral Wisconsin Division is selling a special HO scale kit for an Illinois Central boxcar constructed by the IC Centralia Car Shops in 1961. The 50-ton prototype had a 50-foot 6-inch interior length with a 10-foot 7-inch height. The kit is based on an Accurail model. Two road numbers are available. Kits are $30 each or two for $58, which includes Priority Mail shipping. Checks payable to SCWD Car can be mailed to Ken Hojnacki, 4213 Brown Lane, Madison, WI 53704-1181.

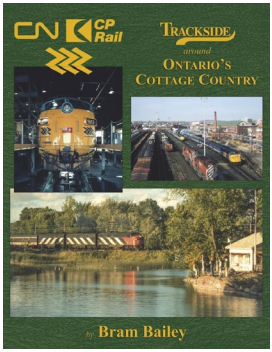
NEW PRODUCTS FOR ALL SCALES



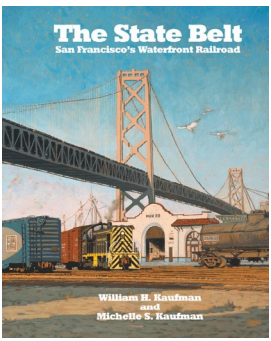
Model Railroad Control Systems (MRCS) is selling Sounder Driver, a compact circuit that boosts a logic low input and drives up to 10A @ 50V (momentary) load such as a telegraph sounder. The device is designed to be used with MRCS's Morse Code Buzzer Controller and other cpNode series interface boards to drive high current inductive loads. A protection diode is included on the board which measures 1.25 x 2.25-inches. For additional information visit www.modelrailroadcontrolsystems.com.

Morning Sun Books continues its in-depth look at automobile carriers with the release of *Auto Rack Color Guide, Volume Two,*





by James Kinkaid and Jim Eager. Included are rare color photos of some seldom-seen racks and cars. Early January will see the release of Bram Bailey's *Trackside Around Ontario's Cottage Country* in which the reader takes a railfan trip through the tourist area north and east of Toronto, Ontario, Canada. You will see first and early-second generation diesel units on the Canadian National, Ontario Northland, Via Rail, Algoma Central, Canadian Pacific, and the electrics of International Nickel, spanning the years 1964 until 2017. Also new from Morning Sun is *Norfolk & Western Power 1955-1982 in Color*, edited by Stephen M. Timko. This first volume covers switchers, slugs, E and F units and some electrics. For additional information contact a dealer or visit morningsunbooks.com.



Signature Press has issued a reprint of *The State Belt, San Francisco's Waterfront Railroad,* by William and Michelle Kaufman. In 180 pages, this carefully-researched book tells the interesting story of the railroad that served San Francisco's waterfront for more than a century. The state-owned railroad served all the waterfront piers, from Fisherman's Wharf at the north end to China Basin in the south. Track beyond Fisherman's Wharf, through a tunnel, served Army facilities at Fort Mason and the Presidio.

Direct interchange with the Southern Pacific was near China Basin. A car float operation provided interchange with the Santa Fe, Northwestern Pacific and Western Pacific. For additional information contact a dealer or visit signaturepress.com.

Train Control Systems has introduced the 28mm 4-watt High Bass WOWSpeaker. The round speaker is 13.5mm (0.53-inch) thick, and 28mm (1.1-inch) in diameter. Built with an aluminum cone, the speaker includes an adhesive mounting gasket that allows the cone to move after installation. A 4 ohm speaker, it has a resonant frequency of 250 (+/- 20%) hz/1V and an effective frequency band of 250hz to 20khz. For more information see your dealer or visit tcsdcc.com.

O SCALE PRODUCT NEWS

Atlas O is planning a production run of 50-foot 6-inch boxcars that will include a pink RailBox car that displays an On Track for A Cure anti-cancer slogan. Additional road names include Burlington Northern, Union Pacific, Berlin Mills, Green Bay & Western, Santa Fe (ex-Railbox), and Susquehanna.

The Trainman series model features a diagonal panel roof, non-terminating box corrugated ends, and a Youngstown 10-foot sliding door. Availability is planned for the second quarter of 2019. All

Atlas O rolling stock is available with a choice of 2-rail or 3-rail trucks, and couplers. For information contact a dealer or visit atlaso.com.

Narrow Gauge Modeling Company is selling a nicely detailed industrial stack. The injection molded 1:48 scale stack is 19-feet high by 21-inches in diameter. For information visit www.narrowgaugemodeling.com/product/ngm-r110.

Woodland Scenics has added two versions of O scale windmills to its selection of Built-&-Ready Landmark Structures. Item #BR5868 (left) is a new windmill topped with a shiny metal turbine. The item includes a round stock tank and hayrack. Item #BR5867 (right) is a heavily weathered windmill with rusted and broken turbine blades. Two oblong stock tanks, a hand pump, and a trough are included with this item. Both versions are currently available in HO and

N scale. For additional information contact a dealer or visit woodlandscenics.com.

HO SCALE PRODUCT NEWS

Accurail's latest release of HO scale kits includes a 36-foot Fowler boxcar decorated for the Wabash Railroad. The model represents a prototype built in 1916.

R. Bale

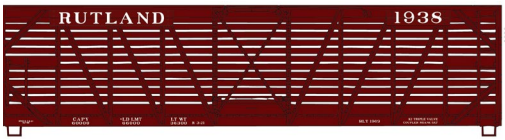
FOWLER CARS

Canadian Pacific master car builder W.E. Fowler patented his single-sheathed boxcar in 1911. The Fowler design featured a steel underframe with single-sheathed wood sides and ends. There were three panels on each side of the door with diagonal steel braces applied only on the two inner side panels. Between 1912 and the early 1920s, various North American car builders manufactured nearly 80,000 cars of Fowler design. Canadian versions of Fowler cars were sometimes called Dominion cars.

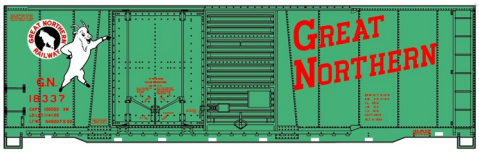
Although it does not show in this graphic, Accurail's version of this 36-foot Lake Shore & Michigan Southern boxcar has a

steel fishbelly underframe. The HO scale kit follows a double-sheathed wood prototype built in 1910 with wood ends and a steel roof.

An HO scale kit for this 40-foot wood ice refrigerator car decorated for Central Railroad of New Jersey is available now from Accurail. The model is based on a CNJ car built in 1925.



Also new from Accurail is an HO scale kit for a 40-foot wood stock car decorated for Rutland.



Completing Accurail's most recent release is an HO scale kit for this Great Northern 40-foot steel boxcar. The model represents a prototype from the 1960s that featured a combination of plug and sliding doors. All Accurail kits include appropriate trucks and Accumate knuckle couplers. For information contact a dealer or visit accurail.com.

Athearn has announced plans to make a special release of its Genesis series EMD SD70ACe diesel decorated as Union Pacific #4141 George H.W. Bush. The HO scale Genesis model will come in a special commemorative display

box. Both sound and non-sound versions of the historic locomotive will be available. Delivery is planned for December 2019.

R. Bale

Union Pacific 4141

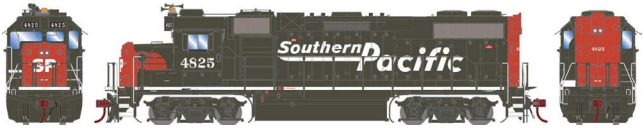
On October 2005, Union Pacific paid tribute to President George Herbert Walker Bush with a custom painted locomotive. Incorporating colors and elements of the Air Force One aircraft used during Mr. Bush's presidency, the new Union Pacific locomotive was numbered 4141 in honor of the nation's 41st president. The special locomotive, which replicates the Raymond Loewy-designed Air Force One markings as a striking symbol of national pride and strength, was revealed to the former president during a ceremony near the George Bush Presidential Library and Museum on the Texas A&M University campus in College Station, Texas. On December 6, 2018, UP 4141 led a special funeral train bearing the body of former President George Bush from Houston to his final resting place at College Station.

Athearn plans to deliver four HO scale versions of the EMD GP38-2 next November. The lineup includes Canadian Pacific units decorated as CP Rail and in the older maroon and grey scheme with the road name spelled out in script.

Both schemes of the model will feature a CP

nose and Blomberg B trucks with the new Canadian-style exposed bearings.

This Canadian National version with bold zebra strips will have chicken wire radiator grilles and Blomberg M trucks.



Athearn's Ready-to-Roll GP38-2 will also be available decorated for Southern Pacific in the speed lettering scheme. The model will feature an SP light package including front and rear gyralights, Q fans, and SP style snowplows at both ends of the locomotive.

Completing Athearn's 2019 release of GP38-2s is a high-nose Southern Railway version featuring the road's distinctive black handrails and white edges on the steps.

Athearn has included a PS 4740 cu. ft. covered hopper with triple discharge bays in its November production schedule.

Road names will be Pillsbury, Milwaukee Road, Montana Rail Link, Chicago & North Western, and Reading Blue Mountain &

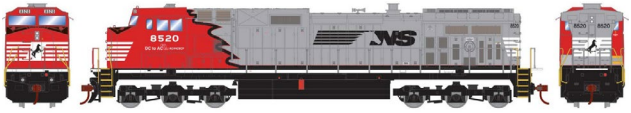
Northern. The Ready-to-Roll HO scale model comes with appropriate roller bearing trucks with 36-inch machined metal wheelsets.

Athearn has scheduled another release of a 65-foot 6-inch mill gondola. Three numbers each will be available for cars decorated for Burlington Northern, Western Maryland, Northern Pacific (black), Delaware & Hudson, Western Pacific (black), and Elgin, Joliet & Eastern.

Features of the HO scale model include wire grab irons, working drop ends, interior detailing, and machined metal wheelsets. Delivery of the gondolas is planned for November 2019.

In addition to the Detroit trucks shown here, Athearn is planning to release Ford F-850 Fire Trucks decorated in eight new schemes. Trucks painted red will be available lettered for Orchardville, Chicago, Washington D.C., Boston, and San Francisco. A pink truck lettered for "County Fire Dept." will also be part of this release.

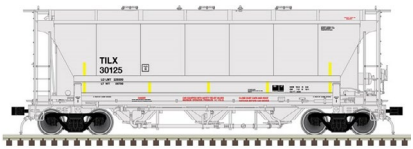
Unlettered trucks will be available in both red and white. Features of the HO scale model include cab interior details, clear window glazing, rubber tires, and numerous fire-fighting apparatus. Delivery is planned for November.



Roundhouse brand models coming from Athearn next November include a group of six-axle GE Dash 9-44CW locomotives. Road names for the diesel units will be Norfolk Southern, Santa Fe (red and silver Warbonnet), BNSF, CSX, two Union Pacific schemes, and BC Rail in two schemes: red, white and blue; and blue with zebra stripe ends.

Features of the economy-priced Roundhouse HO scale model include bi-directional LED lighting, non-working ditch lights, sunshades, wire grab irons, and 5,0000 gallon fuel tanks. Road specific details include three cab variations, and steerable or Hi-adhesion trucks with separate shock struts and brake cylinders. The locomotive is DCC-ready with a new 21-pin/NEM connector motherboard to simplify installation of an aftermarket decoder. For additional information on Athearn and Roundhouse products contact a dealer or visit athearn.com.

Atlas plans to introduce its new 3230 cu. ft. covered hopper during the second quarter of 2019. The newly-tooled Master series HO scale model represents a smaller version of Trinity's 5660 cu. ft. pressure differential car. The car's smaller size allows it to be loaded with heavier ladings such as dry cement.



Features of the ready-to-run model include separately applied wire grab irons and uncoupling levers, an etched metal roof walk, and appropriate trucks with metal wheelsets. Road names will be Roanoke Cement, CIT Group/ Capital Finance, Chicago Freight Car, General Electric Rail Services, TXI – GBRX, and Trinity Industries Leasing.

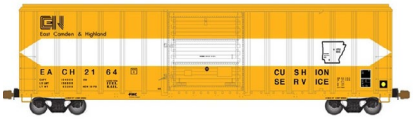
Additional Atlas models scheduled for released during the second quarter include this Master series ACF 11,000 gallon tank car. The HO scale ready-to-run model will ride on Bettendorf-style solid bearing trucks with metal wheelsets. Cars with a loading platform will be available decorated for Dow Canada, Columbia Southern, Dow, DuPont, Olin Chemicals Division, PPG Chemicals, Texas Natural Gasoline, Allied Chemical, Panoma, Mississippi Chemical, and Shell Chemical.

Road names for cars without loading platforms will be California Dispatch Line, Shamrock, Foley Butane, Tidewater Associated, and Warren.

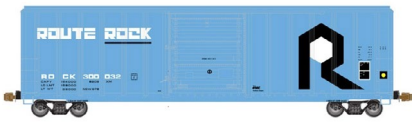
Atlas has scheduled the release of this HO scale 4650 cu. ft. ACF triple-bay Centerflow covered hopper during the second quarter. Road names will include Continental Grain, ACFX Carbon Black, BNSF, BNSF (Swoosh), Cargill Salt, Grand Trunk Western, Great Northern, Louisville &

Nashville, Norfolk & Western, Ralston Purina, Canadian National, and Thiele Kaolin.

Atlas's Master series model features an etched-metal roof walk, and 100-ton roller-bearing trucks with metal wheelsets.



Completing Atlas's second quarter release of new HO scale models is this Master series FMC 5347 cu. ft. boxcar. The ready-to-run model has a single sliding door, wire grab irons, X-panel roof, and roller bearing trucks with metal wheelsets.



Road names will be Camden & Highland, CAI, CSX, Kansas City Southern, North Louisiana & Gulf, and Route Rock. For additional information on all Atlas products contact a dealer or visit atlasrr.com.

Bowser sells a selection of HO scale trucks that accurately reflect prototype designs. Bowser models that represent solid-bearing prototypes include Pennsylvania Railroad caboose trucks (#40190), Pennsylvania Railroad Crown trucks (#40191, above left), 70-ton AAR Bettendorf-type trucks (#40192), Pennsylvania Railroad combination Coil and Semi Elliptical trucks (#40194 above right), and Arch Bar trucks (#40195).

Bowser HO scale trucks based on prototypes with roller-bearings include 70-ton Roadrailer trucks (#40196, above left), 100-ton trucks (#40193), and 70-ton trucks (#40197). All Bowser trucks are one-piece molded plastic frames fitted with insulated machined metal wheelsets (above right). For additional information contact a dealer or visit bowser-trains.com.

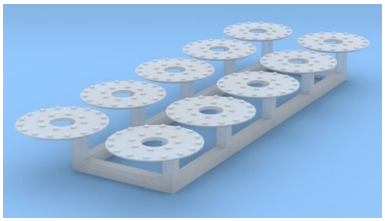
Broadway Limited Imports is selling an HO scale version of a Great Northern class S2 4-8-4 steam locomotive. The model is decorated in GN's distinctive Glacier Park

R. Bale

Great Northern's S-2 4-8-4s

Baldwin delivered six 4-8-4 Northerns to GN in 1929. Classified as S-1s, they had 73-inch drivers and, like most GN steam locomotives, Belpaire fireboxes. They were intended for passenger service but were soon relegated to hauling freight. The following year GN took delivery of 14 Baldwin-built class S-2 passenger 4-8-4s. They had radial-stay fireboxes, dual air pumps mounted on the smoke box front, and a 17,000-gallon welded Vanderbilt tender. GNs S-2s were the first 4-8-4s built with 80-inch drivers.

scheme that features a green boiler, red cab roof, and chrome plated cylinder covers and steam chest heads. The model is composed of a handcrafted brass superstructure mounted on a heavy diecast chassis. It is equipped with traction tires and is available with a choice of open or enclosed vestibule cab. The model comes with Paragon3 sound with Rolling Thunder that functions in both DC and DCC environments. For more information contact a dealer or visit broadway-limited.com.



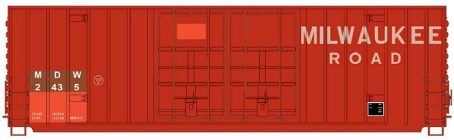
Eight-Wheeler Models is selling Allen Paper Wheel Inserts for HO scale wheels. The inserts are 3D printed in matte translucent plastic.

The wheel inserts are available for both 33-inch and 36-inch wheels in frets of 10, 14, 20, and 28 inserts. For more product information visit eightwheelermodels.com . To order go to www.shapeways.com/product/GRS7TB462/ho-scale-28pc-33-quot-allen-paper-wheel-inserts. For history on 19th century paper wheels visit www.midcontinent.org/rollingstock/dictionary/paperwheels.htm.

Funaro and Camerlengo has upgraded its HO scale resin kit for a New York Susquehanna & Western horizontal rib side hopper with a one-piece body. The retooled body includes full interior details. In addition to the

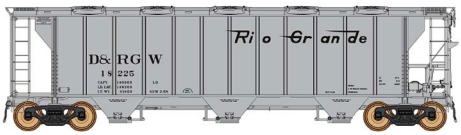
unique side ribs, the hoppers discharge to each side of the car rather than the conventional type that empty perpendicular to the tracks.

Decals and step-by-step instructions are included in the kit, which is sold without trucks or couplers. For additional information visit fandckits.com.



InterMountain Railway is expected to announce release dates soon on three new HO scale freight cars. Meanwhile the company continues to accept additional reservations. The models include a Gunderson 50-foot high-cube boxcar with double plug doors, Dreadnaught ends, shortened ladders, and a flat roof.

Road names will be Minnesota, Dakota & Western (ex-MILW); Burlington Northern, Milwaukee Road, Union Pacific, CP Rail (ex-MILW), Golden West Service, and two different schemes for Santa Fe and BNSF.

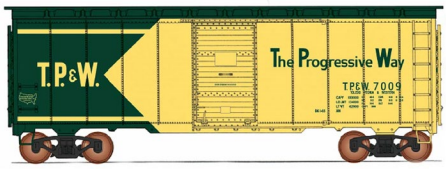


A release date is also expected to be announced soon on this ACF 2927 cu. ft. triple-bay covered hopper. In addition to the Denver & Rio Grande Western scheme shown above, road names will be Santa Fe, Illinois Central, Rio

Grande, Reynolds Metal, Missouri Illinois, Wabash, and two schemes each for Louisville & Nashville and Rock Island.

The HO scale ready-to-run covered hopper will feature several factory applied details including etched-metal roof walks.

InterMountain has also scheduled a new production run of its HO scale 1937 AAR 10-foot 6-inch modified boxcar. Road names for the ready-to-run model will be Toledo, Peoria & Western; Duluth, South Shore & Atlantic; Gulf, Mobile & Ohio; Rock Island, New York Central, Fort Worth & Denver, Missouri Pacific (Eagle slogan), Erie, Erie Lackawanna, Southern Railway, Union Pacific, Chicago and North Western, Soo Line, Missouri-Illinois, and two Canadian Pacific schemes.



Production of the 1937 AAR cars decorated for Western Pacific and Illinois Terminal is dependent on the receipt of additional reservations. All InterMountain HO scale ready-to-run models come with appropriate trucks with machined metal wheelsets. For additional information contact a dealer or visit intermountain-railway.com.

Kadee is selling a 1947 version of a Santa Fe 40-foot PS-1 boxcar. The HO scale ready-to-run model has a 7-panel Superior

sliding door, and Kadee trucks and couplers. The factory fresh paint scheme features a black roof and The Grand Canyon Line slogan. The message on the opposite side of the car is Ship and Travel Santa Fe All the Way. For additional information contact a dealer or visit kadee.com.

Summit USA is selling an HO scale kit for this modern office building. The kit provides all the structural parts including signs and copper mirror-glass windows. The structural components are milled black styrene plastic and laser-cut white and clear acrylic. Illustrated assembly and painting instructions are included. Figures, vehicles and scenery items shown above are not included. For more information visit www.summit-custom-cuts.com.

Tangent Scale Models has released another production run of its highly-regarded General Steel Casting 60-foot flat car. The HO scale ready-to-run model is available in seven decorating schemes including an ATSF class FT-7 flat car in the original 1956 brown paint scheme.

Additional road names include Wabash, Northern Pacific, Norfolk & Western car with 1971-era stacked lettering and ACI

labels, and three variations of Missouri Pacific cars in MOW service. A unique car in Tangent's latest release is Burlington Northern No. 610196, an ex-NP car lettered with the same slightly crooked reporting marks as the prototype.

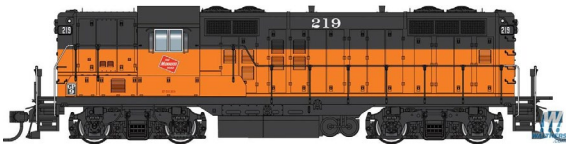
Tangent scaled their 1:87 models from General Steel Casting plans. Special details include wire grab irons and uncoupling bars, individual air hoses, appropriate trucks with metal wheelsets, and Kadee couplers. The models are weighted to NMRA recommended specifications. For additional information visit tangentscalemodels.com.

The latest version of **Walthers** Proto series EMD GP7 has several upgrades over previous editions of the popular HO scale road switcher. In addition to the use of wire grab irons and wire lift rings, the contour of the hood has been retooled to more accurately reflect the prototype.

Road names on this release will be New York Central, Baltimore & Ohio, Chicago & North Western, and Pennsylvania Railroad.

Walthers has also released HO scale ready-to-run models of EMD's GP9 road switcher. The Walthers Proto series model is

based on a Phase 1 version of the prototype with dynamic brake housings and different louver patterns that visually distinguish the GP9 from its GP7 predecessor. Road names include Bangor & Aroostook with a Nathan M3 air horn, winterization hatch, and a hood mounted bell.



The release includes a Milwaukee Road version that follows a prototype in service from 1959 to the early 1980s. Details include spark arrestors, two single-chime horns, and a winterization hatch. Milwaukee Road's GP9s did not have dynamic brakes.

Additional road names include Burlington Northern, Grand Trunk Western, and Southern Pacific. Walthers GP7 and GP9 models are available for standard DC operation and with LokSound Select DCC and Sound.

Walthers plans to release a new run of 55-foot 30,145 gallon tank cars this month. Walthers HO scale Proto series model is based on a Trinity prototype that has been updated with reinforced ends, revised safety end platforms, and multi-valve housing that complies with Federal Railroad Administration regulations. Road names include SCMX-Shell Oil, DPRX-PBF Holding, TILX-Trinity Industries Leasing (two schemes), and CBTX-CIT Group.

Features of the ready-to-run model include see-through etched-metal walkways and end platforms, factory installed grab irons, and roller bearing trucks with 36-inch wheelsets. For additional information contact a dealer or visit walthers.com.

R. Bale

30,145 Gallon Cars

TrinityRail designed and began building 30,145 gallon tank cars in early 2000. The 55-foot long cars are widely used to handle gasoline, ethanol, and crude oil. A unique spotting feature is a lever near the bottom of the ladder that permits workers to open and close the main value without having to venture under the car. By mandate the prototype cars are required to have reinforced end shields and double-shelf safety couplers.

Woodland Scenics has added HO scale lighted billboards to its line of Just Plug scenery items. Each billboard has preinstalled LED lighting directed on the advertising image. The initial release will include ads for five generic products. For additional information including details on a required power supply contact a dealer or visit woodlandscenics.com.

Yarmouth Model Works is selling a resin kit for a prototypically accurate model of a 40-foot 50-ton Chicago & Eastern Illinois boxcar. The cars had a 10-foot 4-inch interior height and a 6-foot door opening. ACF built 200 of the prototype cars for C&EI in January 1949. Youngstown doors were installed on the first 100 and Superior doors on the final 100 cars. Yarmouth's models features the distinctive oil canning effect from welded car sides. Details include custom decals, photo-etched metal running boards, and Tahoe Model Works 50-ton coil-elliptic trucks. For additional information visit yarmouthmodelworks.com.

N SCALE PRODUCT NEWS

American Model Builders is selling an N scale kit for a New York Central 19000 series wood caboose. The kit features numerous precision laser-cut components and laser-scribed sides. Details include cast resin platform steps and brake gear, cast white metal smoke jack, and injection molded turnbuckles. Helpful fixtures are included to aid the modeler in forming the handholds, ladders, and truss rods found on the prototype. Options for the model builder include square or rounded body corner posts, side windows that can be modeled open or closed, two different styles of end ladders and running boards, and variations on the end windows of NYCs distinctive low profile cupola. A set of screen doors and windows are provided along with custom decals and illustrated instructions that include information on painting and finishing the

assembled model. Trucks and couplers are not included. For additional information visit laserkit.com.

Athearn N scale models due next November include this 50-foot Pullman-Standard boxcar with a rated capacity of 5277 cu. ft. Details of the outside post car include non-terminating ends, short ladders, and PS sliding doors.

Road names will be SLSF-Frisco, Detroit & Mackinac, Green Bay & Western, RailBox, St. Marys Railroad, and Richmond, Fredericksburg & Potomac.

Athearn will include a group of N scale 65-foot 6-inch mill gondolas in the November release. Three numbers each will be available for Western Maryland, Burlington Northern (green), Northern Pacific (black), Delaware & Hudson, Western Pacific, and Elgin, Joliet & Eastern.

The models will have screw mounted Bettendorf trucks with machined metal wheelsets. For additional information contact a dealer or visit athearn.com.

Atlas plans to release several new products during the second quarter of this year including a group of N scale Alco FA-1 and FB-1 diesel locomotives. Introduced in the mid-1940s, the cab-style FA locomotive series was a joint effort of the American Locomotive Company and General Electric. Over 600 Alco units were built between 1946 and 1956.

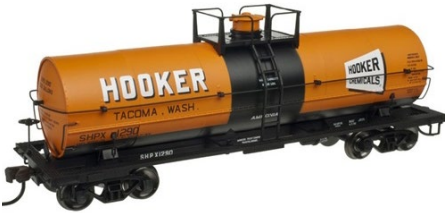
Atlas will offer the FA-1 and FB-1 locomotives decorated for New York Central, Erie-Lackawanna, Gulf, Mobile & Ohio; Lehigh & New England, Lehigh Valley, and the Pennsylvania Railroad. Undecorated units will also be available. The locomotives will be available for standard DC operation and with ESU LokSound DCC.

Atlas has included N scale versions of a Greenville 100-ton twin-bay open hopper car in its second quarter release. The prototype cars were used to haul a wide range of bulk commodities including rock, ballast, dirt, sand, gravel, and on some occasions, taconite ore.

In addition to the Golden West Services and Norfolk Southern cars shown above, the N scale ready-to-run

model will be available decorated for Southern Railway, Southern Pacific, Union Pacific, and Wisconsin Central.

N scale cushion coil cars are listed on Atlas's second quarter production schedule. The ready-to-run models have two removable hoods with stacking frames and a detailed trough floor like the 48-foot prototype cars Evans built in 1967. The models are a close stand-in for the later version Evans built in the 1970s. Road names for the Atlas N scale models will be Conrail, Burlington Northern, and BNSF.



Completing Atlas's N scale releases for the second quarter of 2019 is a group of ACF 11,000-gallon tank cars. The ready-to-run models will ride on Bettendorf-style solid bearing trucks with metal wheelsets. Cars with a loading platform will be available decorated for Hooker, Dow, Dow Canada,

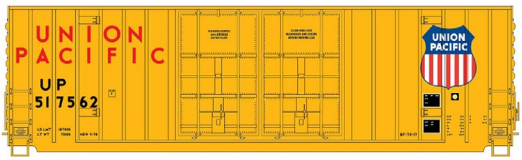
R. Bale

11,000 Gallon Cars

For a 10-year period beginning in the mid-1940s, ACF built several thousand 11,000 gallon tank cars. They were used to transport a variety of fluids that did not require an insulated tanker. Cars with top platform rails were used where there was no loading or unloading facility. Cars without the top platform were assigned to customers that provided permanent elevated loading and unloading facilities.

Columbia Southern, DuPont, Olin Chemicals Division, PPG Chemicals, Texas Natural Gasoline, Allied Chemical, Panoma, Mississippi Chemical, and Shell Chemical.

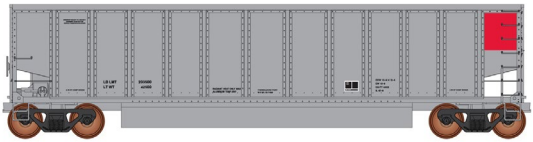
Road names for cars without loading platforms will be Warren, California Dispatch Line, Shamrock, Foley Butane, and Tidewater Associated. For additional information contact a dealer or visit atlasrr.com.



InterMountain Railway is accepting advance reservations for several new models planned for release during 2019. The N scale models include a Gunderson 50-foot high-cube boxcar with double plug doors, Dreadnaught ends, shortened ladders, and a flat roof.

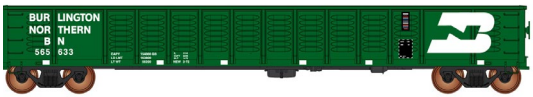
Road names will be Minnesota, Dakota & Western (ex-MILW); CP Rail (ex-MILW), Milwaukee Road, Burlington Northern, Union Pacific, BNSF, Golden West Service, and two Santa Fe schemes.

Reservations are also being accepted for a new release of N scale 13-Panel Coal Porters. Road names for the Value Line model will include New York Central, two CSXT schemes, and four variations of a Conrail car.



Gray cars with data only will be available with a choice of a red, yellow or blue end.

Also coming from InterMountain in 2019 is a new run of N scale 52-foot 6-inch corrugated side gondolas.



Road names will be Norfolk Southern, Ferromex, Burlington Northern, Union Pacific (yellow), union Pacific (boxcar red with a cover), and three different Missouri Pacific schemes. For additional information contact a dealer or visit intermountain-railway.com.

Kato USA plans to make another production run of EMD SD70ACe locomotives decorated in two popular Union Pacific commemorative schemes. The special run will include UP No. 4141 that honors the late President George H. W. Bush, and UP No. 1943 The Spirit of Union Pacific that pays recognition to the men and women of the United States Armed Forces.

The N scale locomotives will be available for standard DC analog operation, and with Train Control System DCC. ESU LokSound DCC Sound will be available on a special order

basis. Delivery is tentatively planned for next summer, however, Kato has indicated a minimum number of reservation must be received by January 7, 2019 in order for production to proceed.

Kato has expanded the selection of road numbers on the mid-2019 production run of its N scale GE ES44AC diesel locomotives. Units decorated for BSNF (Swoosh scheme), Union Pacific, and Canadian Pacific will each have two additional road numbers.

Standard DC analog units will be released in May with TCS DCC decoder versions following a month later. For additional information contact a dealer or visit katousa.com.

Micro-Trains Line is selling two versions of its N scale 12-1 heavyweight sleeper. One is decorated for Northern Pacific, the other for the Southern Railway. The NP two-tone green scheme represents a car built in 1924 for service on the Chicago-Seattle Oriental Limited.

According to M-Ts research team, the car was later transferred back to the builder's leasing service where it was repainted in classic Pullman green

and given gold lettering reflecting its new lessee, the Southern Railway. The well-travelled sleeper served the Southern into the early 1960s. Both versions of M-T's ready-to-run model ride on 6-wheel trucks.

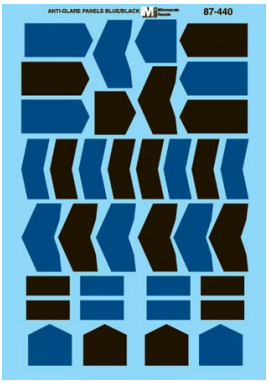
Micro-Trains has released a 40-foot boxcar decorated for CP Rail with the road number on the right hand side of the car. The N scale model represents a prototype built in the 1940s that was later upgraded and given CP's bold Pacman paint scheme in the 1970s. Additional changes included removing the running board and lowering the ladders.

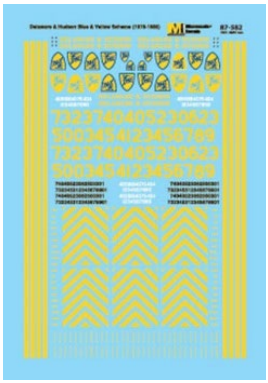
This Ferromex 89-foot tri-level enclosed autorack car represents a prototype built by Trinity Rail in 2015. M-T's N scale model is painted gray with red bands and patched reporting marks.

Micro-Trains is selling this N scale version of a 36-foot riveted steel caboose decorated for Norfolk & Western. The ready-to-run model model rides on roller bearing trucks with elliptical springs. For information contact a dealer or visit micro-trains.com.

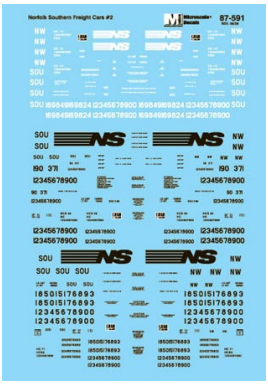
NEW DECALS, SIGNS AND FINISHING PRODUCTS

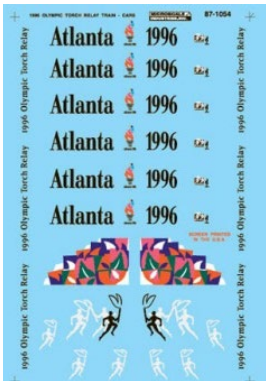
New waterslide decals from **Microscale** include anti-glare diesel nose panels in both dark blue and black, and Delaware





& Hudson hood diesels decorated in the road's blue and yellow scheme.





Additional new items include decals for assorted Norfolk Southern freight cars, and 1996 Atlanta Olympic Games slogans and logos for Union Pacific passenger car equipment. All items mentioned are available in both HO and N scale. Also new are 1- and 2-inch wide stripes in yellow and gold. For additional information contact a dealer or visit microscale.com .

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Briefly noted at press time ...

Accurail will include HO scale kits for a trio of 40-foot Pacific Fruit Express steel reefers in its January release. Owner's heralds will include a black Southern Pacific version and a three-color Union Pacific shield. The models represent R-40-14 cars built in the late 1930s with ice bunkers and hinged swing doors ...

Microscale reports HO and N scale decals for Southern Pacific heavyweight passenger cars of the 1920-1950 period are back in stock ...

Morning Sun will release two new titles this month including *Pennsylvania Railroad – Best of Bill Volkmer Volume 2*, and *Railfanning the Northeast with Richard T. Loane 1934-1954 Volume 1: DL&W, L&HR, and Rahway Valley* ...

ScaleTrains.com has Gunderson 5188 cu. ft. covered hoppers available for immediate release. The N scale Rivet Counter model is available in nine decorating schemes ...

Walthers will add to the lineup of SD70ACe locomotives decorated for Union Pacific No. 4141 George H. W. Bush. Availability of the HO scale Mainline series diesel is expected late this year. It will be accompanied by four UP Heritage Fleet cars including a flag scheme baggage car, a diner, a dome diner, and three dome lounge cars decorated for Harriman, Walter Dean, and City of San Francisco ...

SELECTED EVENTS

January 2019

(Many events charge a fee. Check individual info website for details.)

CANADA, ONTARIO, PARIS, January 20, Paris Junction Model Train Show, sponsored by NMRA Western Ontario Division, at Paris Fairgrounds, 139 Silver Street. Request info from Edward Howes at paristrainshow@gmail.com.

CALIFORNIA, PETALUMA, January 25-27, Bay Area PCR/LD/OP SIG Meet, at Sheraton Sonoma County, 745 Baywood Drive. Info at www.pcrnmra.org/sigs.

FLORIDA, COCOA BEACH, January 10-12, Prototype Rails RPM Meet, hosted by Mike Brock. Info at www.prototyperails.com.

INDIANA, NOBLESVILLE, January 27, 2019 Noblesville Train Show, sponsored by NMRA Central Indiana Division at Hamilton County Fair Grounds, 2003 Pleasant Street. Info at cidnmra.org.

KENTUCKY, LOUISVILLE, January 2-6, Model Train Show, sponsored by K&I Model Railroad Club, at Southwest Regional Library, 9725 Dixie Highway. Info at kandimrr.com.

MASSACHUSETTS, WEST SPRINGFIELD, January 26-27, Amherst Railroad Hobby Show, sponsored by Amherst Railway Society, at Eastern States Exposition Fairgrounds, 1305 Memorial Avenue. Info at www.railroadhobbyshow.com/aboutus.php.

February 2019, by location

MASSACHUSETTS, AUBURN, February 24, Greater Worcester Model Train Show, at Auburn Elks Club, 754 Southbridge Street (Route 12). Info at wmrr.org.

OREGON, PORTLAND, February 9, Second Annual Portland RPM Meet, Shilo Inn & Suites, 11707 NE Airport Way. www.brpmm.com.

TEXAS, STAFFORD (Metro Houston), February 16-17, Greater Houston Train Show, sponsored by San Jacinto Model Railroad Club at Stafford Centre, 10505 Cash Road. Info at sanjacmodeltrains.org.

WISCONSIN, MADISON, February 16-17, Mad City Model Railroad Show & Sale sponsored by NMRA South Central Wisconsin Division, at Exhibition Hall, Alliant Energy Center. Info at nmra-scwd.org.

WISCONSIN, STEVENS POINT, February 2-3, 22nd Artic Run Model Railroad Show & Sale, sponsored by Central Wisconsin Model Railroaders Ltd, at Stevens Point Holiday Inn and Convention Center, 1001 Amber Avenue. Request info from Jim Miller at jimbro67@gmail.com.

Future 2019, by location

AUSTRALIA, CANBERRA, KALEEN, March 30-31, 31st Annual CMRCI Model Railway Expo, sponsored by Canberra Model Railway Club, at UC High School, Baldwin Drive. For details phone Anthony Hunt at +61 0414 730 824.

CANADA, BRITISH COLUMBIA, BURNABY, May 3-5, Railway Modelers Meet of BC, at Simon Fraser University, Burnaby Campus, West Mall Centre. Info at railwaymodellers-meetofbc.ca.

CANADA, ONTARIO, KINGSTON, March 10, 30th Annual Rail O Rama Model Train Show, sponsored by Canadian Railroad Historical Association, at Ambassador Hotel, 1550 Princess Street. Request info from Graham Oberst at graham.oberst@bell.net.

CALIFORNIA, BAKERSFIELD, March 9-10, 26th Annual Model Railroad Show & Sale, at Kern County Fairgrounds, 1142 South P Street. Info at gehams.club.

ILLINOIS, COLLINSVILLE (metro St. Louis), July 26-27, St. Louis RPM Meet, at Gateway Convention Centre. Info at icg.home.mindspring.com/rpm/stlrpm.htm.

KENTUCKY, LOUISVILLE, March 23, 29th Annual Train Show & Sale, sponsored by NMRA Division 8 Mid Central Region, at Moose Lodge, 4615 Fegenbush Lane. Info at www.div8-mcr-nmra.org.

MISSOURI, SPRINGFIELD, March 23, 39th Annual Model Train/Swap Show, at Expo Center, 635 St. Louis Street. Info at omraspringfield.org.

OHIO, GREENVILLE, March 3, 38th Annual Model Railroad Swap Meet, sponsored by the Darke County Model Railroad Club at Youth Building, County Fairgrounds, 800 Sweitzer Street. Request info from Joe Worz at josephbw@hughes.net.

OHIO, KIRTLAND, March 16-17, Railfest Train Show, sponsored by NMRA Western Reserve Division 5, at Lakeland Community College, 7700 Clocktower Drive. Info a railfest.org.

OREGON, ELSIE, March 2, 15th Annual Pacific Model Loggers' Congress, at Camp 18 Restaurant & Logging Museum, 42362 Highway 26. Info at www.pacificmodelloggerscongress.com.

OREGON, PORTLAND, March 9, 34th Annual Swap Meet sponsored by Willamette Model Railroad Club at WD Jackson Armory, 6255 Northeast Cornfoot Road.

PENNSYLVANIA, GREENSBURG, March 22-23, RPM East. Details to be announced.

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.

TEXAS, FRISCO, June 27-30, 2019 Texas Special NMRA Lone Star Region Convention, at Drury Inn & Suites, 2880 Dallas Parkway. Info at 2019texasspecial.com.

UTAH, SALT LAKE CITY, July 7-13, 2019 NMRA National Convention and National Train Show. HQ at Little America Hotel. Info at nmra2019slc.org.

VERMONT, ST. ALBANS, March 9, Vermont Rails Model Railroad Show, sponsored by Northwestern Vermont Model Railroad Association, at Collins Perley Sports & Fitness Center. Info at nwvrailroad.org.

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. ■

Derailments

★★★★★
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